

Grove City College Bulletin

July 2018

**Catalog Issued for
2018-2019**
with calendars and
announcements of courses

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2018 - 2019 Academic Calendar

Fall Semester 2018

	<u>S</u>	<u>M</u>	<u>T</u>	<u>W</u>	<u>R</u>	<u>F</u>	<u>S</u>			
Aug.	19	20	21	22	23	24	25	Thur.-Sun.	Aug. 23 - 26	New student welcome and orientation
	26	27	28	29	30	31		Thursday	Aug. 23	Freshman residence halls open 8:30 am
								Saturday	Aug. 25	Upper-class residence halls open 9:00 am
								Monday	Aug. 27	Classes begin 8:00 am
								Tuesday	Aug. 28	Opening convocation 9:00 am
								Wednesday	Aug. 29	Freshman testing 7:00 pm
Sept.							1	Friday	Aug. 31	Last day to Drop/Add a class by 5:00 pm
	2	3	4	5	6	7	8			
	9	10	11	12	13	14	15	Monday	Sept. 3	Labor Day - No classes
	16	17	18	19	20	21	22	Thursday	Sept. 6	Monday evening classes meet (makeup for Labor Day)
	23	24	25	26	27	28	29			
	30							Saturday	Oct. 6	Homecoming
Oct.	1	2	3	4	5	6		Monday	Oct. 15	Mid-term grades due by noon
	7	8	9	10	11	12	13	Thurs-Sun	Oct. 18 - 21	Fall break - No classes - Residence halls remain open
	14	15	16	17	18	19	20	Monday	Oct. 22	Classes resume 8:00 am
	21	22	23	24	25	26	27	Thursday	Oct. 25	Jan/Spring registration - Seniors
	28	29	30	31				Friday	Oct. 26	Last day to withdraw from a class by 5:00 pm
Nov.			1	2	3					
	4	5	6	7	8	9	10	Thursday	Nov. 1/8/15	Jan/Spring registration - Juniors/Sophomores/Freshmen
	11	12	13	14	15	16	17	Saturday	Nov. 17	Thanksgiving recess begins, residence halls close 10 am
	18	19	20	21	22	23	24	Sunday	Nov. 25	Residences halls open 1:00 pm
	25	26	27	28	29	30		Monday	Nov. 26	Classes resume 8:00 am
Dec.							1			
	2	3	4	5	6	7	8	Mon.-Wed.	Dec. 10 - 12	Evening class finals
	9	10	11	12	13	14	15	Thursday	Dec. 13	Study Day
	16	17	18	19	20	21	22	Thur.-Tue.	Dec. 13 - 18	Final examinations
	23	24	25	26	27	28	29	Wednesday	Dec. 19	Residence halls close 1:00 pm
	30	31								

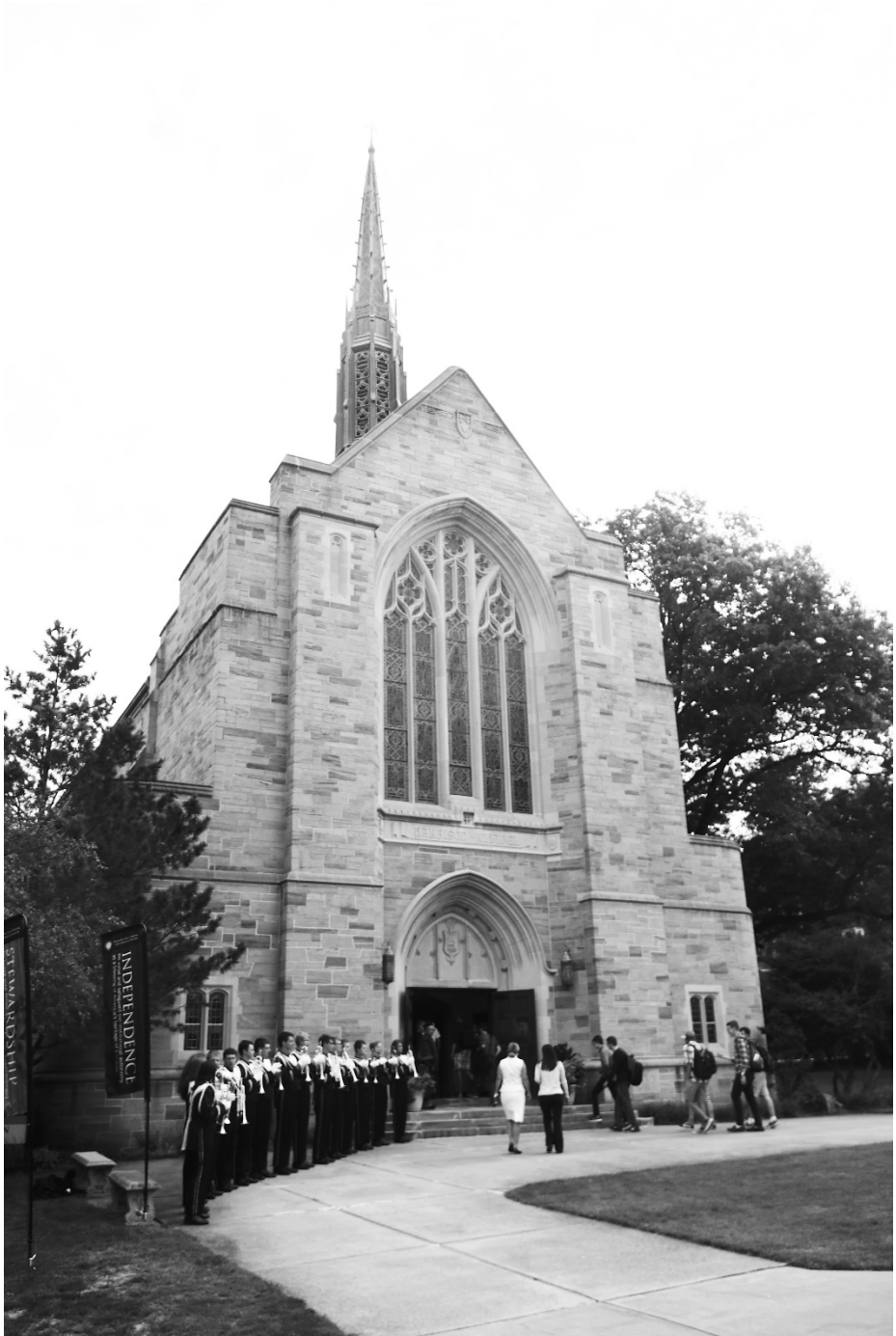
Spring Semester 2019

	<u>S</u>	<u>M</u>	<u>T</u>	<u>W</u>	<u>R</u>	<u>F</u>	<u>S</u>			
Jan.		1	2	3	4	5		Sunday	Jan. 6	Residence halls open for January Intersession 1:00 pm
	6	7	8	9	10	11	12	Mon.-Sat.	Jan. 7 - 19	January Intersession – Jan. 7 classes begin 9:00 am
	13	14	15	16	17	18	19	Sunday	Jan. 20	Residence halls open 9:00 am
	20	21	22	23	24	25	26	Monday	Jan. 21	Classes begin 8:00 am
	27	28	29	30	31			Thursday	Jan. 24	Senior Testing
								Friday	Jan. 25	Last day to Drop/Add a class by 5:00 pm
Feb.							1			
	3	4	5	6	7	8	9			
	10	11	12	13	14	15	16			
	17	18	19	20	21	22	23			
	24	25	26	27	28			Saturday	Mar. 2	Spring break begins, residence halls close 10:00 am
Mar.							1	Sunday	Mar. 10	Residence halls open 1:00 pm
	3	4	5	6	7	8	9	Monday	Mar. 11	Classes resume 8:00 am
	10	11	12	13	14	15	16	Monday	Mar. 18	Mid-term grades due by noon
	17	18	19	20	21	22	23	Thursday	Mar. 28	May/Summer/Fall registration - Seniors
	24	25	26	27	28	29	30	Friday	Mar. 29	Last day to withdraw from a class by 5:00 pm
	31									
Apr.	1	2	3	4	5	6		Thursday	Apr. 4/11/25	Course registration – Juniors/ Sophomore/Freshmen
	7	8	9	10	11	12	13	Thursday	Apr. 18	Easter recess begins
	14	15	16	17	18	19	20	Monday	Apr. 22	Evening classes resume 6:30 pm
	21	22	23	24	25	26	27	Tuesday	Apr. 23	Day classes resume 8:00 am
	28	29	30							
May		1	2	3	4			Fri.-Sun.	May 3 - 5	Family Weekend
	5	6	7	8	9	10	11	Mon.-Wed.	May 6 - 8	Evening class finals
	12	13	14	15	16	17	18	Thursday	May 9	Study Day
	19	20	21	22	23	24	25	Thurs.-Tue.	May 9- 14	Final examinations
	26	27	28	29	30	31		Wednesday	May 15	Residence Halls close for underclassmen 3:00 pm
June							1	Fri.-Sat.	May 17 - 18	Baccalaureate 7:00 pm / Commencement 10:00 am
								Saturday	May 18	Residence Halls close for seniors 6:00 pm
								Sunday	May 19	Residence Halls open for May Intersession 7:00 pm
								Mon.-Sat.	May 20 - June 1	May Intersession – May 20 classes begin 9:00 am

In keeping with the educational mission of Grove City College, the educational policies and procedures are continually being reviewed and changed. This bulletin, which is to be used as an informational guide, contains regulations, facts, and requirements that were correct at the time of publication. The Board of Trustees of the College reserves the right and authority to alter any or all of the statements contained herein, without prior notice; however, a change in graduation requirements will not be made retroactive unless the change is to the advantage of the students. Students are responsible for keeping informed of the official policies and meeting College requirements.

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History and Purpose

When Grove City College was chartered, a broad, Christian-based cultural consensus prevailed in America. By charter, the doors of the College were open to qualified students "without regard to religious test or belief." The founders of Grove City College, consciously avoiding narrow sectarianism, held a vision of Christian society transcending denomination, creeds, and confessions. They were committed to the advancement of free enterprise, civil and religious liberty, representative government, arts and letters, and science and technology. Believing that the fruits of civilization would be destroyed if religious and ethical roots were allowed to wither, the founders intended that the claims of Christ as God and Savior and of inspired Scripture be presented to all. They hoped that through its program of intellectual, moral, and spiritual education, Grove City College would produce young leaders, whatever their creed or confession, capable of pushing civilization forward on every frontier.

During the founding days of the College, Joseph Newton Pew said to Dr. Isaac C. Ketler, "Make the College healthful, for that is essential. Make it beautiful, for that is an education." In later years, J. Howard Pew, for nearly sixty years one of the guiding spirits in building Grove City College, stated that the College's "prime responsibility is to inculcate in the minds and hearts of youth those Christian, moral, and ethical principles without which our country cannot long endure." These principles have been part of the dynamic motivation of Grove City College. Founded in 1876, the school for many years was located near the center of Grove City on what is now known as the Lower Campus. In 1929, a farm across Wolf Creek from the old downtown campus was purchased, and the effort was begun to move the school from its gracious but limited area within the heart of Grove City, up onto the hill across Wolf Creek. Today, Grove City College has one of the most beautiful campuses in the country.

Grove City is an independent Christian college of liberal arts, sciences, and pre-professional programs. It is governed by a Board of Trustees composed of private citizens who make all policies for the school.

Those who are responsible for Grove City College believe that the progress and security of America are made possible and maintained by a society that: (1) recognizes its obligation to its religious heritage; (2) supports free political institutions; (3) encourages a free society; and (4) promotes an educational system which seeks to perpetuate these religious, intellectual, political, and economic ideals. The College gives its support to worthy efforts to improve the American way of life with its traditional rights and freedoms. It stresses not only the rights of the individual but also the individual's responsibilities. It recognizes its own responsibility to strengthen and perpetuate our free society. Consistent with Christian principles, Grove City College does not discriminate on the basis of age, race, color, creed, sex, marital status, disability, or national or ethnic origin.

From its founding days the College has endeavored to give young people the best in liberal, scientific, and pre-professional education at the lowest possible cost and, in keeping with this historic policy, maintains one of the lowest tuitions of any independent, high-quality college. It has always been coeducational. Current enrollment is limited to approximately 2,500 students. It is thoroughly Christian and evangelical in character.

The College equips its students with tools that will enable them to continue their education throughout their lives. It holds up to them Christian principles to assist in their spiritual and emotional development and to guide them in their service to society. It helps

them to see what makes life worth living. It teaches them basic disciplines that will be of great value in professional specialization at a university or in their careers after graduation.

The College aims to maintain a cordial and cooperative relationship between faculty and students. Staff members are chosen both for their competence and personal qualities. However, the College's mission necessitates the selection of a faculty who are professing Christians, experts in their chosen fields of learning, and thoroughly loyal to the purposes of the College. Faculty participation in student affairs, with a wide range of responsibility placed in the hands of the students themselves, characterizes the extracurricular program at Grove City. Counseling concerning academic and personal affairs is informal and effective. Many student enterprises are conducted under the supervision of joint faculty and student committees.

Realization of College ideals depends upon the complete cooperation of every member of the College community in:

- Searching courageously, persistently and reverently for truth
- Respecting the individuality of each person
- Seeking a Christian perspective in all fields of learning
- Honoring College regulations and policies
- Enabling the greatest possible mental, spiritual and physical development of every campus citizen

In brief, Grove City College aims to be a Christian college of liberal arts and sciences. It seeks to help its students to grow as persons, to achieve an integrated overview of reality, and to master at least one major discipline of knowledge. Its religious program, evangelical in its orientation, offers ample opportunity for young people to fellowship with Christian leaders who are dedicated to helping youths to understand the application of Christian principles to everyday life. Chapel services, convocation programs and Sunday vespers are designed to stimulate the campus community to think creatively and critically about ultimate issues in the light of the Word of God. Grove City College is an undenominational, but evangelical Christian college. The College aims to give young people the best in the liberal arts and sciences in a wholesome Christian environment.

Grove City College remains true to the vision of its founders. Rejecting relativism and secularism, it fosters intellectual, moral, spiritual, and social development consistent with a commitment to Christian truth, morals, and freedom. Rather than political, ideological, or philosophical agendas, objective truth continues as the goal of liberal learning. The core of the curriculum, particularly in the humanities, consists of books, thinkers, and ideas proven across the ages to be of value in the quest for knowledge. Intellectual inquiry remains open to the questions religion raises and affirms the answers Christianity offers. The ethical absolutes of the Ten Commandments and Christ's moral teachings guide the effort to develop intellect and character in the classroom, chapel, and co-curricular activities. And while many points of view are examined, the College unapologetically advocates preservation of America's religious, political, and economic heritage of individual freedom and responsibility.

THE VISION, MISSION AND VALUES OF GROVE CITY COLLEGE

Vision

Grove City College strives to be the best Christian liberal arts college in America. Grounded in conservative values, we develop leaders of the highest proficiency, purpose, and principles ready to advance the common good.

Mission

Grove City College equips students to pursue their unique callings through an academically excellent and Christ-centered learning and living experience distinguished by a commitment to affordability and its promotion of the Christian worldview, the foundations of free society, and the love of neighbor.

The stated values of the College are as follows:

Faithfulness

By God's grace, we remain committed to the Christian faith of our founders. While we continuously adapt our efforts in relation to the realities and challenges of this world, we serve a God who is the same yesterday, today, and tomorrow.

Excellence

In everything we do, from classrooms to residence halls, from performance stages to sports venues, we are devoted wholeheartedly to the highest standards of excellence. "...[D]o all to the glory of God." (1 Cor. 10:31)

Community

We foster life-long community engagement through a dynamic campus experience marked by service, hospitality, and abiding respect for others.

Stewardship

We honor the financial support and commitment of families, alumni, and friends of the College by managing our resources wisely.

Independence

We value and safeguard our institutional autonomy as a blessing of America's heritage of freedom.

GOALS AND OBJECTIVES OF GROVE CITY COLLEGE

In pursuit of its mission, Grove City College seeks to achieve the following goals:

- To provide an excellent education in a college which seeks to be thoroughly Christian and evangelical in character.
- To seek a Christian perspective of life which integrates all fields of learning by communicating the significance of the Word of God for all of life in all disciplines.
- To keep the door of educational opportunity open to all by maintaining low charges, thus minimizing financial burdens on families.

In pursuit of its mission, Grove City College seeks to achieve the following objectives:

- Promote academic development - Pursue and impart knowledge with conviction, grounded in Christian principles, that objective truth is the goal of intellectual inquiry. Offer a curriculum that is carefully reviewed and revised, avoiding educational philosophies that deny the possibility of truth or meaning, assert the relativity of values, or emphasize contemporary perspectives to the neglect of what has proved itself across the ages to be of value for human life. By example, and by the content of what is taught, foster Christian values, general and specialized knowledge, and commitment of lifelong learning required for successful living in our ever-changing society.
- Promote spiritual and moral development - Increase understanding of Christian precepts within the context of Christian fellowship and worship in order to help

develop leadership abilities and application of Christian truth. Prepare students for life in an increasingly diverse society and interrelated global community by promoting a Christian vision of humanity and community that transcends cultural differences. Promote a sense of personal responsibility and love of freedom.

- Promote social and emotional development - Provide opportunities for students to interact with faculty, staff and peers. Encourage students to take responsible leadership roles in student activities. Make available effective counseling and counseling referrals for personal, career, and academic concerns.
- Promote physical development - Provide intramural, intercollegiate, and personal recreational opportunities for men and women, and encourage individuals to engage in a healthy lifestyle that will promote lifelong fitness and wellness.
- Promote a sense of responsibility to larger community and society - Provide academic, spiritual, social, and cultural services to the broader community. Support traditional rights, freedoms, and responsibilities. Hold open the door of equal educational and employment opportunity by actively encouraging applications from qualified students and staff of all races, ethnicity, gender, and class.
- Model responsible administration - Under the oversight and direction of trustees and through careful stewardship of resources; engage a qualified faculty; support a quality academic program; provide beautiful, efficient facilities; maintain full enrollment; continue a debt-free, independent status; and focus and coordinate all activities and operations so that the College will achieve its goals and objectives.

ACCREDITATION AND MEMBERSHIPS

Grove City College is accredited by the Middle States Commission on Higher Education, 3624 Market Street, Philadelphia, Pennsylvania 19104. (267) 284-5000. The Middle States Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Accreditation. By the authority of the Pennsylvania Department of Education, the College has the right to award degrees and to recommend candidates for elementary, middle level, secondary, K-12, and special education school certifications. Undergraduate curricula in electrical and mechanical engineering have been accredited since 1991 and computer science since 2013 by the Engineering Accreditation Commission of ABET, (<http://www.abet.org>). The undergraduate curriculum in exercise science has been accredited since 2014 by the Committee on Accreditation of Allied Health Education Programs (<http://www.caahep.org>). Undergraduate curricula in accounting, entrepreneurship, finance, international business, management (formerly business management), and marketing (formerly marketing management) have been accredited since 2014 by the Accreditation Council for Business Schools and Programs (<http://www.acbsp.org>). The College is also an institutional member of the National Association of Independent Colleges and Universities, the American Association of Colleges for Teacher Education, the National Association of Colleges and Employers, the Pennsylvania Association of Colleges and Universities, the Association of Independent Colleges and Universities of Pennsylvania, and many other associations.

ACADEMIC SCHOOLS

Historically, Grove City College has divided its academic programs into two schools - the School of Arts and Letters and the School of Science, Engineering, and Mathematics. These two schools encompass all departments of instruction and provide students with a choice of numerous majors, minors, certifications, and pre-professional concentrations.

The *Alva J. Calderwood School of Arts and Letters* was dedicated in 2002 in honor of Dr. Alva J. Calderwood, a professor for 53 years and Dean of the College for 35 years. Dr.

Calderwood graduated from Grove City College in 1896, and after pursuing graduate studies at Harvard University, he returned to Grove City College to spend the remainder of his life teaching and administering. He was known as an accomplished professor and academic dean who took a personal interest in the lives of everyone. His example lives on as a guiding light today for faculty, students and administration. The Alva J. Calderwood School of Arts and Letters is comprised of the Departments of Accounting and Finance, Biblical and Religious Studies and Philosophy, Communication and Visual Arts, Economics and Sociology, Education, English, Entrepreneurship, History, Management and Marketing, Modern Languages, Music, Political Science, and Psychology and Social Work.

The *Albert A. Hopeman, Jr. School of Science, Engineering, and Mathematics* was dedicated in 1997 in honor of Albert A. Hopeman, Jr., who served for 44 years on the Grove City College Board of Trustees and as President of the Board from 1972 until his death in 1998. Mr. Hopeman left a deep imprint on the history and the future of Grove City College and is remembered for his loving attention to the College and its mission. He was awarded an honorary Doctor of Laws degree from the College in 1961. The Albert A. Hopeman, Jr. School of Science, Engineering, and Mathematics is comprised of the Departments of Biology, Chemistry, Computer Science, Electrical and Computer Engineering, Exercise Science, Mathematics, Mechanical Engineering, and Physics.

THE CAMPUS

Grove City College is located approximately sixty miles north of Pittsburgh in Grove City, Pennsylvania, a town with a population of eight thousand. Grove City is less than five miles from the intersection of U.S. Interstates 80 and 79, principal east/west and north/south routes. It is an hour and fifteen minutes' drive from the Pittsburgh International Airport and about ten minutes' drive from a 140-store retail outlet mall. The town of Grove City, organized as a borough, has diversified industries, a fine hospital, and a strong church community that takes great pride in its College.

The campus of Grove City College comprises over 180 beautifully landscaped acres, divided into two sections by Wolf Creek – Lower and Upper Campus. These two areas are connected by Rainbow Bridge, a stone arch footbridge, and by city streets. The Lower Campus, located on the edge of the business district of Grove City, is the site of the Robert E. Thorn Field for football and track; the Donald L. McMillan '32 MD Press Box facility; Phillips Field House; Colonial Hall Apartments; Carnegie Alumni Center; tennis courts; and a softball field. The Upper Campus is the site of administrative buildings; classroom, technology, and laboratory facilities; residence halls; health center; indoor athletic facilities and playing fields and outdoor playing fields; library; chapel; and fine arts center.

Educational Resources

Hall of Arts and Letters is a state-of-the-art teaching facility that features a lecture hall; 40 classrooms (including multimedia-equipped rooms and tiered “case study” rooms); 80 faculty offices; the Early Education Center; Hamilton Curriculum Library; and language labs. The building houses the Alva J. Calderwood School of Arts and Letters.

Hoyt Hall, named for Dr. Creig S. Hoyt who served for many years as Chair of the Department of Chemistry and Dean of the College, contains classrooms and modern laboratory facilities for ABET-accredited programs in electrical and mechanical engineering.

Rockwell Hall of Science, which houses the Department of Physics and some laboratories for the Departments of Biology and Chemistry, has been extensively renovated with modern teaching laboratories and multimedia classrooms. Major instrumentation includes an Automated DNA Sequencer, and Real Time Quantitative Polymerase Chain

Reaction (PCR) Thermocycler. Facilities also exist to support computational physics and chemistry, database searching/serving, and molecular visualization.

STEM Hall, completed in fall 2013, is home to the Departments of Chemistry, Biology and Computer Science. The design of the building encourages collaboration among the faculty and students, with myriad common areas for group work and glass-walled laboratories.

Henry Buhl Library provides services and collections to meet the needs of students and faculty. The Library maintains strong academic book collections of current and retrospective primary and secondary works, e-books, full-text online reference materials and journals, videos, music, and audio books. Its web page offers research guides by major and by course, links to scholarly sites, and help with citing sources. The web page and all e-resources are accessible from any network connection on campus and through the Virtual Private Network from off-campus. Interlibrary loan of books and funded document delivery of articles are available to all students and faculty. Book stacks are open for browsing. Network access, both wired and wireless, is available throughout the building.

When school is in session, the Library is open every day, totaling more than 100 hours each week, with the reference desk staffed daily. Librarians provide research assistance from the reference desk during posted hours, through classroom visits, and small-group drop-in sessions. E-mail requests for help are accepted and students may make appointments for research consultation.

Hamilton Curriculum Library is housed in the Hall of Arts and Letters and is designed for elementary and secondary education majors, with special emphasis on supporting field experiences and student teaching.

The J. Howard Pew Fine Arts Center, opened in 1976, is a memorial to Mr. J. Howard Pew, distinguished alumnus and Trustee of the College for nearly sixty years and President of the Board of Trustees from 1931-1971. This complex contains the Pew Memorial Room (housing a magnificent art collection donated to the College by Mr. Pew), a large modern auditorium, a small theater, art and music studios, rehearsal halls, practice rooms, classrooms, faculty offices, and exhibition halls. An addition completed in October 2002 contains additional classrooms, practice rooms, and a 188-seat recital hall.

The Weir C. Ketter Technological Learning Center, named for President Emeritus Ketter, who served his alma mater from 1916 to 1956, is constructed mostly underground, adjacent to the Henry Buhl Library, and houses state-of-the-art equipment for computer-assisted instruction. The 20,000 square-foot building contains computers for walk-up access, a lecture hall, training room, video production lab and houses the College's FM radio studio.

Residence Facilities

The residence halls of Grove City College are attractive and comfortable. An ongoing program of renovation and modernization maintains these facilities in first class condition.

Alumni Hall is located on the second floor of the Physical Learning Center and houses upperclassmen.

Colonial Hall, located on Lower Campus, is comprised of apartments for senior-level students; one wing of the hall is for women, the other for men.

Helen Harker Hall, named for the wife of the fourth president of the College, houses women.

Hicks Hall, named for College Trustee Lewis W. Hicks, houses men and contains a 500-seat dining facility.

Hopeman Hall, named for College Trustee Bertram C. Hopeman, houses men.

Isaac C. Ketter Hall, built as a memorial to the founder of the College, houses men and contains a recreation lounge on the ground floor that is open to all students.

Larry House honors former Trustee R. Heath Larry '34, an icon of Pittsburgh industry, and his wife, Eleanor (Ketler '37) Larry, granddaughter of College founder Isaac Ketler and daughter of College President Dr. Weir Ketler, Class of 1908.

Lascell House honors David M. Lascell, Esq., chief counsel to the College in its landmark Supreme Court case of 1984, *Grove City College vs. T.H. Bell, Secretary of Education*.

Lincoln Hall, named for the 16th president of the United States, Abraham Lincoln, houses men. It was a gift from the J. Howard Pew (Class of 1900) family.

Mary Anderson Pew Hall, named for the wife of the first president of the Board of Trustees, houses women and contains a 450-seat dining room and a 145-seat special-event dining room.

Mary Ethel Pew Hall, named for a long-time member of the Board of Trustees and benefactor of the College, houses women.

Memorial Hall was built as a memorial to Joseph Newton Pew, first president of the Board of Trustees, and houses men.

Stewart House is named in honor of successful local businessman and Trustee William C. Stewart '61 and his wife, Gay, for their generosity and contributions of time, talent and treasure.

Administration and Student Support Buildings

Breen Student Union is named in honor of alumni Ed and Lynn Breen, generous benefactors of the College and members of the class of 1978. The Breen Student Union houses the Office of Student Life and Learning, bookstore, mailroom, and commuter lounge. It also houses the campus snack bar, called the Gedunk, which contains a wood fire pizza oven, grill stations, and a Bistro. Private meeting and banquet rooms are also available and may be reserved for special occasions. The Breen Student Union is open 24 hours a day during the academic year.

Carnegie Alumni Center, originally constructed as a library for the College and community by its benefactor Andrew Carnegie, houses offices for the alumni, institutional advancement, and communications departments.

Crawford Hall is the administrative center of the College. It was made possible by a gift from Harry J. Crawford, who served as a member of the Board of Trustees for many years. In addition to offices, it contains an auditorium and a social room for student and faculty gatherings.

Samuel P. Harbison Memorial Chapel is the center of the religious life of the campus. It provides an inspiring place of worship and a place for quiet meditation. It was built by the sons of Trustee Samuel P. Harbison as a memorial to their father, who for many years served the College as a trustee. The beauty of the interior is enhanced by hand carved woodwork and jewel-like stained glass windows. The organ, a four manual Kimball, is a memorial to Frances St. Leger Babcock, wife of F. R. Babcock, a former president of the Board of Trustees. The east and west transepts of the chapel were gifts respectively of Miss Ethel Pew, a trustee of the College, and the Presbyterian Church (U.S.A.).

Rathburn Hall functions as the hub for campus ministry and student community outreach groups, and is available for use by other student groups, as well. Named in honor of current Board of Trustees Chair David Rathburn '79 and his wife, Jayne, the facility contains offices for the Chapel staff, seminar rooms, and a work room for student ministry groups. The building provides a venue for campus group meetings and large group receptions in the Morledge Great Room, as well as a comfortable lounge area for Bible study and small groups. While Christian ministry at Grove City College takes place on every part of the campus, this building represents the College's commitment to maintaining an authentically Christian environment.

Zerbe Health Center provides outpatient health care by physicians who make weekday visits and by staff nurses. Beds are available for non-overnight, in-patient care of students with minor ailments. Zerbe also houses the college's Counseling Center. For more information, see 'Health Services' in the Student Life section of the *Bulletin*.

Physical Education Facilities

The Physical Learning Center features an arena, an intramural room, two swimming pools, an eight-lane bowling alley, and other recreational facilities. The main offices for the Department of Exercise Science and Athletics are located at the south end of the building, as is the Career Services Office, which contains staff offices, a library, and professional interviewing rooms for on-campus recruiters. The Arena, which has a seating capacity of 1,800, is used for intercollegiate and intramural basketball, volleyball, club sports, recreation, and special events. The Intramural Room is equipped with four indoor tennis courts, four volleyball courts, four basketball courts, four badminton courts, a conditioning track, and two pits for pole vault and triple and long jump. The room also provides an ideal location for dances and other social events. Specific areas for various activities include the Hall of Fame room; Heritage Hall; the Exercise Science lab; audio-visual classroom; two fitness center rooms equipped with aerobic, Cybex and free-weight equipment; two aerobic/dance studios; and six racquetball and handball courts. The building also houses an athletic training room, athletic laundry room and five men's and women's locker rooms.

The College has three outdoor playing-field areas. On Lower Campus, an all-weather eight-lane 400-meter track, complete with a steeplechase water pit, surrounds Robert E. Thorn field. The football field, featuring artificial turf, lights and a seating capacity of 3,500, forms a natural amphitheater bounded on the northwest by a brick and concrete stadium. Adjacent to Thorn Field are the jumping and throwing facilities for field events. Phillips Field House provides locker, training, and coaches' rooms for Thorn Field. The Walter-Zbell Tennis Courts adjoin this facility. Also on Lower Campus is the women's softball field, which is located on Pine Street. On Upper Campus, there are two playing fields for varsity soccer and Jack Behringer Field for varsity baseball. Seven touch-football fields, four softball fields for intramural sports, three multi-purpose intramural fields, and the marching band practice area are located across the street on Madison Avenue behind the Physical Learning Center.

THE CENTER FOR VISION & VALUES

The Center for Vision & Values is a Grove City College think tank that focuses on public policy and social issues from the perspectives of Christian faith and individual freedom. The Center generates faculty research, opinion editorials, and media interviews, and holds at least one major conference each year for which students can register and earn academic credit. The Center for Vision & Values Endowment exists for the benefit of the Center's student fellows.

ENDOWMENTS

The endowment resources of the College have been made possible by the generous gifts of individuals and foundations. Endowments benefiting the College include the following special funds:

The William H. Burchfield Fund. Established in 1995, this trust fund is used to support the College's renewal and replacement program for campus buildings.

The Center for Vision & Values Endowment. Established in 2010, this fund is used to support the annual programs of the Center.

Harry J. Crawford Trust Fund. Established through a gift by Harry J. Crawford, a former trustee of the College, this fund is used for the maintenance of Crawford Hall.

Clark G. Drake Library Fund Memorial. This fund, in memory of the late Clark G. Drake, is used for library purposes.

The Entrepreneurship Center Endowment. Established by an anonymous donor, this fund is used to support the operations of The Center for Entrepreneurship + Innovation at Grove City College.

Elizabeth Harbison Fund. Miss Martha Harbison, a former student, created a fund for the benefit of the Library, as a memorial to her mother Mrs. Elizabeth Harbison.

Samuel P. Harbison Fund. Established by the Harbison estate and the Board of Christian Education as a memorial to Samuel Pollock Harbison, an early member of the Board of Trustees, this fund is used to support the Biblical & Religious Studies and Philosophy Department.

H. D. Hough, Jr. Library Fund. Established by H. D. Hough in memory of H. D. Hough, Jr., this fund is used to purchase books for the library.

Howard-Nelson Fund. Established by Mr. and Mrs. Samuel Nelson in memory of their parents, the income from this fund is used for the benefit of the Departments of Modern Language and English.

The Howell-Jenkins Fund. Established by Mrs. Josephine Stiefel Jenkins in memory of her husband, the income from this fund is used for general purposes.

Ellen Bell Ketler Fund. Established by the family of the late Ellen Bell Ketler, the income of this fund is used for the benefit of students, either as scholarships, student awards, or for books, works of art or other items, which will add to the cultural resources of the College.

William Richard Ketler Fund. Established by his parents, Weir C. and Ellen B. Ketler, the income from this fund is used for improvements to the Student Union, for scholarship grants, for the purchase of books, or for the purchase of works of artistic, historical or cultural value.

The Kreutner Library Book Purchase Endowment. Established in 1998 by James and Betty Kreutner, this fund is used for the purchase of library books in English, English Literature or Journalism.

Albert C. Lamb Fund. Established by Miss Mary C. Lamb, this fund is used for books for the Biblical & Religious Studies and Philosophy Department.

Joanne F. McVay & William J. McVay Conservative Student Fellowship Endowment. Established by Drs. Joanne and William McVay, this fund is used to provide assistance to fellows pursuing research of and education in conservative policy.

The Samuel M. Nelson & Helen L. Nelson Memorial Trust. Established by Mr. & Mrs. Samuel M. Nelson, the income of this fund is used to support full professor salaries in the Liberal Arts program.

Miriam (Shellito '52) Parker and Royal Parker '52 Organ Recital Endowment. The fund was established by the generosity of the family of Miriam and Royal Parker.

The Phillips Interdisciplinary Endowment Fund. Established in June 2016 by Michael and Marlene Phillips to encourage students to minor and participate in interdisciplinary activities. Eligible students may apply for funding to participate in special programs or projects, attend conferences, or engage in research opportunities.

The Dr. and Mrs. Arthur William Phillips Charitable Trust. This trust fund provides for the maintenance of Phillips Field House.

Reed Fund. Established by Mr. E. B. Reed, this fund is used for books for the Department of Management and Marketing.

The Richard S. Robinson, Sr. Presidential Fund for Student Innovation. Established by Richard S. Robinson, Sr. in December 2015. The Fund is available for the discretionary use

by the President of the College for the following: student programming in the Chapel and campus ministries; motivational speakers and competitions for The Center for Entrepreneurship + Innovation at Grove City College and the Department of Management and Marketing; and student research opportunities, internships and equipment in Science, Engineering and Mathematics.

The Richard G. Staley '62 Visionary Entrepreneurship Speaker Series. This endowment shall provide assistance to The Center for Entrepreneurship + Innovation at Grove City College to obtain speakers so that the students, alumni, and the community can learn from the experience of real world entrepreneurs and innovators.

Stiefel-Jenkins Fund. Established by Josephine Stiefel Jenkins, this fund is used to support the study of economics.

The Storey Fund. Established in 1981 by Dr. James Storey, this fund is used to support the Chemistry Department.

The Bob Thorn Fund for Annual Giving. This endowment, established through the estate of Robert E. Thorn, is directed for use in the Annual Giving Fund.

The Wolverine Innovation Fund. Established in 2018 by Dr. Mark E. Thompson, MD, this fund is used to support the Center for Entrepreneurship + Innovation at Grove City College.

In addition to the above special funds, the following funds have been endowed to support the general operations of the College:

Clifford Bowden Fund

James M. Dugan Fund

General Endowment Fund

Lewis Hicks Endowment Fund

Ketler Foundation Fund

Gen. and Mrs. Richard Mellon Fund

Clark T. and Samantha E. Pease Endowment Fund

S. T. Ramage Fund

Redick and Brandon Endowment Fund

Eva Rutledge Fund

Beatty B. Williams Fund



Admission

While Grove City College has expanded its facilities during the past several decades to accommodate a larger number of students, it continues to believe that its objectives can be best realized by maintaining its character as a Christian college of liberal arts and sciences. The requirements for admission are designed to enable the College to select those students who will both contribute to and benefit from this type of college community. Prospective students seeking an education that will prepare them to take their rightful place in a free society and willing to accept the responsibilities and rights of campus citizenship are welcome at Grove City College regardless of age, race, color, creed, sex, marital status, disability, or national or ethnic origin.

Prospective students are invited to seek any additional information they may desire from the Director of Admissions or the Director of Financial Aid.

ADMISSION APPLICATION PROCESS

Grove City College continues to be highly committed to a holistic, individualized, and fair acceptance process designed to take into consideration the total person. The Admissions Committee carefully considers many elements in the reading of applications. This process includes consideration of the content and rigor of the student's academic course work, grades, class rank (if applicable), standardized test scores, counselor/teacher/pastor recommendations, extracurricular involvement, leadership qualities, an essay, and an optional, though highly encouraged, personal interview. There are no absolute minimum standards for grades, class rank, or test scores, and the student's personal accomplishments and potential for success are considered in a selective admission process.

Applications

To obtain a Grove City College application, call (724) 458-2100, or access it on-line at <http://www.gcc.edu/apply>. Applications may be submitted on-line or by postal mail to the College. The application fee is \$50. All supporting documents must be mailed or submitted electronically to the Admissions Office by the appropriate deadlines. Please note that once the application has been submitted, it becomes the property of the College. Letters of recommendation, transcripts, and photographs will not be returned or photocopied.

Recommended Coursework:

Graduation from and recommendation by an approved secondary school is required. Homeschool or classical school students, please refer to the section titled *Homeschooling Requirements* for additional details. An academic, college preparatory curriculum is highly recommended, including:

- 4 years of English
- 3 years of social science
- 3 years of science
- 2 years of history (which may overlap with social science)
- 3 years of math (The study of mathematics up through calculus is required and/or recommended for entrance into the programs of mathematics, science, and engineering.)
- Foreign language: Students pursuing a Bachelor of Arts major or a non-science Bachelor of Science major will be required to complete a full year of a foreign

language at the intermediate level at Grove City College, unless they meet one of the following criteria:

- 3 years of the same modern, widely-spoken foreign language during high school, such as Chinese, French, German, or Spanish, with an average grade of “B” or higher, or
- 2 to 3 years of the same classical written language during high school, such as Latin, New Testament Greek, or Biblical Hebrew with an average grade of “B” or higher, which will *partially* fulfill the foreign language requirement. Students must complete two additional courses as outlined in the “General Education and Degree Programs” section under the “Foreign Language” guidelines.

Grade Point Average

When assessing grade point average, consideration is also given to class rank and to the strength and frequency of Honors, Advanced Placement, and International Baccalaureate coursework in a student’s curriculum. Consistently strong academic performance throughout a candidate’s four-year high school record is an important component of the evaluation process.

Standardized Test Scores

Scores from SAT, ACT, or CLT (Classical Learning Test) are required and may be sent directly to Grove City College from the testing center at the student’s request. Grove City College will also accept scores that are a part of the official high school transcript. For students who take the SAT, ACT, or CLT more than once, the College records the highest sub-scores achieved and will continue to consider each applicant’s best sub-scores, even if from different sittings; therefore, it is to an applicant’s advantage to send all test scores from each test date.

Grove City College combines only the Critical Reading and the Math sub-scores for a total score, with the highest possible score being 1600 for the SAT.

Scores are required from all freshman and transfer applicants (including international students) who are attending high school in the United States, all freshman and transfer applicants who attend overseas American or international schools, and international freshman and transfer applicants who are able to take the SAT in their country. For international applicants, TOEFL scores are also accepted. The minimum TOEFL score considered is 550 paper-based, 213 computer-based, or 79-80 Internet-based.

Personal Interview

The interview lays a significant role in our selective admission process. In addition to providing us with more three-dimensional insight through one-on-one conversation with a student, the interview may also factor into an applicant’s standing for the Trustee Scholarship Program. Serious applicants who live within a day’s drive of campus are encouraged to schedule a personal interview by calling Admissions Office at (724) 458-2100 or visiting <http://www.gcc.edu/visit>. Students wishing to interview are not required to submit an application prior to the interview. Early Decision applicants should interview prior to November 1 (Early Decision I) or December 1 (Early Decision II), and Regular Decision applicants should interview prior to January 20.

Counselor/Teacher and Pastor/Mentor Recommendation Letters

All freshman applicants should submit one academic letter of recommendation from a teacher or guidance counselor and one spiritual/character letter of recommendation from a pastor, youth pastor, or someone who can speak to the applicant’s spiritual life and

character. Additional letters may be submitted, although the number of recommendations received beyond the two required does not factor into the decision-making process. Recommendation letters are not required to follow a specific form or template and may be emailed to admissions@gcc.edu or faxed to (724) 458-3395.

Auditions

All applicants for the Bachelor of Music degree must fulfill the audition requirement prior to the November 1 (Early Decision I), December 1 (Early Decision II), January 20 (Regular Decision I), or March 20 (Regular Decision II) application submission deadlines. The applicant must contact a representative from the Department of Music at (724) 458-2084 to arrange an audition either in person or via CD or DVD. Information regarding audition dates is available at <http://www.gcc.edu/applymusic>.

EARLY DECISION

Students who are prepared to make a commitment to Grove City College as their first choice should apply through the Early Decision program. This program requires the submission of the application postmarked by November 1 (Early Decision I) or December 1 (Early Decision II). Supporting documents should accompany the application; however, they may also be submitted shortly after submission of the application form. Decision letters will be mailed on December 15 (Early Decision I) and January 15 (Early Decision II). Students applying to Grove City College under the Early Decision program should not apply to any other institution through their early decision programs, although they are welcome to submit applications to other schools under early action, regular decision, or rolling admission programs. A student who has applied through Grove City College's Early Decision program agrees, upon acceptance, to withdraw applications to all other institutions and submit no additional applications. Students who require a financial aid estimate should contact the Financial Aid Office at (724) 458-3300 during the application process.

Under the Early Decision program, three decisions may be issued: an acceptance, a denial, or a deferral. Those students who are deferred will be considered for admission with the Regular Decision applicants and will be notified of their admission status on or after February 20.

A student should not apply through the Early Decision program unless the student is fully committed to accepting an offer of admission from Grove City College. Applicants who are offered admission must submit a matriculation payment of \$250 postmarked by January 15 (Early Decision I) or February 15 (Early Decision II). The matriculation payment includes a \$150 matriculation deposit, which may be refunded after graduation or upon voluntary withdrawal from the College after matriculation, and a non-refundable matriculation fee of \$100.

REGULAR DECISION

The Regular Decision program is recommended for students who are considering several colleges and plan to choose their school after notifications have been received, or for students who are not prepared to make a commitment to Grove City College through the Early Decision program.

All supporting documents for Regular Decision applicants, including the completed application for admission, current academic transcripts, academic data form, two recommendation letters, and results from SAT, ACT, or CLT tests, must be postmarked by January 20 (Regular Decision I) or March 20 (Regular Decision II) of the senior year.

Results of the Regular Decision process will be mailed from the College on February 20 (Regular Decision I) or April 15 (Regular Decision II). At that time, three decisions may be issued: an acceptance, a denial, or an offer to be placed on a waiting list (for a limited

number of students). Prospective students who are offered admission must submit a matriculation payment of \$250 postmarked by May 1. The matriculation payment includes a \$150 matriculation deposit, which may be refunded after graduation or upon voluntary withdrawal from the College after matriculation, and a non-refundable matriculation fee of \$100.

Applications postmarked after March 20 are late and will be considered for fall enrollment as space permits. If space is not available, students may reactivate their application for admission to the College during the following spring semester.

Once accepted, under the Early Decision or Regular Decision program, a student must remain in good academic and social standing during the senior year of high school. Grove City College retains the right to withdraw an offer of acceptance if a significant change occurs in any area of a student's profile.

DUAL ENROLLMENT PROGRAM

The Grove City College Dual Enrollment Program provides high school students, who have not yet matriculated full-time to a college or university, the opportunity to apply to Grove City College and take college courses for credit during their junior and/or senior years in high school. A student must submit the Dual Enrollment Program Application, High School Authorization Form (completed by the parent/guardian of homeschooled students), and Parental Consent Form. A current high school transcript must also be submitted. Applicants to the Dual Enrollment Program are recommended to hold an unweighted cumulative high school grade point average of 3.50 or higher. All forms are available online at www.gcc.edu/dualenrollment.

Course registration for Dual Enrollment Program students opens on December 1 for the following spring semester and on May 1 for the following fall semester. Students may enroll in courses with available seating as long as prerequisites for the class have been met, with permission from the instructor. Students are limited to seven credit hours during a fall or spring semester and four credit hours during a January or May Intersession term. Internships, independent study, study abroad, music ensembles, and music lessons are currently not available to Dual Enrollment Program participants. Only online courses specifically designated for Dual Enrollment may be taken by Dual Enrollment Program participants. Students are responsible to follow all College policies as stated in the *Bulletin* (academic policies) and *The Crimson* (student life policies).

EARLY HIGH SCHOOL GRADUATION POLICY

Grove City College will accept applications from high school juniors who are seeking early high school graduation. Applicants should have utilized all available curricula at their high schools and should communicate their intentions to their guidance counselor prior to applying to the College. If the applicant has additional high school requirements to complete for graduation, the student will be solely responsible for appropriate course enrollment. This includes seeking high school approval of all needed courses before the start of the first semester at Grove City College.

The Admissions Committee reviews high school junior applications using the same criteria as for students completing the traditional four-year high school experience. These criteria include curriculum; grades; class rank (if applicable); SAT, ACT, or CLT scores; letters of recommendation; essay; and extracurricular involvement. In addition, a personal interview with an Admissions Counselor contributes substantially to the application process. High school junior applicants must additionally submit a letter from their guidance counselor supporting their early college enrollment.

SELECTING A MAJOR

Grove City College recommends that all applicants declare a major, since this is one of the many methods the College utilizes to shape the freshman class. There are limited openings for each of the majors offered at the College, and each applicant may be considered for only one major.

Students who are undecided about choosing a major may select either “Undeclared—Liberal Arts” or “Undeclared—Sciences” and must choose a major by the end of their sophomore year. After enrolling at the College, a student may change his/her originally declared major or add an additional major pending departmental approval.

HOMESCHOOLING REQUIREMENTS

The College welcomes the applications of homeschooled students and recognizes that each homeschooled family is unique. Therefore, homeschooled students must follow the application instructions, including the submission of a transcript(s) and an outline (or resume) of extracurricular activities. The transcript should include the student’s course of study and grades (with a letter grade assigned to each class using a 4.0 GPA system). Standardized test scores (SAT, ACT, or CLT) should be requested and submitted directly from the test center. Since some homeschooled students do not have grades, SAT, ACT, or CLT scores may be weighed more heavily in determining a student’s ability to succeed academically at Grove City College. The required letters of recommendation should come from individuals outside the home. Small portfolios are welcome but not required. An interview is strongly recommended, and students should be prepared to elaborate on their coursework and activities, as well as their college search and personal goals.

The College defines a homeschooled student as one who is taught at home by his/her parent(s) or by a group of individuals outside the traditional educational system. It is acceptable for homeschooled students to supplement their coursework with college-level courses. Homeschooled students who have supplemented their homeschool education with college classes will be accepted as freshmen and will progress to sophomore, junior, and senior class standing along with their peers.

TRANSFER STUDENTS

Any applicant who has already completed high school and has enrolled at a regionally accredited institution for any college classes should apply as a transfer student. Transfer students may be accepted for either the fall term (August) or spring term (January). Students may be admitted to advanced standing upon presentation of honorable dismissal and acceptable grades. The prospective student must have a minimum cumulative grade point average of 2.0 on a 4.0 scale in order to be considered for enrollment. A student’s class standing will be determined by the Registrar’s Office. The Biology and Biochemistry majors are more limited for transfer students, and their availability is subject to departmental approval. At this time, applicants for the Mechanical Engineering major will be handled on a case-by-case basis and are not guaranteed admission due to capacity limits.

The application postmark deadline for fall transfer is August 15, and the postmark deadline for spring transfer is January 1. The transfer process occurs through rolling admission, so as soon as a student’s file is complete, an admission decision will be made. Applications may be found online at <http://www.gcc.edu/apply>. Transfer students who are applying for financial aid should submit their applications for admission and financial aid at the same time. A student who has attended another regionally accredited college or university, whether he/she is a candidate for freshman or upperclassman standing, must present any and all official college transcripts and high school credentials.

TRANSFER CREDIT

College credit is awarded to those students who have earned a “C” or higher or P/Pass in courses that have been completed at a regionally accredited institution and approved by Grove City College for transfer. Transfer credits do not enter into the computation of a student’s quality point average at the College and may not exceed 50 percent of the total credits counted toward graduation. At a minimum, 64 credit hours of work are required to be completed at the College, as well as a minimum of one half of all hours for any major, minor, certification or concentration.

The College will grant credit to incoming freshmen who have achieved the appropriate academic standards through Advanced Placement, College Level Examination Program (CLEP), or International Baccalaureate (IB). College courses taken while in high school (typically through College in the High School programs) will be evaluated on an individual basis, depending on course equivalencies and expected learning outcomes. Students are encouraged to earn credit through the AP, CLEP, and IB programs rather than through College in the High School. See the Academic Policies section for further details.

A high school student who has completed college level courses prior to his/her high school graduation may apply as a freshman student. Students who apply and are accepted as freshmen will enter as freshmen and progress to sophomore, junior, and senior class status along with their peers.

INFORMATION TECHNOLOGY INITIATIVE AND TABLET COMPUTERS

The Grove City College Information Technology Initiative (ITI) began in the fall of 1994 when each entering freshman at Grove City College was issued a portable computer. This program continues in full operation today, serving as a building block to prepare the individual student for success in both his/her academic pursuits and professional career.

The ITI recognizes that computer literacy is a necessity in virtually all professions. As a result, the College is continually developing and upgrading campus-wide services that allow students to access both on-campus information sources via an intranet and an ever-growing array of off-campus services.

Through this program, each incoming full-time freshman or transfer student is issued a lightweight tablet personal computer that will provide direct access to computing and information technology, all as part of Grove City College's plan of integrating information technology throughout the curriculum. A student is able to utilize his/her computer in the residence halls, library, and classes, as well as at home during break periods and summer months. Upon completion of a four-year degree (as a full-time student enrolled at Grove City College), the College will assign ownership of the computer system to the student.

Students are not expected to be computer-literate upon their arrival on campus. All incoming students receive instruction on the operation of their computer and the associated software beginning almost immediately after the student is issued his/her computer. Additionally, during the academic year, our Help Desk operates over 95 hours per week to assist in the resolution of any hardware or software problems. The Help Desk may be contacted via phone, email, or by visiting the physical site of the Help Desk in the Technological Learning Center.

OPENING UNDERGRADUATE ENROLLMENT

<u>Fall 2017</u>	<u>Men</u>	<u>Women</u>	<u>Total</u>
Seniors	301	285	586
Juniors	252	278	530
Sophomores	296	265	561
Freshmen	342	308	650
Unclassified	<u>25</u>	<u>21</u>	<u>46</u>
Totals	1,216	1,136	2,373



Expenses and Financial Aid

EXPENSES — 2018-2019

Application for Admission	\$ 50.00
Matriculation Fee	100.00
Matriculation Deposit.....	150.00

(See Admission section for detailed explanations.)

Semester Charges:

Tuition:

Full-time Students, 12 to 17 semester hours.....	\$ 8,965.00
Full-time Students, each hour over 17 hours	450.00
Part-time Students, per semester hour credit	580.00
Intersession Courses, per semester hour credit.....	385.00
Summer Courses, per semester hour credit	385.00
Dual Enrollment Program, per semester hour credit	165.00
Room and Board, 21 meals per week.....	4,885.00
Board Only, 21 meals per week	1,895.00
Colonial Hall – Room Only	4,725.00

Fees for Special Services:

Degree Apostille.....	25.00
Internship Fee (one to six hours).....	300.00
Laboratory Materials Fee (per course – see page 49).....	150.00
Late Payment Fee (each assessment)	40.00
Music Group Class (Guitar, Organ, Piano and Voice).....	150.00
Music Private Lesson (per half-hour, per week)	425.00
Parking Permit Fee (annual rate – see page 36)	125.00
Print Making, Sculpture, Ceramics, Ind. Art Study & Art Seminar	150.00
Red Cross Lifeguard Training Fee (Exercise Science 223).....	38.00
Returned Check Fee	40.00
Returned Electronic Check Fee.....	10.00
Student Health Insurance (annual rate)	1,624.00
Student Teaching Fee	530.00
Study Abroad Fee (Abroad 300 - fall or spring semesters only)	300.00
Transcript - \$3.00 per transcript plus \$2.25 per delivery address	5.25

The College reserves the right to adjust its charges prior to the beginning of any semester, although every effort is made to maintain its stated charges throughout the academic year.

REFUNDS

Students planning to withdraw or transfer from Grove City College must immediately contact the Enrollment Coordinator on the ground floor of Crawford Hall by emailing enrollment@gcc.edu or calling (724) 458-2177 to officially withdraw.

Voluntary Withdrawal

A student who voluntarily withdraws from the College may be refunded a portion of the tuition charges in accordance with the refund schedule for the applicable term:

Fall or Spring Semester:

Withdrawal prior to matriculation (first day of classes).....	100% refund
Withdrawal within seven calendar days after matriculation.....	75% refund
Withdrawal within fourteen calendar days after matriculation.....	50% refund
Withdrawal within twenty-one calendar days after matriculation.....	25% refund
Withdrawal twenty-two or more calendar days after matriculation	No refund

January or May Intersession:

Withdrawal prior to the first day of class	100% refund
Withdrawal on the first day of class	75% refund
Withdrawal on the second day of class	50% refund
Withdrawal on the third day of class	25% refund
Withdrawal more than three days after class begins.....	No refund

Winter or Summer Online Session:

Withdrawal prior to the start of the course	100% refund
Withdrawal before the end of the drop date	75% refund
Withdrawal after the drop date	No refund

Students voluntarily withdrawing from the fall or spring semester may be refunded a prorated portion of the room and board charge. The board portion, which covers the cost of food, will be refunded on a prorated basis according to the official check out date from the residence hall. Additionally, students may also be eligible for a prorated refund of the room portion based on the official check out date from the residence hall if the College is able to fill the bed being vacated within seven days of the withdrawal. There will be no refund of the room charge when the College is unable to fill the vacated bed within seven days. No refund of either the room or board is made when the voluntary withdrawal occurs during the last two weeks of the semester.

Students voluntarily withdrawing from Intersession will be refunded a prorated portion of the room and board charge. Room and board is not available during the winter and summer online sessions.

Students voluntarily withdrawing from off campus travel courses, including intersession, summer and semester in France programs, will be eligible for tuition and room and board refunds as described herein, however, the cost of transportation or other program expenses incurred on behalf of the student prior to the withdrawal will be deducted from any refund and will be the responsibility of the student.

Medical/Military Withdrawal

A student who must withdraw from Grove City College upon a physician's written recommendation or who is a military reservist and is called to active military duty will be refunded a prorated portion of tuition based on the number of days in attendance. The room and board charges will also be refunded on a prorated basis according to the official check

out date from the residence hall. These prorated refunds will be granted for medical/military withdrawal regardless of the time of withdrawal during the semester. Written documentation supporting the physician's recommendation must be received by the Student Life & Learning Office within two weeks of a medical withdrawal.

Housing Deposits

Each spring, students who have indicated their intent to reside on campus the following fall semester will be charged a housing deposit. The housing deposit is not an increase in the cost of room and board; rather, the amount of the deposit is later reflected as a reduction to the amount due on the student's statement of charges for the upcoming fall semester. This deposit is refundable if the student notifies the College of his/her withdrawal or changes his/her housing status to non-resident by June 30th. The deposit is non-refundable if notification is made on July 1st or later.

Additional Refund Details

If a student is temporarily absent for two consecutive weeks or more due to illness but does not withdraw from the College, one-half of the board charge for the period of absence may be refunded. The student's physician in attendance must certify in writing that the illness was of such a nature as to render the student's return to college impossible for the duration of the illness. No refund is made for absence during the first two weeks or the last two weeks of a semester.

The matriculation deposit is refunded upon withdrawal or after graduation.

No refund of any kind is made when a student is suspended or dismissed from the College, including, but not limited to, application and matriculation fees.

The guidelines noted above for tuition will also be used to refund financial aid to the provider of the aid unless specified otherwise by the donor. In the event the student has received a Grove City College student loan during the current term, all current Grove City College charges will be paid and any remaining credit balance, up to the loan amount, will be used to repay the student loan prior to any refund to the student.

FINANCIAL AID PROGRAM

The generosity of alumni and friends of the College has made the Grove City College Financial Aid Program possible. Under the direction of the Board of Trustees, the College administration makes every effort to keep charges as low as possible, thereby, in effect, providing every enrolled student with significant financial assistance.

In addition, a number of scholarships, the Grove City College Student Loan and on-campus work opportunities are available to assist qualified full-time students. Scholarship assistance is based on need and academic achievement, and must be applied for each year. Although financial assistance is awarded for the full academic year, if changes occur in the need factor, the College may increase, reduce or withdraw assistance at the beginning of any semester.

Any student or prospective student seeking financial assistance is required to apply each year. Full details are available in the Financial Aid Brochure or on the College web site – www.gcc.edu. Every effort is made to provide financial assistance for applicants who meet the academic qualifications and need requirements; however, all applicants must be full-time students who are making academic progress. Grove City College does not discriminate on the basis of age, race, color, creed, sex, marital status, disability, or national or ethnic origin in the administration of its scholarship and loan programs.

Securing financial aid from any source outside the College is a student's responsibility. Upon a student's request, the College will certify a student's enrollment and provide other data with the clear understanding that it is fulfilling a service to its students. The provision

of such service, however, does not indicate that the College is a recipient of the grant or loan funds received by the student, that it is in any way administering any portion of the external program, or that it is responsible for decisions made by outside donors or lenders (private or public). The College performs these limited services for all students seeking private or public financial aid, except as stated in the following paragraphs:

Grove City College does not accept or certify any loans under the Federal Direct Student Loan Program (Student or Parent Program) or participate in the William Ford Direct Loan Program; the Perkins Loan Program; Pell Grants; Robert C. Byrd Honors Scholarships; Academic Competitiveness Grants; TEACH Grants; SMART Federal Grants; Supplemental Education Opportunity Grants; Federal Work Study; President's Service Challenge Scholarship through the Corporation for National and Community Service (also known as the AmeriCorps Scholarship); Paul Douglas Teacher Scholarships; National Science Scholars Program Scholarships; National Academy of Science, Space, and Technology Grants; Presidential Access Scholarships; ROTC Scholarships; educational benefits from the Department of Veterans Affairs; assistance through the Office of Health and Human Services (such as grants from the Office of Vocational Rehabilitation or Blindness and Visual Services); JTPA; or any other scholarships or loans which may be construed as providing direct or indirect federal aid to the College. The College will also not allow any student to register for classes if it is aware that a student has accepted or received such federal financial aid for that semester.

Grove City College has carefully reviewed the legislation pertaining to the new GI Bill (a package of educational benefits available to U.S. military veterans and their dependents). Unfortunately, the College is unable to receive funds, certify eligibility, or otherwise participate in this program because it is considered federal financial aid.

SCHOLARSHIPS

The income from a number of endowment funds is available for scholarship aid to students who qualify on the basis of scholarship, financial need, and character. The Scholarship Committee awards these scholarships on a year-to-year basis. Applications and supporting documents must be submitted to the Financial Aid Office on or before April 15 preceding the school year for which scholarship aid is requested (January 15 for students matriculating mid-year). A continuing Grove City College student must have a cumulative QPA of 2.00 to qualify for need based financial aid. Consult the Grove City College Financial Aid Brochure, available on-line at www.gcc.edu, for complete details.

How to Apply for Scholarship Aid

All students, prospective and continuing, who are applying for scholarship assistance, must submit a Grove City College Financial Aid Application to the Financial Aid Office each year by April 15. The application may be completed and submitted on-line or be downloaded from the Financial Aid page of the College web site.

Grove City College does not participate in any federal aid programs, and it does not utilize the Free Application for Federal Student Aid (FAFSA) in applying for College financial aid programs. The FAFSA is generally required in applying for financial aid from non-federal public sources, such as State Grants, in which the College does allow its students to participate. Students should check with the specific aid source to determine which forms are required for consideration by that source.

To expedite the financial aid process, students should apply as soon after October 1 as possible. In order for the College to process a Financial Aid Application, students must include all required documents with the application. Financial aid is awarded annually based on the aid application deadline and available funds. All applications are due in the Financial

Aid Office by April 15. Applications received from April 16 to July 1 will receive 50% of the scholarship that otherwise would be awarded. Applications received after July 1 will not receive a scholarship award. Transfer applicants should contact the Financial Aid Office regarding deadlines.

Financial aid decisions cannot be made until the student has been accepted for admission. Although applicants must be offered admission to Grove City College to receive need-based financial aid, applicants should not wait for an offer of admission before applying for financial aid. Beginning March 15, incoming freshmen will be mailed an award letter within three weeks of receipt of an application in the Financial Aid Office.

Students seeking financial aid must reapply for financial aid and loans each year.

LOAN FUNDS

Students who need help in meeting their educational expenses may borrow money using the Grove City College Student Loan program or any other private loan program of their choice. Grove City College student loan applications will be available on-line after May 1st each year. Please contact the Financial Aid Office to verify the College's participation in the program before applying for other private loan funds.

The Grove City College Student Loan

Individuals who are at least half-time students of Grove City College and who are US citizens or permanent US residents are eligible to borrow under the Grove City College Student Loan Program. Loans under this program are based on credit-worthiness. The annual amount available for freshmen and sophomores is limited to the cost of education less other financial aid, not to exceed \$12,000. The annual amount available for juniors and seniors is limited to the cost of education less other financial aid, not to exceed \$17,000 per year, for a lifetime maximum of \$58,000. There are no origination fees for loans under this program, and interest is variable quarterly based on LIBOR plus a margin. Repayment of the loan may be deferred until the student leaves school.

All students who receive a Grove City College Student Loan must attend a College-sponsored seminar on debt management after receiving their first loan, in order to receive any additional loans. A second seminar, on credit, is required during their sophomore year.

Applications for loans should be completed three weeks prior to needing the funds for payment.

ACADEMIC PROGRESS

Grove City College defines academic progress as earning a minimum of 24 credit hours during a single academic year (September through August). Students must make academic progress to remain eligible for financial aid from the College and for the GCC Student Loan. Additionally, students may be subject to the academic progress standard for scholarships, grants or loans received from sources outside of Grove City College, such as PHEAA State Grants and should refer to the guidelines for each program for complete details.

The College's Financial Aid Office reviews all academic records at the conclusion of each academic year to ensure students are making academic progress and to determine eligibility for the College's Student Loan program. A student who drops courses; withdraws entirely from a semester; or receives either "F – failing" or "I – incomplete" grades may fall below the minimum of 24 earned credit hours required for satisfactory academic progress. These students will be ineligible to receive financial aid from the College and through the Grove City College Student Loan Program until academic progress has been made.

A student who fails to make academic progress and is denied financial aid may submit a written appeal, with supporting documentation, to the College's Financial Aid Office within 14 days of being denied financial aid.

WORK OPPORTUNITIES

A number of positions are available on campus for full-time students who need to support themselves financially. Students who excel in some fields are often given an opportunity to serve as departmental, laboratory, or library assistants. Applications for work on campus may be completed by accessing the “Sign Up” tab of the myGCC portal and clicking on the “Student Employment Application” link. Priority is given to students with financial need demonstrated through the College's aid application. There are limited openings for part-time work in the local Grove City community.

SCHOLARSHIP AND FINANCIAL AID FUNDS

The following funds have been provided to support current scholarships and financial aid awards to Grove City College students. A number of these funds include restrictions that have been specified by the donor:

James and Arlene Adams Student Aid Fund
Frances E. Adams '41 Scholarship Endowment
Alden Challenge Scholarship
The Alumni Association Scholarship Fund
Ron '82 and Diane (Holt '82) Anderson Scholarship
The John Appleby Arnold '58 Four-Fold Scholarship Fund
Arnold Family Music Scholarship Fund
Edward P. and Rosalyn B. Arters Tomorrow's Leaders Scholarships
Robert B. and Joyce Webb '60 Asher Scholarship Endowment
Babcock Financial Aid Fund
The Babcock Scholarship Fund
Frank R. Bailey, Jr. Memorial Scholarship Fund
John Logan Bailey Memorial Scholarship Fund
Robert W. Baird, Jr. and Lily L. Baird Memorial Scholarship Fund
Howard O. and Pauline D. Barnes Scholarship Fund
The Jay L. Barnes '52 Memorial Scholarship Fund
Susan Beatty '50 Barnhart Memorial Scholarship Endowment
Dr. Bonnie B. Barr '59 Family Scholarship Endowment
James Willard '43 and Elizabeth Knapp '42 Batey Scholarship
Baucus & Co. Scholarship Endowment
The Bauer Family Scholarship Endowment
The Bauer Scholarship Fund
Beadle-Warren Scholarship
Homer F. and Margaret W. Bechtell, Sr. Scholarship
The R. Jack Behringer Scholarship Fund
Bell Memorial Fund
Paul G. Benedum, Jr. Leadership Scholarship
Dr. George W. Bennett Scholarship Fund
Alan G. and Karen Bergman Scholarship
Thomas F. '74 and Mary Ann Berkey Scholarship in Electrical Engineering
Beta Sigma Alumni Association Scholarship Endowment
Jean Ann Bialas, M.D. Scholarship Endowment
John A. Blair 1892 Scholarship Endowment
The Board Designated Financial Aid Fund
The Board Designated Scholarship Fund
Dr. Natalie (Orlowsky '56) Bodnaruk Scholarship Endowment

Mildred Bohlander Fund
Frances M. Borell and Leslie C. Borell Memorial Trust Scholarships
Edward '37 & Ruth '40 Bowden Scholarship Endowment
Ronald W. '64 and Joyce E. Brandon Academic Scholarship Endowment
Louis C. Brody Memorial Scholarship Fund
Dr. Douglas A. and Susan K. Browne Scholarship Endowment
The Rev. John A. Buckley '63 Scholarship Endowment
The W. Clifton Bulette III Memorial Scholarship Fund
Major A. P. Burchfield Scholarship
Dr. Florence L. Burger Scholarship Fund
Verne (Herbert '43) Cabooris Scholarship Endowment
The John N. Calderwood Scholarship Fund
The Callahan Special Education Certification Scholarship Endowment
The Timothy J. Callahan '82 Accounting Scholarship Endowment
Thomas William Callen Fund
The Campus Enrichment Scholarship
Philip Carpenter Scholarship Endowment
Eleanor M. Caruthers Fund
Dino C. Casali Scholarship Endowment
David O. '71 and Kathleen Pickens '70 Cashdollar Scholarship Endowment
Oliver F. Cashdollar Sr. Scholarship Endowment
Boyd E. '37 and Mary (Poellet '38) Cass Scholarship Endowment
Bryce N. Chaney and Erin E. Chaney, M.D. Scholarship Endowment
The Church of the Covenant Scholarship
Lou Church Memorial Scholarship Endowment
Joseph C. Cicero, Jr. Scholarship Endowment
Cincinnati Freshmen Scholarship
Class of '37 Scholarship
Class of 1963 Scholarship Endowment
Class of 1967 Scholarship Endowment
Class of 2011 Scholarship Endowment
Class of 2012 Scholarship Endowment
Class of 2013 Scholarship Endowment
Class of 2015 Scholarship Endowment
Class of 2017 Scholarship Endowment
James R. Clifford, M.D. Entrepreneurship Scholarship Prize
Charles S. Coen & Mary Coen Family Foundation Scholarship Endowment
Tom and Priscilla Connally Memorial Scholarship Fund
Oscar A. Cooper Memorial Scholarship Endowment
Jessie Henderson Coulter Scholarship
John R. '49 and Kathryn (VanEman '48) Couy Scholarship Endowment
The Clifford L. and Joanne H. Cox Award for Excellence in Music
H. J. Crawford Scholarship Trust
Critchlow Family Scholarship
Dr. Robert B. Cross '37 and Dr. Gertrude E. Cross Memorial Scholarship
Eugene J. Dabkowski '60 Scholarship Endowment
Davis Elkins Foundation Scholarship for STEM Students
Deacon Family Scholarship Endowment
Jane G. Dean Memorial Scholarship Endowment
Bernice F. Dell Scholarship Fund
Delta Iota Kappa Fraternity Alumni Association Scholarship

The Arthur and Tana de Ponceau Student Aid Fund
The Diane M. Dixon Scholarship Endowment in World Literature
The James G. Dixon III Scholarship Endowment in Theatre and Shakespeare
Donahue Family Foundation Scholarship Endowment
Duerr Family Scholarship Endowment
Neal F. Dukelow Memorial Scholarship Fund
Donald E. Eckert '66 Memorial Scholarship Endowment
Dr. and Mrs. John D. Ellis Memorial Scholarships
Dr. Cindy (Bowser '80) Elmore Scholarship Endowment
Brett Elsess Scholarship
Anna Belle Yoder Emery '54 Scholarship Fund
Benjamin Enloe Scholarship Endowment
Epsilon Pi Alumni Association/Dr. Ralph Carlson '62 Scholarship Endowment
Epsilon Pi Alumni Association/Dwight Guthrie Scholarship Fund
Epsilon Pi Alumni Association/Jack E. Schlossnagel '51 Scholarship Endowment
Robert '93 and April Eschweiler Scholarship Endowment
Joann Rebekah Weissert Etter '50 Memorial Scholarship Endowment
Kenneth J. and Florence Borland Evans Family Scholarship Endowment
J. Russell Fawley Scholarship
C. Fred Fetterolf '52 Scholarship Endowment
Fifty Year Financial Aid Fund
Richard J. '50 and June Filer Scholarships in Management
Barbara (Northeimer '68) Fish Memorial Scholarship
The Ross A. Foster Scholarship Fund
Richard E. Fox Economics Scholarship Endowment
The Full Circle Scholarship
Gamma Chi Alumnae Scholarship Endowment
General Scholarship Endowment
Carl and Mildred Giesmann Scholarship Endowment
The Toni Ann Giles Memorial Fund
The Frederick R. and Lois R. Gilmore Scholarship
The Dr. Hugh R. Gilmore, Jr. Scholarship Fund
Oran Harold Goehring '27 Memorial Scholarship
Joseph F. Goncz Scholarship in Engineering
Rose Goldstein Memorial Fund
Park Greenwell Scholarship Fund
Guadalupe Center of Immokalee Scholarship Fund at Grove City College
Hadley Scholarship Fund
Hall-Thomas Scholarships Fund
William E. Hall '44 Memorial Scholarship Fund
The Haller Scholarship Endowment
Mary Esther (Cruikshank '45) Halstead Scholarship Endowment
Isabelle Bashline Hammond Fund
Shawn P. '91 and Karen (Semler '92) Hanlon Scholarship Endowment
Emma J. Harbison Scholarship
Brett A. Hardt '79 Scholarship Endowment
The John Stanley '25 and Helen Calderwood '23 Harker Memorial Scholarship Fund
Joseph A. Hartman Jr. '50 and Elizabeth A. Hartman Family Scholarship Endowment
John J. Havrilla Memorial Scholarship Fund
C. N. and Ruth Hayes Scholarship Endowment
Don '59 and Linda Hayes Scholarship Fund

Rod Haynes '71 Memorial Scholarship Endowment
Harry Heasley Scholarship Fund
Marguerite Anne Heine '69 Memorial Scholarship
Ethel Hall Henderson '39 Memorial Scholarship
Forrest C. Henderson '24 Memorial Scholarship Endowment
Thomas and Marjorie (Dorer '64) Heney Accounting Scholarship Endowment
Hill, Barth & King LLC Scholarship Endowment
Phyllis M. Hill '48 Scholarship
Dr. William M. and Kathleen P. Hinton Scholarship Endowment in memory of Kathleen
Michael W. '84 and Susan (Spencer '85) Hoag Scholarship Endowment
Albert A. Hopeman Memorial Scholarship
Lynn G. Hopeman Scholarship
Hopeman Financial Aid Fund
Gerald D. '44 and Nancy (Sipe '45) Householder Scholarship Endowment
Creig Hoyt Award
John and Winifred Hoyt Scholarship Endowment
Adeline (Blair '35) Humphrey Scholarship Endowment
J. Douglas and Jean B. James Scholarship Endowment Fund
Laurie Anne Jarboe Scholarship
June Jenkins '61 Memorial Scholarship Endowment
Richard G. Jewell '67, J.D. and Dayl E. Jewell Scholarship Endowment
Stan M. '60 and Karen Johnson Office of International Education Scholarship
Endowment
Stan M. '60 and Karen Johnson Scholarship Endowment
William M. "Skip" Johnson '76 Scholarship Endowment
Scott '55 and Anne (Whitely '57) Johnston Scholarship Endowment
Donald B. and Grace E. Jones Scholarship Endowment
Kappa Alpha Phi Alumni Association Scholarship Endowment
Karpinski Engineering Merit Scholarship Endowment
Frederick A. Kaufman Financial Aid Fund
James R. and Carl W. Keefer Scholarship Fund
The H. Walter Kellen, PE '38 Memorial Scholarship Endowment
James A. and Martha G. Kennedy Chemistry Scholarship Endowment
David W. Ketler Memorial Financial Aid Fund
Ellen Bell Ketler Fund
Kathryn and David L. Kiesling Memorial Scholarship Endowment
David Kiselica '99 Scholarship Endowment
Knapp Family Scholarship Endowment
The Knecht Family Scholarship
F.W. Knecht III Memorial Entrepreneurship Scholarship Endowment
Janice Conn Koontz Scholarship
Kopnisky Family Scholarship Endowment
Koppers Financial Aid Fund
Andrew S. Korim Family Heritage Endowment
Andrew & Mary (Lucas) Korim Science & Technology Scholarship Endowment
Ronald Kenneth Kradel Memorial Scholarship Endowment
James Donald Kreidle '54 Scholarship Endowment
Frederick W. Kretzer '56 and Peter N. Kutulakis '56 Scholarship Endowment
Frederick S. Kring Leadership Award
Hilda Adam Kring Communication Arts Award
Elizabeth (Lengel '56) Kuehnle Memorial Scholarship

Dr. Jonathan B. Ladd Memorial Award
The Herbert Lamberson and Myrna Lamberson Scholarship Endowment
Jay '99 and Chris Langley STEM Scholarship Endowment
Heath and Eleanor Larry Scholarship Fund
Richard M. Larry '60 Scholarship Fund
Eugene A. Larson '64 Scholarship in Engineering
Frank and Edna Lawrence Memorial Scholarship Fund
Marian G. Lechner '37 Scholarship Endowment
Ralph G. Leighty, M.D. Memorial Scholarship of Grove City College
Amelia Katherine (Fritz) Lenze Scholarship Fund
Richard A. Leo Physics Scholarship Endowment
M. William Lightner, Jr. '56 Scholarship Endowment
Sarah Robertson Linn '26 Scholarship Endowment
The Lobaugh Scholarship Fund
Lockhart Scholarship Fund
Coach James E. Longnecker Scholarship Endowment
Marie C. Lush Fund
Charles S. MacKenzie Student Aid Fund
The Florence E. MacKenzie Memorial Scholarship Fund
LaVonne (Rudolph '56) MacKenzie Scholarship Endowment
Magee Family Fund
Alan M. Majewski '94 Scholarship
The Marcia Manning Christian Scholarship
Marketing Scholarship
James Edwin Marshall, 1898, Scholarship Fund
Josephine H. Marshall '10 Scholarship
The Thomas B. Martin Memorial Scholarship
Deborah R. Marziano '71 Scholarship Endowment
Milford "Miff" McBride '44 Scholarship Endowment
Lee C. and Zella W. McCandless '23 Fund
McClure Scholarship Endowment
The Helene McCue '51 Scholarship Fund
Jean Burns McCurdy 1901, William Donaghy McCurdy 1901 and Nancy McCurdy 1942
Memorial Scholarship
The McCurdy Memorial Scholarship Fund
The McDowell Scholarship Fund
Mrs. Ella K. McKelvey Scholarship
David E. McKillop Scholarship Endowment
William W. McKinney Scholarship Fund
McKonly and Asbury-Devon Driver Memorial Scholarship
David G. McMillen '60 Scholarship Endowment
McMullen Scholarship Fund
William Francis McVay Special Education Certification Scholarship Endowment
William and Joann Tresham Mehaffey Tomorrow's Leaders Scholarship Endowment
Walter '11, Peter '13, and Amy '15 Melnik Merit Scholarship Endowment in Memory of
Samuel R. and Mary G. Smith
Mephibosheth Scholarship Fund
Harry T. and Dorothy N. Mercer Scholarship Fund
The Merwin Student Aid Fund
J. Melvin Miller Scholarship Fund
Margaret (Romesburg '64) Miller Scholarship

Mary Jane Miller and Ruth Sample Miller Memorial Award
The Military Service Scholarship
The Ministerial Scholarship Fund
Peter H. and Frances S. Monsma Memorial Scholarship Fund
Joseph D. Monteleone Scholarship
The Robert R. '31 and Josephine M. Montgomery Scholarship Fund
The Mary R. Moore Scholarship
Sue Corbett Moore Scholarship for International Studies
Thelma Baltz Morrow (Class of 1925) Fund
Harry '66 and Beverly Morton Scholarship
Dr. Karl T. Naegele '79 Scholarship Endowment
Harriet (Hughes '41) Naser Scholarship Endowment
M. Jack Naser '42 Scholarship Endowment
Earl F. '50 and Helen Neely Scholarship Endowment
1970's Decade Scholarship Endowment
Robert Nivison Memorial Fund
The No Plain Jane Foundation Scholarship Endowment
Nu Lambda Phi Alumni Scholarship Endowment
The Nutt Family Scholarship
Steven D. Nye Memorial Scholarship Endowment
The Walter J. O'Connor Scholarship Fund
Odd Fellows and Rebekahs Association of Western Pennsylvania Scholarship Endowment
Edward F. Olechovsky Scholarship for Classical Study
The Edward O'Neil Scholarship
John David Ormerod '92 Memorial Merit Scholarship
The Walter E. Page '11 Scholarship
A. J. & Sigismunda Palumbo Scholarship
Pan Sophic Alumni Association Scholarship Endowment
The James '61 and Lynne '60 Passilla Scholarship
Carol Elizabeth Patterson Memorial Scholarship
The Carolyn (Marziale '73) Patterson Scholarship
Margaret C. Patterson Scholarship Fund
Margaret M. Patterson Scholarship Fund
Maurice R. Patterson Financial Aid Fund
Nancy (Lee '54) Paxton Scholarship Endowment
Nancy A. (Rea '73) and Alan L. Perlman Scholarship Endowment
Robert M. Perry Scholarship Endowment
Jennie E. Pettit Scholarship
Phi Tau Alpha Fraternity Alumni Association Memorial Scholarship Endowment
The Dr. and Mrs. Arthur William Phillips Scholarship
The Phillips Interdisciplinary Endowment Fund
Marjorie McCune and Fred E. Pickens Scholarship Endowment
The Earl K. Price Memorial Scholarship
Betty '38 and Bob Prince Scholarship Fund
The Private Financial Aid Fund
James Ramsey Memorial Scholarship Fund
The Reader's Digest Endowed Scholarship Fund

The Red Fred Psychology and Philosophy Award
The Lawrence W. Reed '75 Scholarship Endowment
Walter D. Reed '42 Scholarship Endowment
Rudolph Rex Reeder Political Science Scholarship
Paul E. and Dorothy F. Reese Scholarship Endowment
C. Dale Reis '67 Scholarship Fund
Frederick G. Reiter Memorial Fund
Elizabeth McNary '42 Reno Memorial Music Scholarship Endowment
David T. Richards '58 Entrepreneurship Scholarship Endowment
Glenda Gilmore Richards '30 and Alan Windsor Richards Financial Aid Fund
Larry W. Riley '83 Accounting Scholarship
William Rindfoos Scholarship Fund
The John V. Ritts Fund
Richard S. Robinson, Sr. Science and Technology Scholars Endowment
Frances B. Rohm Music Scholarship
John '85 and Kathleen (Shipley '85) Romain Merit Scholarship
James and Elizabeth Rutledge Scholarship Fund
S & T Bank Scholarship
The Samaritan Scholarship based on John 4
Carl M. and Marian T. Sautter Scholarship Fund
The Sarah Schenk Honors Scholarship in English
Marion P. Schleiden Scholarship Fund
Madge Lowayne Schlemmer Scholarship
Kent A. Schooler '79 Scholarship
Schulenburg Family Scholarship
Lois Schulte-Place Fund
Schwab Family Scholarship Endowment
C. J. Seltzer Family Heritage Scholarship Fund
Dr. Hans F. Sennholz Scholarship
Hans F. Sennholz Freshmen Scholars Endowment
Agnes L. Seyfert Scholarship Endowment
Jane Toy Shaner Memorial Scholarship
Raymond Shannon Endowed Scholarship
William Shannon Memorial Fund
Dr. John T. Shaw Memorial Scholarship Endowment
Permelia Baldwin Shoemaker Award
The Shoemaker-Gibson Scholarship Fund
The Thomas L. Singley, M.D. '53 and June Chappell Singley '53 Scholarship Endowment
Robert H. Sisler Memorial Award
The Dr. Alexander Slavcoff '27 and Dorothy Strain Slavcoff '29 Memorial Scholarship Fund
D. N. Slep Scholarship
A. Bruce Smith '31 Memorial Scholarship Fund
The Anning Hiram Smith, Sr. and Doris Ann Smith Scholarship Fund
Dr. Bruce E. '58 and Megan Walters '58 Smith Scholarship Endowment
Smith-Trevitt Scholarship Endowment
Dale O. Smock Memorial Fund
Gary R. Smolnik Jr. '98 Scholarship Endowment
Lt. Barrett A. Snyder '08 Memorial Scholarship Endowment
Dr. George W. Southworth 1914 Scholarship Endowment
Special Education Certification Scholarship Endowment

Robert L. Squibb '54 and Janet Loach Squibb '59 Memorial Scholarship Endowment
The Stahl Family Scholarship Endowment
The Josephine Pinkerton Stahl Scholarship Fund
The Jim Stark '51 and Fran Stark Scholarship
David G. '77 and Rebekah (Maclay '78) Steele Scholarship
Scholarship Endowment in Loving Memory of Beverly Arnold Stephansen '83
Stevenson Scholarship Fund
William C. and Gay O. Stewart Scholarship
The Adah Montgomery Sticht Memorial Scholarship
The Dorothy Turnbach Stickney '31 Scholarship Fund
Ronald E. Stoops Scholarship Fund
W. Bradley Strauch, M.D. '99 and Stephanie (Sturgeon '99) Strauch Scholarship
Endowment
The Helen Beatty Strohm '39 Scholarship Fund
The Student Achievement Scholarship Fund
Student Financial Aid Fund
Student Freedom Scholarship Fund
The Glen and Mary Sutherland Scholarship
The Sutton Scholarship Fund
Swezey/Janicki Research Scholarship Endowment
Synod I Minority & Underprivileged Scholarship
J. Michael and Elizabeth (Davis '55) Taipale Mathematics Scholarship Endowment
Team GCC Scholarship Endowment
Theta Alpha Pi Sorority Alumni Association Scholarship
Clinton Arthur Thomas and Kermit Bennett Thomas Scholarship
Thomas-Riley Scholarship Endowment
The George William Thompson & Kathryn Rebecca Ralston Thompson Scholarship Fund
Louise T. Thompson and Brose E. Thompson '32 Scholarship Endowment
The Thomas Ewing Thompson, Jr., MD '29 and Ruth (Daubenspeck '30) Thompson
Scholarship Endowment
The M. C. Throckmorton Financial Aid Fund
Throckmorton Foundation Scholarship
Willard J. Tillotson Jr. Scholarship Endowment
Timson-Eaton-MacKenzie Scholarship Endowment
Tri-Sigma/Tri-Zeta Scholarship Endowment
Trustee Academic Scholarships
Anne Richards Turner '34 Scholarship
The Dr. Mary Irene Uber '41 Memorial Scholarship
The Ujano Family Scholarship Endowment
Beatrice and Harry Vernoy Scholarship Endowment
Ludwig Von Mises Scholars at Grove City College
Janet A. Wagner '63 Scholarship Endowment
Harvey '74 and Linda (Bauer '75) Wagner Scholarship Endowment
Richard W. Walker Memorial Scholarship
J. B. Wallace Scholarship
Mary Ellen Wandel Scholarship Fund
Joseph M. Wandrisco '39 Scholarship Endowment
William Ward Wasson Scholarship Fund
Margaret Ruth (Welsh '13) Weeks Scholarship Endowment

John C. and Elizabeth C. Weidman Scholarship Fund
Dr. Alan H. Weigand '55 and Dr. Warren M. Sacripant Memorial Scholarship
Endowment
Nancy Weller '58 Scholarship Endowment
The John R. and Joan F. Werren Scholarship
Harold D. Whieldon Student Scholarship Fund
Karen Gleeson '68 Wickerham Memorial Scholarship Endowment
Jean Alice Wilson Scholarship Fund
Donald L. Wolfe '61 Scholarship Endowment
Richard G. '59 and Sandra (Dick '60) Wolfe Scholarship
Women's Club of Grove City College (Pittsburgh) Scholarship Fund
Maurice E. Wright 1898 Scholarship
Edward G. Young '52 Memorial Scholarship Endowment
Young Life Scholarship Endowment.
Eugene Zeller Scholarship Fund
Andrew D. Zima '65 Scholarship Endowment
Margaret C. Zimmerman Student Aid Fund
Charlotte Zuschlag '73 Merit Scholarship



Student Life

GENERAL RULES AND REGULATIONS

Students in a free society have the right to choose the college that best suits their needs, interests, and personal lifestyles. Those same students, having chosen their college, have the responsibility to observe the policies and standards of the college they select. As one might anticipate, members of the Grove City College campus community are expected to adhere to high Christian moral standards. We believe these historic Judeo-Christian standards of conduct are essential to the maintenance of a campus environment in which the search for meaning in life and a rational pursuit of knowledge can best be accomplished. A student's enrollment at Grove City College thus involves an agreement with the College that he/she will obey the academic and co-curricular standards of the College.

For a detailed description of the College's community standards and disciplinary policies, please refer to the current student handbook, *The Crimson*. Violations of College regulations and policies will be dealt with administratively by the Office of Student Life and Learning. Violations of civil law will be reviewed by the College and may also result in disciplinary action. The College reserves the right to exclude at any time students whose conduct or cooperation it regards as unsatisfactory without assigning any further reason. Neither the College nor its officers shall be under any liability whatsoever for such exclusion.

It is also expected that students will observe standards of appearance, which will encourage self-respect and enhance an individual's self-image. Some departments may also set specific standards of appearance as part of the student's professional preparation.

Though the College seeks the comfort and well-being of students on campus, it cannot assume responsibility for students when they leave campus.

RESIDENCE HALLS

The College's residence halls and student apartments were built not only to ensure convenient and adequate housing for students, but also to foster the social unity of the College, and to enhance the total learning environment and experience. Therefore, all full-time students, except commuter students who reside with their families, are required to room and board on campus. Commuter students at Grove City College are full-time traditional-aged students who live at their parents' or legal guardian's full-time legal place of residence, normally within a radius of forty miles of Grove City. With advanced approval, special permission may also be granted for a student to live with a primary non-peer relative other than his or her parents or a legal guardian.

Some students who meet specific requirements may be permitted or required to live off-campus. Those returning to college from the working world may qualify for approved off-campus status if there is a significant age differential between them and those who make up their class. Normally, students who will be twenty-three years of age prior to the first day of fall classes will also be considered in this category. Certain students, for medically documented reasons, may also be considered for off-campus status. Students older than 25 or with more than four years of post-secondary college experience are required to live off campus. Married students must provide confirmation of their marital status in order to live off campus, as the College does not provide married housing. Students in these categories may choose their own housing in the community, but the College reserves the right to require a student to move to another location, or to move on campus, if the College

determines there to be a sufficient health, safety, academic or moral concern. All off-campus housing for students must be registered with and authorized by the College. The College does not provide housing for part-time, post-baccalaureate, or special status students.

The College, while endeavoring to provide attractive housing for resident students, retains all rights of ownership, and therefore considers that all who reside in its facilities agree to abide by all College regulations applying to campus housing. Students are responsible for the proper use of their residence hall rooms and for any violations of College standards taking place in them. The College reserves the right to inspect any room at any time. However, every effort will be made to respect the privacy of our students. The College also reserves the right to require a resident to move whenever the best interests of the College appear to demand such action.

The College cannot be responsible for loss of personal property of residence hall students due to theft, fire, wind, rain, flooding or disruptions to electrical service or naturally occurring catastrophes from rain and/or flooding. It is strongly recommended that insurance protection be carried by each student against loss and/or damage to personal property. The foregoing notwithstanding, however, should loss occur due to negligence of the College, the College will be responsible for the direct damage, but not indirect or consequential damage, as a result of the loss. The College will not be responsible, however, if the proximate negligence or willful conduct causing the loss is that of another student and/or another individual not acting as an employee of and/or without specific authority of the College.

CAMPUS SAFETY

Grove City College offers students a safe and secure campus environment. The College enjoys a close, cooperative relationship with both state and local police, and criminal conduct by a student or employee is grounds for immediate suspension and/or dismissal. The Campus Safety Department is responsible for maintaining the security of the College community and facilities. The Director of Campus Safety reports to the Vice President for Student Life and Learning and works closely with Student Life and Learning personnel and other departments. The campus is monitored and evaluated 24 hours a day by Safety personnel on foot, in vehicles and/or on bicycles. The department answers the campus emergency extension at (724) 458-3000 24 hours a day and they actively monitor fire alarm, sprinkler and intrusion alarm systems. Electronic card access systems secure all residence halls and most other campus buildings. Emergency phones and CCTV cameras are located throughout campus and in most parking lots. Campus Safety personnel work to maintain a safe and secure campus environment that is conducive to academic, social and spiritual growth.

EMERGENCY OPERATION PLAN

The Emergency Operation Plan (EOP) provides a framework for incident preparedness and emergency response to situations such as fires, bomb threats, and campus evacuations. The plan describes methods of informing the campus of emergency situations by using a campus siren, voice/text messaging system, email and an EOP web page accessible via a link on the College's website – www.gcc.edu. This EOP web page will provide emergency updates, fire alarm assembly points, off-campus evacuation points and other related information. Resident students will also attend an informative emergency response session as part of the residence hall meetings at the start of each academic year.

AUTOMOBILES AND BICYCLES

Students are not permitted to have automobiles on campus during their freshman year. Exceptions apply to commuting students and may be made for others in special

circumstances. All students who have automobiles at the College must obtain a permit from the Campus Safety Department for the privilege of keeping cars at the College. Those who have automobiles are expected to refrain from using them in a manner that would hinder the student's academic progress and/or contravene College policy. Finally, the College reserves the right to forbid the possession and use of automobiles in any case where such action is considered advisable.

Racks for bicycle storage are provided near most living areas. Bicycles may be kept in residence hall and apartment rooms, provided they do not impede safe entrance to or exit from the room. Residents who store bicycles in their rooms are expected to respect the space and needs of their roommate(s). No summer storage for bicycles is available on campus. (For further detail, see *The Crimson* student handbook.)

CAMPUS MINISTRIES

The Office of the Dean of the Chapel offers spiritual guidance and direction for the Grove City College student body through weekly chapel, vespers and alternative chapel programs, essential times of worship, fellowship and growth. Under the direction of the Dean of the Chapel, the Campus Ministries team also seeks to aid students in their spiritual development. Over twenty student ministry groups are coordinated through the Campus Ministries Office and the staff can assist students in finding the ministry group that best matches their interests and needs. Staff members may also aid students in finding a local church that matches their faith tradition or church background. The office coordinates the annual campus retreat, several all-campus programs and a discipleship program in which students are matched with mature Christian mentors from the College and/or community. The Campus Ministries Office also has several resources that students may borrow as they lead Bible studies and/or seek personal spiritual growth.

College-sponsored domestic and international Inner-City Outreach (ICO) short-term mission trips are coordinated through the Campus Ministries Office which provides student leaders with the training, resources, and support necessary to effectively lead such a trip. Any student interested in leading an ICO trip should speak with the Director of Campus Ministries to learn more about this process.

Staff members are available to meet with students to talk about issues affecting their spiritual and personal life and to pray. Please visit the Campus Ministries web-site to learn more about the programs and services provided through the Campus Ministries Office.

HEALTH SERVICES

The College maintains a modern Health & Wellness Center staffed by a physician or physician assistant during regularly scheduled afternoon hours and a team of registered nurses throughout the day. This health service, designed to treat minor ailments, is available to all full-time students without cost other than those charged for special services such as allergy injections.

The College requires a complete medical history, physical exam, and record of immunizations for each student. Pennsylvania law stipulates that the College must also have written proof of the meningitis vaccine or a signed waiver indicating decline.

All full-time students attending Grove City College are required to carry health insurance coverage. For those students not covered under an alternative insurance plan (via a parent, guardian, etc.), the College offers a Health Insurance Plan for full-time students. The cost for annual coverage can be found in the Expenses section of the *Bulletin*.

Counseling services are available through the College's Counseling Center, also located in the Zerbe Health and Wellness Center.

STUDENT DISABILITY SERVICES

A disability is defined by the Americans with Disabilities Act of 1990 (ADA) as a substantial limitation of a major life function. Once a student is accepted and has confirmed his/her intention to attend Grove City College, he/she must initiate a request for services by contacting the Disabilities Service Coordinator at DisabilityServices@gcc.edu or (724) 264-4673. A student requesting accommodations for a disability is required to submit documentation of the disability to verify eligibility under the ADA. Reasonable and appropriate accommodations are determined on a case-by-case basis for qualified students who have demonstrated a need for these services.

ORIENTATION AND ACADEMIC ADVISING

An orientation program is scheduled prior to the start of each semester that is designed to aid freshmen and transfer students with an easy transition into the College community.

The College also maintains an academic advising program in which each new student is assigned to a faculty member who acts as advisor. The new student meets his/her advisor early in the orientation period to discuss matters regarding programs and courses. During the year, the advisor is available at scheduled office hours for consultation. At the mid-semester report period, the advisee's grades are sent to his/her advisor, who may then request a meeting with the student. This procedure is followed each semester.

CAREER SERVICES

The mission of the Career Services Office (CSO) is to assist students in their realization and pursuit of God's calling for their lives. The CSO provides a wide scope of offerings and services to our students to support this overriding mission. Students embark on a four-year career plan beginning freshman year with self-assessment where they are encouraged to identify and reflect upon their personality, skills, interests, passions and values through the use of the resource, MyPlan. Following self-assessment, students then move into the phase of career exploration, followed by career decision making (solidified through experiential opportunities, such as internships), and finally a strategic job search in the senior year. Through individual counseling, events/programs, and career resources, the office assists students in the development of professional skills they need to succeed in the future, such as networking, interviewing, resume writing, job and internship searching, among others. In addition, the CSO works with numerous employers to post job and internship opportunities for our students through our Handshake platform, recruit students at our annual fall Career Fair, and schedule on-campus recruiting visits to interview students for these career opportunities. On-campus recruiting (interviewing) privileges are only available to current students up through the time they complete their degree at the College. The centralized Career Services Office works in conjunction with Education Career Services which offers specialized career services for education majors seeking PreK-12 education positions.

CULTURAL LIFE

Grove City College hosts many cultural activities on campus, which include renowned experts in the fields of music, literature, journalism, drama, science, education, national, and international affairs. It is our hope that these events will serve as a memorable part of our students' educational experience.

The College's Cultural Series features artists of national and international reputation in music, drama, and dance. Contemporary music groups are also regularly invited to the campus. Several student dramatic productions; concerts by the Chapel Choir, the Touring Choir, the College Community Symphony Orchestra, the College Symphonic Band, and the

Jazz Ensemble; and recitals by Orchesis, a student dance ensemble, also take place on a yearly basis. The College also hosts several student and professional art exhibits on campus each year.

The J. Howard Pew Memorial Lecture; the Albert A. Hopeman, Jr. Memorial Lecture in Science, Engineering, and Mathematics; the C. S. MacKenzie Integration of Faith and Learning Memorial Lecture; the J. Paul Sticht Lecture in Business and Ethics; and the Scholar Lecture Series also bring to campus outstanding speakers in many different fields.

INTERCOLLEGIATE ATHLETICS

Director of Athletics: Mr. Todd Gibson

All full-time students enrolled at Grove City College who meet the requirements of the National Collegiate Athletic Association (NCAA) are eligible to represent the College on its varsity athletic teams. The College is a member of the Presidents' Athletic Conference (PAC), the East Coast Athletic Conference (ECAC) and the National Collegiate Athletic Association (NCAA). The College adheres to the rules and bylaws of these organizations. College intercollegiate teams compete in the NCAA Division III. Varsity sports include: baseball; basketball; cross-country; football; golf; lacrosse; soccer; softball; swimming and diving; tennis; indoor and outdoor track and field; volleyball; and water polo. Students who incur absences while representing a recognized College athletic team are excused, without prejudice to the student, through the Provost's Office.

PUBLICATIONS

The College owns, funds, and publishes several publications that offer students the opportunity to develop their journalistic skills, including *The Collegian*, the weekly campus newspaper, and *The Bridge*, the annual yearbook. In addition, *The Echo*, *The Quad*, *The Grove City College Journal of Law and Public Policy*, and other College publications provide students with opportunities for creative writing or practical experience.

STUDENT GOVERNMENT

The Student Government Association is composed of approximately thirty members selected by the student body at a general election each spring. The Association represents students and confers with the governing bodies of the College on matters pertaining to campus life and College policies. The Student Government Association is involved in the general supervision of student activities and is responsible for assisting in all projects for the betterment of the College.

STUDENT ORGANIZATIONS

More than two hundred student organizations and activities are available on campus, serving a wide variety of student interests.

- There are more than twenty ministry groups that afford opportunities for Christian study, fellowship, and service.
- The College owns a professional-level radio station, WSAJ-FM, operating on 91.1 MHz. The station carries classical music during the day, student programming in the evenings and weekends, and jazz overnights. This medium provides opportunities for students to develop and broadcast original programming, participate in the engineering and presentation of collegiate sports, and produce news and community-affairs feature programming.
- A variety of musical experiences are provided for both instrumentalists and vocalists through the marching and concert bands, the symphony orchestra, the

Chapel Choir, and the Touring Choir, which takes an extensive tour each year during Spring Break.

- There are eight local sororities and ten local fraternities on campus. Nine independent social housing groups also serve the interests of male students not affiliated with a fraternity.
- An extensive program of intramural, club sport, and intercollegiate athletics provides students with a full range of athletic opportunity. Other recreational organizations offer camping, chess, skiing and a host of other recreational opportunities.

In addition to twenty-six honor societies, there are twenty-seven departmental and professional clubs that serve particular academic and career interests. Among the latter are:

Accounting Society. An organization focused on exposing accounting students to the professional world and current issues related to accounting and business.

American Chemical Society Affiliate. An organization of chemistry students affiliated with the American Chemical Society.

American Marketing Association. A collegiate chapter of students interested in the field of marketing.

American Society of Mechanical Engineers. A club open to all mechanical engineering students.

Business Initiative for Leadership Development. A unique business honorary society that promotes leadership development and acquaints its members with real-world business applications.

Exercise Science Club. Providing the Grove City College campus community access to fitness-based activities in the region while preparing competent entry-level Exercise Science professionals within the Exercise Science major.

The Institute of Electrical and Electronics Engineers. A student branch of the I.E.E.E. open to students carrying at least thirty percent of a normal full-time load in electrical engineering and allied courses.

The Law Society. An organization comprised of students interested in the field of law.

National Society of Professional Engineers. A national chapter open to all engineering students.

The Philosophy Club. Providing students with opportunities for critical thinking and fellowship.

The Pre-Health Society. Seeking to assist students as they prepare for admission to professional programs in the health field.

Society of Automotive Engineers. A national chapter open to all engineering students.

Society for International Business Affairs. Providing students with a forum for the discussion and study of various aspects of global business and culture.

Society of Women Engineers. A national organization open to women in engineering and other related sciences.

HONOR SOCIETIES

Alpha Kappa Delta. The Alpha Rho Pennsylvania Chapter of The International Sociology Honor Society.

Alpha Mu Gamma. The Epsilon Pi chapter of a national honor society that recognizes excellence in the study of foreign languages.

Beta Beta Beta. A national honorary fraternity for biology and molecular biology majors.

Crown and Sceptre. A sophomore women's honor society that recognizes scholarship, leadership and service.

Delta Alpha Pi. An international honor society that recognizes high-achieving students with disabilities.

Delta Mu Delta. The Beta chapter of a national honorary business administration society.

Kappa Delta Pi. An international honor society in education.

Kappa Mu Epsilon. The Pennsylvania Eta Chapter of the national honorary mathematics society.

Kemikos. A local honorary chemistry society.

Lambda Epsilon Delta. The Gamma chapter of the national honorary for elementary education majors.

Lambda Iota Tau. The Beta Iota chapter of an honor society that recognizes excellence in the study of literature.

Lambda Pi Eta. The undergraduate honor society for communication students.

Mortar Board. The Alpha Theta Mu Chapter of the national honor society that recognizes senior students who have excelled in scholarship, leadership and service.

Omicron Delta Epsilon. The International Economics Honor Society.

Omicron Delta Kappa. The Beta Mu Circle of the national honor society that recognizes junior and senior students for scholarship, leadership, and participation in activities.

Phi Alpha Theta. An international history honorary.

Phi Sigma Tau. A national honorary society for philosophy.

Pi Gamma Mu. The Pennsylvania Alpha chapter of the national honorary social science society.

Pi Sigma Alpha. The national honorary society for students of political science.

Psi Chi. A national psychology honor society.

The Round Table. A sophomore men's honorary which recognizes scholarship, leadership and service to the College.

Scroll and Key. Scroll and Key is the highest scholastic honorary award given by the College to senior students.

Sigma Pi Sigma. A national physics honorary.

Sigma Xi. A scientific honorary society.

Tau Alpha Pi. A local honorary dramatic society.

Theta Alpha Kappa. A national honorary society for religious studies and theology.

PRIZE AWARDS

Frances J. Alford Sportsmanship Award, in memory of Frances J. Alford by the Sigma Theta Chi Sorority, the Women's Athletic Association, and the Class of 1977.

The Crombie Allen Peace Prize, a gift of Crombie Allen, Class of 1895, provides awards for members of the Pi Gamma Mu who have served the organization well.

The Bechtell Science Award recognizes a senior student from the biological and physical sciences who is outstanding for his or her creativity and skills in independent research, communication skills in instruction, and participation in curricular and extra-curricular activities within the respective discipline.

The Freshman Biology Achievement Award recognizes a student who has completed the freshman year and has demonstrated outstanding achievement in the field of biology.

The Senior Biology Award recognizes a senior biology major who shows outstanding ability in the field of biology.

The Douglas Bockes Memorial Award recognizes a deserving senior English major who will attend graduate school in the year following graduation.

The Philip N. Carpenter Senior Mathematics Award is given to the outstanding mathematics major in the graduating class.

The Elinor M. Caruthers Prize, given by Dr. Caruthers, Professor of French, is an award for excellence in French.

The Pittsburgh Chapter of Certified Public Accountants Award is given for excellence in accounting.

The Roger Clark Dawes Professional Engineering Award recognizes the most outstanding engineering graduate.

The Freshman Math Award is presented by Kappa Mu Epsilon to the students who, at the conclusion of the freshman year, achieve the highest scores on a competitive examination.

The J.P. Hassler Prize, an alumnus gift in honor of J.P. Hassler, College Bursar for more than forty years, is given for the best essay on the topic of Freedom.

The Creig S. Hoyt Award, honoring Creig S. Hoyt, for many years Chair of the Chemistry Department and Dean of the College, is given to a promising freshman chemistry student.

The Institute of Management Accountants Award is given to an outstanding accounting student who has demonstrated superior achievement over his/her college career.

The International Scholarship Award is given to the most outstanding nominee from Grove City College for a Rhodes, Fulbright or Marshall Scholarship.

The Kappa Delta Pi Award is presented to the outstanding senior who is a member of Kappa Delta Pi, the secondary education honorary.

The Kemikos Prize is an award for excellence in chemistry.

The Franklin C. Ketter Mathematics Prize, established from the estate of Dr. Franklin C. Ketter, Jr. is awarded to the graduating senior who has completed at least twenty-eight credit hours in mathematics and has earned the highest GPA in these courses.

The Lambda Epsilon Delta Award is presented to the outstanding senior who is a member of Lambda Epsilon Delta, the elementary education honorary.

The Syd McCormick Memorial Award, presented by friends and sisters of Gamma Chi sorority, recognizes the outstanding senior educator who has shown dedication, excellence, and enthusiasm in the student teaching experience.

The Morledge, Hodge, Michaelian Christian Servant Award was established through generous gifts received from friends of Dr. Richard A. Morledge '54, Dean of the Chapel between 1984 and 1999, in recognition and appreciation of his work in Christian ministry. The student(s) selected must show obvious evidence of being a servant of Jesus Christ.

The Music Educators National Conference Award, Grove City Collegiate Chapter, for excellence in academics in the music or music education area.

Edward W. and Sara K. Naegele Scholarship Award, honoring two former chemistry faculty members, is given to an outstanding science student prior to the senior year.

The Pan Hellenic Sorority Senior Woman Scholastic Award is presented to the senior sorority member with the highest academic standing.

Phi Alpha Theta History Award, given to a senior for outstanding scholarship and research in history.

The Grove City College and Pine Instrument Business Plan Competition Awards are presented to 1st through 3rd place individuals or teams with the best original business plan for a start-up organization that provides value and service to its shareholders, members and community.

The Senior Man of the Year and Senior Woman of the Year Awards are presented jointly by Mortar Board and Omicron Delta Kappa to the senior man and senior woman who have displayed outstanding scholarship, leadership, and service. It is one of the highest honors that the College can bestow.

The Robert H. Sisler Award is presented by Alpha Mu Gamma, the national foreign language honorary, to an outstanding modern language senior in memory of Dr. Sisler, former professor and GCC graduate.

The Swezey/Janicki Scientific Research Award is given annually to a student majoring in Biology, Chemistry and/or Physics who is determined by the natural science departments to have conducted the most superior research project.

The James D. Thorne Education Award recognizes two juniors who exhibit achievement in academics and in Christian service and will be student teaching during the upcoming year. The award is sponsored by the Fellowship of Christian Educators and Dr. Thorne. Additional gifts are encouraged.

CONFIDENTIAL INFORMATION POLICY

Grove City College maintains a number of records containing information about students and employees. The College respects and recognizes the need for privacy for its students and employees for much of this information, while at the same time respects and recognizes the need and desire for information by the parents of its students, and the need for College employees to have reasonable access to confidential information in order to do their jobs in an efficient and effective manner. In order to address these concerns, the College has established a Confidential Information Policy.

In summary, the policy provides that:

- Data related to students and employees will be made available to any College employee who has a need for that information in order to accomplish his/her job responsibilities.
- At the discretion of the College, all data regarding a specific student will be made available, upon request, to that student and to the student's parents or guardians upon verification that the person is who he/she claims to be.
- College employees have the right to provide selected student or employee information to external parties under certain conditions.
- A student's medical and counseling records shall only be released at the written request of the student, except as provided by our health provider's professional ethics and state and federal laws.
- If, in the professional judgment of the Counseling Center staff, a student is believed to be a danger to self or others, the Counseling Center staff reserves the right to contact appropriate college employees (e.g., Vice President for Student Life and Learning, Assistant Dean of Students, Director of Residence Life, Associate Director of Residence Life, Residence Directors, Director of Health and Wellness) and parents to ensure students' safety while in the process of making appropriate treatment interventions.
- Students with a valid reason may request that information be withheld from disclosure to individuals other than College employees. Such request must be in writing, include the rationale for the request and be provided to the College office that maintains the identified information. If the request is considered appropriate, College employees will make every reasonable effort to comply with the student's request.
- The College will provide any and all information required by law.

INTELLECTUAL PROPERTY POLICY FOR STUDENTS

Grove City College functions to serve its students and society both by generating and disseminating knowledge. The College has built and equipped facilities for those purposes, which are designed to service the needs of students, faculty and staff. Often in the use of

those facilities, intellectual property is created. Intellectual property includes such things as patentable inventions, copyrightable subject matter, trade secrets and valuable know-how and processes (including, but not limited to, computer software), which has potential commercial, resale or other value.

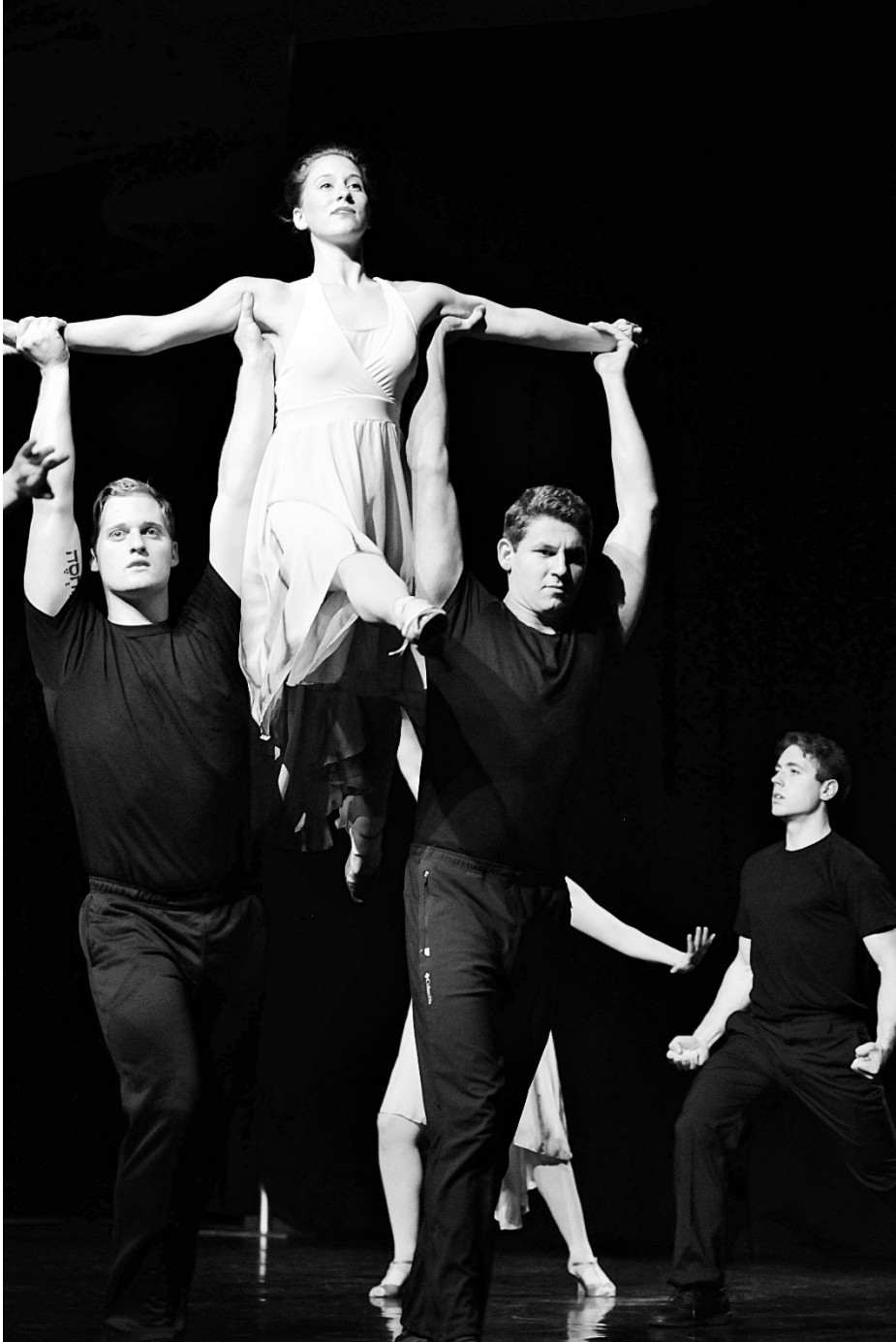
Those students who matriculate at and attend the College and who use College facilities or equipment in the development or marketing, in whole or in part, of intellectual property are expected to share the rights to and proceeds of such property with the College, as further described below. The College intends this intellectual property policy to apply to every student and to any and all intellectual property created, enhanced or promoted using College facilities or equipment, whether as part of ordinary coursework or otherwise in connection with an activity funded or sponsored by the College in whole or in part. The College maintains this policy in fairness to all who have contributed to its welfare in the past and as a way to preserve and improve its facilities for those who will come in the future.

Therefore, if a student of the College uses College facilities or equipment to create, enhance or promote, in whole or in part, any intellectual property, the following rules shall apply:

1. Subject to paragraph 6 below, the student shall and hereby does assign all his/her rights in the intellectual property to the College and shall execute all documents reasonably requested by the College to affect such assignment. However, if the intellectual property is patentable and the College has not begun to apply for a patent within six months after the disclosure of the patentable invention to the College and the execution of the applicable assignment documents, the College will permit the author(s)/creator(s) to seek such protection.
2. If a person or entity other than the College promotes and/or markets the intellectual property in any form, any direct or indirect compensation therefrom, e.g., as a lump sum payment or continuing royalty, shall, subject to paragraph 4 below, be divided as follows: 25% to the College 75% to the author(s)/creator(s).
3. If the College promotes and/or markets the intellectual property or manages the promotion and/or marketing of the intellectual property, any direct or indirect compensation wherefrom shall be divided as follows: 60% to the College 40% to the author(s)/creator(s).
4. Before any compensation is paid to the author(s)/creator(s), the College (or other applicable party) shall be reimbursed for all expenses incurred in developing or protecting the applicable intellectual property, including (without limitation) attorney fees and costs for filing and prosecuting a patent application.
5. Notwithstanding the foregoing obligation to compensate the College, if the author(s)/creator(s) of the intellectual property (a) legally dedicates the intellectual property to the public before any commercial exploitation occurs, (b) notifies the College promptly and in writing of the dedication, and (c) provides appropriate documentation of the dedication, he/she shall have no compensation obligation to the College.
6. If the intellectual property was created, enhanced, or promoted outside the student's coursework or otherwise not in connection with an activity funded or sponsored by the College in whole or in part, such student shall grant the College a perpetual, nonexclusive, nontransferable, royalty-free license and right to use the intellectual property for its own purposes.

The foregoing policy shall be disseminated as part of the literature of the College and shall be deemed part of the rights and obligations to which a student is subject.

If a student intends to use College facilities or equipment outside of the scope of his/her coursework or on a project not funded or sponsored by the College (and such use is of more than an incidental nature), he/she shall request permission from the College before such use.



Academic Policies

The College offers courses leading to degrees of Bachelor of Arts, Bachelor of Music, Bachelor of Science, Bachelor of Science in Electrical Engineering, and Bachelor of Science in Mechanical Engineering.

GENERAL REQUIREMENTS FOR GRADUATION

Candidates for degrees are required to complete the General Education requirements, the courses required for their chosen major, elective hours to meet the minimum 128 total hour requirement, and the chapel attendance requirement. Some students may wish to complete the requirements for a second major or minor. Although this is permitted, the College does not guarantee the availability of class space to complete a second major or minor.

At the discretion of the College, seniors may be required to take educational achievement tests as a condition for graduation.

No credit from other institutions is accepted as applying on the last thirty-two (32) semester hours for a degree to be granted by Grove City College, except as approved by the Registrar.

Grove City College awards degrees to all graduates at one annual Commencement ceremony following completion of the spring semester. A student who completes all graduation requirements at the end of the fall, winter, intersession, or summer term will receive his/her diploma at that time. Such students are listed as members of the class of the year in which they finish; however, they may retain a class reunion year appropriate to their original cohort. The class rank will include the entire graduating class.

Quality Point Average Requirements for Graduation

Grove City College requires each candidate for graduation to earn a minimum career quality point average of 2.00 for all coursework completed for the degree. Each student must also earn a major quality point average of 2.00 for all coursework completed in each declared major and minor field of study.

Calculating the Career (CQPA) and Major (MQPA) Quality Point Average

The quality point average is calculated by summing both the credit hours attempted and the quality points earned, then dividing the total quality points by the total hours attempted and truncating to the second decimal place. Only courses taken at Grove City College are used to calculate the CQPA and MQPA values. The courses that count for each MQPA are included with each major's requirements in the Courses of Instruction section of the *Bulletin*. Courses completed within the College's different academic divisions (undergraduate, post-baccalaureate, second degree, and graduate divisions) will be kept separate for all QPA calculations.

STUDENT RESPONSIBILITY FOR GRADUATION

Although sufficient academic counseling is given through the advising program at Grove City College, the responsibility for proper registration for each semester rests with the student. Each student is ultimately responsible for planning his/her program in order to satisfy graduation requirements.

A student may participate in the College's May baccalaureate and commencement ceremonies if, on the day of each event, he/she has a cumulative career quality point average

and major quality point average of at least 2.00 for all coursework completed; has no more than six (6) unfulfilled chapel requirements; and is able to complete all remaining chapel and outstanding course requirements by the end of the subsequent summer term. A student in this circumstance must submit a "Request to Participate in Commencement" form, available from the Registrar's Office, to obtain approval to walk in the College's commencement ceremony. If approved, the student will be permitted to participate in a ceremony but will not be considered graduated until all requirements have been met.

GRADUATION HONORS

A student who has completed the final fifty percent of his/her academic work at Grove City College and meets the cumulative quality point averages stated below is granted his/her degree with College honors:

- 3.40 to 3.59 inclusive for College honor "Cum Laude."
- 3.60 to 3.84 inclusive for College honor "Magna Cum Laude."
- 3.85 to 4.00 inclusive for College honor "Summa Cum Laude."

Departmental honors in the student's major field of concentration are awarded at Commencement to any student who has attained the following major quality point average:

- 3.40 to 3.59 inclusive for Honors in major field.
- 3.60 to 3.84 inclusive for High Honors in major field.
- 3.85 to 4.00 inclusive for Highest Honors in major field.

All College and Departmental honors listed in the Commencement program are unofficial and based upon estimated results. Official College honors will appear on the diploma, while both College and Departmental honors will appear on the transcript. Final honors will be based upon all work completed at Grove City College within the degree earned.

REGISTRATION

Registration occurs midway through each semester for the following semester. Registration for incoming freshmen is completed preceding the students' entry in the fall. Students complete the registration process by following procedures on the designated day, and by paying tuition and other charges. A student who has a balance on his/her student account or who owes ten (10) or more chapel requirements will not be permitted to register for the next semester until such time his/her account balance is zero or the chapel requirement is met. Students may enroll, change class schedules, or switch between audit and credit status, up until the end of the drop/add period each semester. No student may be added to any section of a class, above a total enrollment of 60, without the approval of *both* the appropriate Department Chair and Dean of the School.

Although sufficient academic counseling is given through the advising program at Grove City College, the responsibility for proper registration for each semester rests with the student. Each student is ultimately responsible for planning his/her program in order to satisfy graduation requirements.

A student desiring to complete independent study and/or honors courses must obtain approval from the faculty sponsor and the department chair, complete the approval form, and, having secured all required signatures, present the form to the Registrar's Office for final approval. Students may take no more than six hours of independent study toward graduation requirements and no more than two independent studies during an academic year.

A student desiring an internship experience for academic credit must have prior written approval of the department chair of his/her major and the chair of the department offering the credit, if different than his/her major.

COURSE NUMBERING

Course numbers are arranged to show the year in which the course should be taken. Prerequisites are implied by the curriculum sequence if not specifically stated. Freshmen are not permitted to enroll in 400-level courses.

Numbers 101 - 199 are used for freshman courses.

Numbers 201 - 299 are used for sophomore courses.

Numbers 300 and up are used for junior and senior courses.

Numbers 290 or 390 are used for Studies courses.

Numbers 260, 360 and 460 are used for independent studies.

Numbers 270, 370 and 470 are used for independent research projects.

Number 480 is used for internships.

Number 499 is used for honors courses.

The College reserves the right to add or delete courses from the schedule of classes, change meeting times, change meeting locations, or change instructors at its discretion.

COURSE LOADS

The normal course load for students is fifteen to seventeen (15-17) semester hours. Each hour over 17 will incur a per hour fee. All students must have a minimum cumulative quality point average (CQPA) of at least 3.00 in order to take course loads in excess of eighteen (18) hours. Students should expect that class assignments will take about two hours outside of class for every hour of scheduled class time.

Exceptions to the above will be allowed only with permission of the student's advisor, and in no case shall a student exceed twenty-one (21) semester hours of academic work (including audit hours). The minimum schedule for any regular full-time student is twelve (12) semester hours of academic work. Audit credits may not be used in meeting the minimum of 12.

Eighteen (18) semester hours is the maximum load for freshmen in their first semester of attendance.

Most courses are three credit hours with class periods on Monday, Wednesday, and Friday of fifty (50) minutes each or on Tuesday and Thursday of seventy-five (75) minutes each for fifteen (15) weeks. Laboratory periods with certain courses are from two to three hours in length.

LABORATORY SCIENCE COURSES

Laboratory science courses at Grove City College are taught in an integrated manner in which class lectures and the laboratory experience are interwoven. Therefore, students should note that science labs are not separate courses and do not receive separate individual credit. Rather, laboratory science courses receive credit hours and a grade as a unit. Students should use caution when enrolling for laboratory science courses at other institutions. Pre-approval is required for these transfer courses to ensure that any proposed laboratory science course has an appropriate laboratory or experimental component and that the number of hours is equivalent to the Grove City College graduation requirement. Otherwise, courses taken at other institutions may not count toward meeting the Grove City College general education and/or major requirement.

LABORATORY MATERIALS FEE

The College recognizes and understands the need for consumable laboratory materials to enhance the learning experience. A materials-related course fee has been implemented for courses using such materials. Courses subject to this fee include, but are not limited to, Astronomy 301; Biology 101, 102, 234, 301, 302, 305, 310, 320, 331, 341, 346, 407, 409; Chemistry 101, 102, 105, 227, 241, 242, 342, 345, 346, 351, 352, 406, 422, 431, 458; Electrical Engineering 251, 252, 310, 351, 352, 451, 452; Exercise Science 253, 256, 258, 304, 407; Natural Science 201, 202, 203, 204; Mechanical Engineering 251, 252, 351, 352, 451, 452; and Physics 101, 102, 122, 210, 288, 321. The College reserves the right to update this list prior to the start of any semester.

AUDITING COURSES

Only full-time students enrolled for at least 12 credit hours may audit courses with the approval of the instructor and the Registrar. Audit credits may not be used to meet the minimum of 12 credit hours. The student must register for the course as an auditor and fulfill class attendance requirements. Upon satisfactory completion of these requirements, the audited course will be entered on the permanent record using the symbol "AU" in lieu of a grade. No credit will be awarded for an audited course. The tuition charged for auditing courses is the same as that charged for credit courses.

Courses may not be changed from credit to audit or from audit to credit after the official end of the drop/add period. The course will be graded "NG" (No Grade) if attendance requirements are not satisfied.

INTERSESSION AND ONLINE COURSES

Grove City College offers a select number of courses from various departments in both a concentrated, two-week format during January and May Interession and as online courses over the winter and summer breaks. Interession courses are taught during the two weeks immediately prior to the opening of the spring semester and during the two weeks following Commencement. Online courses are taught during the winter break between the fall and spring semesters and during the summer break. These courses vary in duration from four to six weeks.

Students wishing to lighten their regular semester loads or who wish to try to graduate in less than four years will find these interession and online courses helpful in meeting their goals. The cost for these courses is listed in the Expenses and Financial Aid section of the *Bulletin*.

Interession and online courses are optional and are not counted as part of a student's regular semester load. Students are cautioned to work closely with their advisors in planning to take interession and/or online courses. Course offerings are dependent upon sufficient enrollment and are subject to cancellation.

TRANSFER CREDIT

College Transfer Credit

Grove City College accepts credits for transfer from any college or university that is accredited by a regional accrediting body, provided the grade earned is "C" or higher. Credits for transfer from a non-accredited college or university will be evaluated on an individual basis, depending on course equivalencies and expected learning outcomes. A student currently enrolled at Grove City College who wishes to take courses at another institution for transfer to Grove City must obtain written clearance from the department chair and Registrar before the work is begun. Courses that do not have a letter grade (A, B, C or P/Pass) will not be accepted. "Satisfactory" grades are not accepted unless the transcript

defines the grade as "C" or higher. Grades for transfer courses do not enter into the computation of a student's quality point average at Grove City College; however, the credits earned will count toward the total credits required for graduation.

- Transfer students are subject to the curricular requirements in place for the year in which they are admitted to Grove City College.
- Once enrolled at Grove City College, the College does not grant credit for any experience in which a student is paid by the federal government, including ROTC, Officer's Candidate School, internships and scientific research.
- At a minimum, 64 credit hours are required to be completed at Grove City College, as well as a minimum of one half of all credit hours for any major, minor, certification or concentration.
- Credits for remedial, developmental, and technical courses are not transferable to Grove City College.
- Credit is not granted for life experience or military service.
- Students may not take courses at other institutions concurrently with classes at Grove City College.
- Transfer courses that do not equate to a specific Grove City College course may be granted departmental or general elective credit at the 100-, 200-, 300- or 400- level.
- Quarter-hour credits (two-thirds of a semester hour) taken at an institution on the quarter hour system will be converted to semester credits at Grove City College (e.g., 6 quarter hours=4.00 semester hours; 5=3.33; 4=2.67; 3=2.00; 2=1.33; and 1=0.67).
- No credit from other institutions is accepted as applying on the last thirty-two (32) semester hours for a degree to be granted from Grove City College, except as approved by the Registrar.
- Freshmen who matriculate with enough Advanced Placement or other college credits to qualify for a higher-class status will be permitted to change their expected graduation year and term but will enter as freshmen and progress to sophomore, junior, and senior class status along with their peers.
- A student who wishes to transfer an internship must meet the internship standards for a typical Grove City College internship experience. The student should provide for evaluation a detailed description about the internship; the company/organization name; the number of hours worked on-site; a description of the job duties and academic requirements; and an evaluation report from the supervisor. The internship coordinator of the corresponding Grove City College department will evaluate these materials to determine if the internship will be approved for transfer, and, if approved, the number of credits granted.

College Courses Taken in High School

Transfer credit may be awarded for courses that are equivalent or comparable to those offered by the College and completed with a grade of "C" or better or P/Pass. Any such courses taken before entering Grove City College must be listed in the catalog of the college of transfer as courses offered for degree credit to that college's undergraduates. Individual college courses taken while in high school will be evaluated on an individual basis, depending on course equivalencies and expected learning outcomes. Students are encouraged to earn credit through the AP, CLEP and IB programs, not through College in the High School programs.

Advanced Placement (AP)

The College may grant academic credit to incoming freshmen who have successfully completed Advanced Placement (AP) courses and achieved an appropriate score on the associated AP test. AP tests have been evaluated on an individual basis and the Registrar's Office will publish annually a credit transfer chart listing credits granted for each test and range of scores. Credit is not given for scores of 1 or 2.

Students who receive AP credit in a subject will lose credit at Grove City College if that same course is repeated here or at another college or university.

College Level Examination Program (CLEP)

Applicants may also earn academic credit for superior achievement on the College Level Examination Program (CLEP) on the subject tests given by the College Entrance Examination Board. CLEP tests have been evaluated on an individual basis and the Registrar's Office will publish annually a credit transfer chart listing credits granted for each test and range of scores. Students who receive CLEP credit in a subject will lose credit at Grove City College if that same course is repeated here or at another college or university. CLEP tests taken after matriculation to Grove City College will not be considered or transferred.

International Baccalaureate Program (IB)

Grove City College recognizes the International Baccalaureate as a vigorous college preparatory program and welcomes applications for admission from all interested students. Credit is generally awarded for IB Higher Level examinations passed with grades of 5, 6 or 7. No credit is awarded for IB Standard Level examinations. IB credit may be applied to major programs with the approval of the appropriate academic department but may not be used to satisfy any of the Humanities course requirements. Students who receive IB credit in a subject will lose credit at Grove City College if that same course is repeated here or at another college or university.

WITHDRAWALS

Withdrawal from Individual Courses

- Students may withdraw from any course during the drop/add period without any record of enrollment in that class on their permanent record.
- For any course dropped after the drop/add period and until the "Last Day to Withdraw from a Course" deadline, a 'W' will be entered on the permanent record and will not be counted in computing the student's academic average. No refund will be made for any course dropped after the official add/drop period.
- Courses dropped after the authorized withdrawal period will be marked 'WF' and will be counted as 'F' in computing the student's academic average. No course may be dropped after Study Day.
- Dropping courses at any time during the semester may affect a student's eligibility to receive financial aid during the current semester and for future academic semesters. Students should contact the Financial Aid Office regarding these matters.
- Grove City College reserves the right to withdraw a student from any course or from the College.

Withdrawal from the College

If a student finds it necessary to discontinue studies at the College, he/she should notify the Enrollment Coordinator at (724) 458-2177 to obtain and complete a withdrawal form for final clearance. If the student is unable to follow this procedure because of illness or emergency, the College will complete the form, but the student must notify the Enrollment

Coordinator of his/her intent to withdraw. A student who follows the procedure to withdraw completely from the College will normally receive "W" grades for all current courses; however, no student will be permitted to withdraw after Study Day. A student who leaves the College without officially withdrawing will forfeit any refund to which he/she might otherwise be entitled and may receive grades of "F" or "WF" in all current courses. A student who has a balance on his/her student account or who owes ten (10) or more chapel requirements will not be issued a transcript, official or unofficial, until such time that his/her account balance is zero or the chapel requirement is met.

A student withdrawing for medical reasons must provide written documentation from a physician. Students receiving a medical withdrawal will receive a "W" grade for all courses.

READMISSION

A student wishing to return to Grove City College after withdrawing in an earlier semester must contact the Enrollment Coordinator at (724) 458-2177 to obtain a "Request of Former Student to Return" form. In order to be considered for readmission, the student must have been in good standing at the time of withdrawal. If the student has attended another school since withdrawing from Grove City College, a record of that work must be submitted to the Registrar before readmission is considered and/or granted.

A readmitted student who has been absent for more than one year is subject to the curricular requirements in force at the time of his/her readmission.

CLASS STANDING

A class standing of freshman, sophomore, junior or senior will be assigned to each new, transfer or returning student at the point of entry or reentry to Grove City College. This standing will be rolled forward one class level when appropriate by the Registrar's Office. A student who has completed additional credit hours may request a change in his/her expected graduation date but the class standing will not be changed, as students will progress forward in class standing along with their peers.

ACADEMIC STANDING

The College expressly reserves the right to dismiss at any time a student whose academic progress is considered to be unsatisfactory.

Good Academic Standing

Each student must maintain a "C" average (2.00 CQPA) or above to remain in good academic standing.

Probation and Dismissal Policy

A student falling below a 2.00 CQPA will either be placed on academic probation or be dismissed from the College. A CQPA of 2.00 or above and an MQPA of less than 2.00 will not result in dismissal; however, a minimum of 2.00 or higher in both is required for graduation. All dismissal decisions are made at the conclusion of each spring semester, and the College considers dismissal a permanent status. Specific probation and dismissal criteria are listed below:

- A student who has earned 35 or fewer local hours from Grove City College (not including transfer credits) will be placed on probation if his/her CQPA is between 1.50 and 1.99. Dismissal will occur at the conclusion of the spring semester if his/her CQPA is 1.49 or lower.
- A student who has earned 36 or more local hours from Grove City College (not including transfer credits) will be placed on probation following any semester his/her

CQPA falls below 2.00. A student already on probation will be dismissed, at the conclusion of the spring semester, if his/her CQPA is below 2.00.

ATTENDANCE EXPECTATIONS FOR STUDENTS

Grove City College believes that attendance is essential to the satisfactory completion of the course. If an absence is incurred for any reason, it is the obligation of the student to ascertain from the instructor what is to be done to maintain his/her standing in that course. All faculty members are expected to have their absence policies (and the attendant penalties) stated in writing in their course syllabi, and these policies are to be reviewed with the students at the first meeting of each course. By unanimous vote of the department chairs and the College's Curriculum & Instruction committee, students are not excused to miss one class to meet the obligations of another.

A student may have unexcused absences which total less than or equal to the number of times the class meets per week. In other words, classes meeting four times per week allow four unexcused absences; three times per week allow three unexcused absences, etc. If an unexcused absence occurs on a test or laboratory day, or when an assignment is due, it will be left to the discretion of the professor as to whether the work may be made up.

Excused Absences

- **Authorized College activities:** Representing the College at college-authorized events are excused by the Provost's Office or one of its two designees—the Athletic Department and the Career Services Office. The Athletic Department issues excused absences for varsity athletes participating in sporting events. The Career Services Office excuses absences for seniors in the cases of post-graduation job interviews and graduate, medical, law, and other professional school admission interviews, as well as for students scheduling internship interviews with potential employers.
- **Loss of immediate family member:** Students are responsible for notifying their professors and the Office of Student Life and Learning at studentlife@gcc.edu when there is a death of an immediate family member.
- **Illness/Injury:** In the event of illness or injury, students are to report to the Zerbe Health and Wellness Center for treatment. If the illness or injury results in a class or classes being missed, it is the student's responsibility to notify the instructor and make arrangements for an excuse from class and for make-up work. If it is determined, after examination at the Zerbe Health and Wellness Center, that the illness/injury prevents class attendance or requires the student to be confined, a representative of the Zerbe Health and Wellness Center will issue a medical reason for absence which the student can present to the instructor. Non-resident students whose illness does not necessitate a visit to the Zerbe Health and Wellness Center must notify their professors. The non-resident student's own health provider may issue a medical reason for absence which the student can present to the instructor.
- In case of an emergency such as hospitalization, the Office of Student Life and Learning should be contacted prior to 5:00 p.m. at (724) 458-2700 or the College Operator after 5:00 p.m. at (724) 458-2000. Students must make up the work for the classes missed so that absences are without prejudice in determining a grade on the missed work.

Unexcused Absences

Absences incurred due to disciplinary sanctions are reported to faculty via the Office of Student Life and Learning. Through formal action, the faculty has agreed that students who miss classes due to such sanctions are not permitted to make up any missed academic work, whether prior to, during, or after the stated period of suspension.

The College reserves the right to withdraw a student from any course in which the student misses 25% or more of the scheduled class meetings for unexcused reasons. A faculty member who encounters such a situation must alert the Provost; the Provost, in consultation with the faculty member and Deans, will evaluate the situation and make the final decision regarding the student's withdrawal. When a student must be withdrawn from a course under such circumstances, the Provost will also determine whether the student's final course grade will be entered as a "W" (Withdrawn) or "WF" (Withdrawn Failing). *Note: This withdrawal policy is not intended to replace the individual faculty member's own class attendance policy (with attendant penalties), nor to contradict the rest of the guideline outlined in this section, but will apply only according to the circumstances and procedure described above.*

Absences other than those mentioned above will be handled at the discretion of the professor whose class is missed.

In summary, students are always encouraged to contact their professors and the appropriate office regarding any class absences and should do so prior to the absence whenever possible. Lists of such excused absences are sent to each professor, who must then excuse the absence on his/her record without prejudice to the student. Excused absences from any class or laboratory do not excuse a student from any work required in the course.

STUDY DAY

The purpose of the College's Study Day is to provide students the opportunity to prepare for the start of finals week, which begins later that evening. Therefore, no testing, presentations, laboratory experiences, exams or other graded experiences may be scheduled on Study Day except for those exams officially scheduled by the Registrar's Office during the final exam period at 7:00 p.m. Furthermore, all course assignments must be completed and submitted by the conclusion of the last scheduled class period prior to the College's official Study Day.

FINAL EXAMINATIONS

Final examinations, according to College policy, are required of all classes and are to be administered during the time scheduled by the Registrar. Final examination times may not be changed to suit the convenience of either instructor or students. The final examination schedule issued by the Registrar is, therefore, to be followed.

REPEAT COURSES

A student may repeat a course in which he/she previously earned a grade of 'C-' or lower. A student who passes a course with a 'C' grade or higher may not later repeat the same class for credit unless the course is designated as repeatable for multiple credits, such as Music 100 – Band.

GRADE VALUES

The grade values are as follows: A, Excellent; B, Good; C, Satisfactory; D, Poor; F, Failure; W, Withdrawn; WF, Withdrawn Failing; I, Incomplete; and AU, Audit.

Grades have the following quality point numerical equivalencies:

A+/A = 4.00, A- = 3.67, B+ = 3.33, B = 3.00, B- = 2.67, C+ = 2.33, C = 2.00, C- = 1.67, D+ = 1.33, D = 1.00, D- = 0.67, F = 0.

GRADE POINT AVERAGE

The grade point average is computed by dividing the number of semester hours **attempted** at Grove City College into the total number of **quality points earned** at the College, including those for failed and/or repeated courses. In the case of a repeated course, only the most recent occurrence of the repeated class will be used in the calculation and count toward hours earned. No student may receive credit for the same course twice, unless the course is designated as repeatable for multiple credits, such as Music 100—Band.

INCOMPLETE GRADE

A grade of Incomplete ('I') is issued only when a student, through no fault of his/her own, is unable to complete his/her work. The student must complete the work for this course by Study Day of the following semester or the 'I' becomes an 'F', even if he/she is no longer enrolled at the College. When the student completes the required work, the faculty member will report the grade earned to the Registrar.

A grade of 'I' may impact a student's eligibility to receive scholarships, grants or loans until the work is completed. The student should contact the Financial Aid Office for clarification.

HONORS COURSES

All honors courses are designated with course number 498 or 499. Students must submit the "Honors Study" form available at www2.gcc.edu/registrar to register for an honors course. Grades of 'A' or 'B' are required for credit in honors courses. Failure to earn an 'A' or 'B' grade will result in a grade of 'F'.

DEAN'S LIST

A Dean's List is published at the end of each semester naming students who earned academic honors for that semester:

3.40 to 3.59 inclusive for Dean's List.

3.60 to 3.84 inclusive for Dean's List with Distinction.

3.85 to 4.00 inclusive for Dean's List with High Distinction.

ACADEMIC INTEGRITY

The Grove City College community maintains strict standards for academic integrity and honesty. The College's standards for honesty in the learning process and the procedures to be followed, as passed by the Faculty, are outlined below and include the pledge, the policy and the process.

The Pledge: Upholding the Honesty in Learning Policy

Every Grove City College student has *already* pledged to uphold the Honesty in Learning policy. The closing sentences of the application for admission include a commitment to abide by "the academic and non-academic regulations" of the College. Thus, all academic work is explicitly pledged, although some professors may request an additional affirmation on a given assignment.

The Policy: Honesty in Learning

Faculty will inform students of behavior appropriate for maintenance of the Honesty in Learning policy as it pertains to their particular courses and disciplines, including the following:

1. **Doing Papers, Outside Work.** Work done out of class, which a student submits as his/her own work to a professor, should be his/her own and should not contain that which has been knowingly obtained from another, other than properly credited references, sources, and citations.
2. **Taking Exams, Tests, Quizzes.** Work done on a test, exam, or quiz, which a student submits to a professor, should be his/her own and should not contain that which has been knowingly obtained from another. The use of electronic devices (e.g., smartphones) during exams, tests, and quizzes without the expressed permission of the instructor/proctor is prohibited.
3. **Instructor-Imposed Limitations.** The work which a student submits to a professor should be prepared in accordance with the rules, limitations, and regulations laid down by the professor in the course, whose rules are often intended to put students on an equal footing.
4. **Preparing for Exams.** A student should not seek to gain an advantage on an exam he/she is about to take by obtaining advanced access to particular questions or advance copies of a professor's exam.
5. A student should not cooperate with, aid or encourage another student to violate the above rules, even though he himself (or she herself) receives no direct benefit to his/her grade.
6. Each professor should take precautions to protect the honest student

Implementation

A student who violates, or who assists another to violate, the Honesty In Learning policy shall be penalized with a minimum of a failing grade for the specific work for which the dishonesty was committed. More severe penalties may be imposed by faculty, including failure in the course. All alleged and actual violations are to follow the Honesty in Learning Policy process.

Special Note: Plagiarism

Plagiarism is a serious violation of moral and academic principles. It involves claiming as one's own original work the ideas, phrasing, or creative work of another person. As such, plagiarism is a direct violation of the biblical commandments against stealing, bearing false witness, and covetousness; thus, the Grove City College policy. The College encourages students to think seriously about the demands of their Christian faith with regard to this issue.

The College reminds students that plagiarism includes the following:

1. Any direct quotation of another's words, from simple phrasing to longer passages, without using quotation marks and properly citing the source of those words.
2. Any summary or paraphrase of another's ideas without properly citing the source of those ideas.
3. Any information that is not common knowledge—including facts, statistics, graphics, drawings—without proper citation of sources.
4. Any cutting and pasting of verbal or graphic materials from another source—including books, databases, web sites, journals, newspapers, etc.—without the proper citation for each of the sources of those materials; this includes any copyrighted artwork, graphics, or photography downloaded from the Internet without proper citation.
5. Any wholesale “borrowing”, theft, or purchasing of another's work and presenting it as one's own, whether from the Internet or from another source.
6. Any presentation of “ghost-written” papers—whether paid for or not—as one's own original work.

7. Making one's work available for copying by others, as well as copying work posted on the Internet or otherwise made available by another.

The Process: How the Honesty in Learning Policy Works

Please note: This process is at all stages confidential. Final completion of all stages should be no later than 25 class days following the initial report. For the purposes of the implementation of the process, a class day shall be considered a weekday (Monday – Friday) on which regularly scheduled classes are held during the fall or spring semester of any given academic year. The Student-Faculty Review Committee (SFRC) will make a reasonable effort to meet and consider allegations of violations of the Policy made against a student during the last weeks of a semester (including finals week). It may not be possible, however, to convene a committee of five students and five faculty at the end of a semester or after the semester has concluded. Therefore, the student against whom an allegation has been made can agree, in writing, to have his or her case considered by a special review committee made up of those students and faculty from the SFRC as a whole who can attend on short notice. All decisions will require a super-majority vote. Any academic integrity issue unresolved during the regular fall or spring semester will be addressed during the next regular semester.

Reporting a violation

1. If a student believes he or she observed a violation of the Honesty in Learning policy, he or she will fill out an online report of the alleged violation which is automatically sent to the professor of that particular course and the chair of the Student-Faculty Review Committee (SFRC). This report should be filed within five class days of discovering the alleged violation.
2. If a faculty member believes he or she observed a violation of the Honesty in Learning policy, he or she will fill out an online report of the alleged violation which is automatically sent to the chair of the SFRC. This report should be filed within five class days of discovering the alleged violation.

Once the violation is reported

3. The faculty member then may meet with the student(s) who allegedly committed the violation. If the report has been submitted by someone other than the faculty member, the faculty member also may meet separately with the person who submitted the report. The professor may seek the advice of the Consultation Panel beforehand. The Consultation Panel will be composed of three professors who will be called upon by the Consultation Panel Coordinator at that time. This panel is advisory in nature and helps the faculty member evaluate the merits of an alleged violation of the Honesty in Learning policy. All meetings must be concluded within five class days of receiving the report.
 - a. **If the student:**
 - admits to violating the Honesty in Learning policy, the student shall be penalized with a minimum of a failing grade for the specific work under review. The SFRC will issue the sanction. This will help guarantee consistency and equity in the sanction.
 - denies that a violation occurred but the professor maintains the contrary, the SFRC will hear from all involved parties and make a decision.
 - b. **If a faculty member determines that:**
 - no violation has occurred; he or she submits an Honesty in Learning resolution form to the chair of the SFRC. At that point, the entire matter is dropped and all records of the alleged violation are destroyed.

- a violation did occur, he or she completes a resolution form, which includes a recommendation for a proposed sanction and sends it to the SFRC and the Provost's Office. From this point, the procedure follows the steps described below under "Once the Student-Faculty Review Committee (SFRC) receives the resolution form."
- in either case, the faculty member has two class days to submit the Honesty in Learning Resolution Form.

Once the Student-Faculty Review Committee receives the resolution form

4. Once the Student-Faculty Review Committee (SFRC) receives the resolution form, the Committee has five class days to resolve the matter.
5. The chair of the SFRC, a non-voting member, serves as an ombudsman and coordinates the activity of the SFRC.
6. The Committee chair selects five students and five professors from the pool of elected representatives to address the matter. All decisions require a super-majority of seven out of ten votes. If a decision falls short of a super-majority, then the student is exonerated and all records of the alleged violation are destroyed.
7. The SFRC will assemble the relevant evidence, interview the parties involved, determine if a violation was committed, and if so, what further sanction (if any) to assess.
8. If dissatisfied with the decision of the SFRC, students or faculty may appeal the Committee's decision to the dean of the school in which the alleged violation occurred within one class day. If the Dean's decision does not provide satisfaction, the decision may be further appealed to the Provost.
9. Appeals of the SFRC's decision must be made within one class day. At each point in the appeal process, the Dean or Provost should reach his or her decision within three class days of receiving the appeal.
10. Once the final decision has been rendered and any or all appeals exhausted by any parties involved, the Provost's Office carries out the recommended sanction.

If the student has been involved in two or more violations of the Honesty in Learning policy, the Provost may apply additional sanctions which may include referring the matter to the Administrative Council with the recommendation for academic dismissal.

GRADE APPEALS

A student who believes a course's final grade was determined unfairly may appeal. The student handbook, *The Crimson*, provides specific details regarding the grade appeal process.

TRANSCRIPTS

Current or former students may request transcripts on-line at www.gcc.edu, from the Registrar's Office by completing a Transcript Request Form, or by providing, in writing, specific information such as full (maiden) name, graduation date or dates of attendance, number of transcript(s) desired, address(es) to which transcript(s) should be mailed, and signature. This request must be accompanied by \$3.00 per transcript plus \$2.25 per delivery address. Transcripts or the information contained therein may not be released to third parties without written consent of the student. Written requests should be addressed to: Registrar, Grove City College, 100 Campus Drive, Grove City, PA 16127-2104.

A student who has a balance on his/her student account or who owes ten (10) or more chapel requirements will not be issued a transcript until such time his/her account balance is zero or the chapel requirement is met.

INFORMATION TECHNOLOGY

Grove City College strives to be a leader in the use of information technology in higher education. A number of technical services are provided to the campus community to help facilitate teaching and learning.

Grove City College E-mail Accounts

Each student is provided a Grove City College e-mail account. The purpose of this account is to facilitate communication between students, professors, and other student support services. It is essential for each student to maintain his/her account since important campus communications are sent only by this means.

Campus Portal

Each student is also provided access to the College's campus portal - myGCC. The campus portal enables students to review campus news, search on-line for course schedules, register for classes, review financial accounts, obtain unofficial transcripts, and more. Mid-term and final grades are also posted via the campus portal.

On-Line Course Management Systems

Many professors use course management systems for posting course syllabi, assignments, grades, and other relevant information. Students will be provided with appropriate user accounts, and professors will notify students if he/she is using a course management system for a specific course.



General Education and Degree Programs

Since its founding in 1876, Grove City College, committed to Christian principles, has sought to provide liberal and professional education of the highest caliber. Long recognized for its academic quality, Grove City College insists that all its graduates possess, in addition to specialized knowledge in major or professional fields, a high level of cultural literacy and communication skills. Students are required to complete forty-five (45) credit hours of general education courses with emphasis in the humanities; science, faith and technology; social sciences; quantitative and logical reasoning; laboratory sciences; and foreign language. This program of studies in a broad range of liberal arts and sciences, consistent with many national recommendations for excellence, helps to ensure that Grove City College graduates have the marks of educated persons, whatever their profession.

GENERAL EDUCATION REQUIREMENTS

	BA and BS (non-science)	BM, BS, BSEE, and BSME (science)
Humanities Core (Civilization Series)	15 hours	15 hours
Writing Requirement	3 hours	3 hours
Science, Faith and Technology	2 hours	2 hours
Foundations of the Social Sciences	3 hours	3 hours
Quantitative/Logical Reasoning	6 hours	6 hours
Natural Sciences (with laboratories)	8 hours	8 hours
Physical Education	2 hours	2 hours
Foreign Language	<u>6 hours</u>	<u>0 hours</u>
	45 hours	39 hours

NOTE: In many cases, courses that students take to satisfy the requirements for a major will also satisfy general education requirements. For example, engineering students are already required to take more than the minimum natural science courses, and business students already take math and statistics courses.

Each student is required to fulfill the general education and major specific requirements listed in the Grove City College *Bulletin* (the Catalog) for the year in which he/she matriculates to the College as a full-time freshman student, or in the case of a transfer student, the year he/she initially transfers to the College. If a student withdraws from the College and returns within one year, he/she may continue to follow his/her original Catalog requirements. However, if a student is away from the College for over one year, he/she must then follow the requirements listed in the Catalog year of the year of his/her return to the College. A student may choose to follow the requirements of a later Catalog, but he/she must then fulfill both the major and general education requirements outlined and required in that Catalog edition.

WRITING INTENSIVE (WI) / SPEAKING INTENSIVE (SI) / INFORMATION LITERACY (IL) STUDIES

Recognizing that an essential component of academic preparation and lifelong learning consists of the ability to locate, evaluate, and present information, the College requires all

students to complete a sequence of courses that provide instruction in information literacy, writing, and speaking.

The Writing Intensive/Information Literacy (WI/IL) expectations are met through two curriculum tracks which are designed to provide a general across-the-curriculum introduction plus additional major-specific instruction. First, a foundation is laid for all students through our general education curriculum. WRIT 101 initiates students into Information Literacy through general library, database, and internet use. Humanities 102 “Civilization and the Biblical Revelation” focuses on course specific instruction.

Building upon the general instruction received through the Civilization Series, each department provides discipline-specific instruction to its majors either within a single course or across several courses, concluding in a research paper and frequently an oral presentation. Students receive exposure to major databases, library resources, internet resources, and scholarly research techniques employed by professionals.

The Speaking Intensive (SI) component of our General Education curriculum is fulfilled through major related courses where students learn both basic and advanced public speaking skills.

CIVILIZATION SERIES

The Civilization Series, also called the “Humanities Core” (HUMA), discusses the origins, merit, and influence of history’s most decisive ideas, literary works, and artistic products in five three-credit hour courses. Students study the leading thinkers, books, and ideas in religion, philosophy, history, political science, economics, literature, art, and music. Reflecting the vision of the founders of Grove City College, these five courses encourage intellectual, moral, spiritual, and social development grounded in Christian ideas of truth, morality and freedom. Although these 15 hours in the humanities examine many different points of view and consider other nations and cultures, they emphasize America’s religious, political, and economic heritage of individual freedom and responsibility and their part in the development of Western civilization.

HUMA 102. CIVILIZATION AND THE BIBLICAL REVELATION. A study of Christian revelation and how it influenced the course of Western civilization. It focuses on key texts that are foundational for theology, cosmology, epistemology, human nature, society, and ethics. This course contains the second component of the across-the-curriculum Information Literacy (IL) requirement. The year-long course sequence of Religion 211 and 212 may substitute for this course. Similar courses taken at other institutions will transfer as elective credit and may not be used to fulfill this requirement.

Semester course, three hours.

HUMA 200. WESTERN CIVILIZATION: HISTORICAL AND INTELLECTUAL FOUNDATIONS. This course explores the intellectual, cultural, political, and religious foundations of Western Civilization from the ancient Greeks to the modern world, with special emphasis on great thinkers, crucial events, and significant ideas. Prerequisites: Writing 101 and Humanities 102. Students substituting Religion 211 and 212 for Humanities 102 must take either Religion 211 or Religion 212 as a prerequisite for this course.

Semester course, three hours.

HUMA 202. CIVILIZATION AND LITERATURE. A study of great works of literature that represent the major periods in the history of Western civilization. The course explores the nature of God and humanity, the nature of good and evil, the meaning of moral choice, the purpose of life, and the meaning of salvation.

Semester course, three hours.

HUMA 301. CIVILIZATION AND THE ARTS. An examination of outstanding works of visual art and music that represent the major periods in the history of Western civilization. The course examines the nature of God, the ways people have expressed their understanding of God's nature in the arts, the ways people have seen themselves throughout Western history, and the purpose of life. *Semester course, three hours.*

HUMA 303. CHRISTIANITY AND CIVILIZATION: MODERN AND POSTMODERN CHALLENGES. An examination of the theological and philosophical underpinnings of Christianity, historical and contemporary challenges to Christianity, resources for developing Christian responses to these challenges, and the enduring relevance of the Christian vision of the good life to contemporary life, including vocation. This course is the Humanities capstone. Similar courses taken at other institutions will transfer as elective credit and may not be used to fulfill this requirement. Prerequisites: Humanities 200; and Humanities 202 or 301. *Semester course, three hours.*

WRITING REQUIREMENT

Foundations of Academic Discourse introduces students to the fundamentals of academic writing. Students explore informative, analytical, evaluative, and persuasive writing, learning how to develop their writing through the use of various rhetorical strategies. The course also introduces students to the basics of critical thinking, providing opportunities for students to discover ways in which good thinking produces good writing and how writing is itself a mode of thinking. Students develop a practical understanding of writing as a process, and they develop productive writing strategies that can be adapted to various academic and professional writing contexts. In preparation for research writing required in many other courses, this course introduces students to the fundamentals of information literacy.

WRIT 101. FOUNDATIONS OF ACADEMIC DISCOURSE. A course introducing students to the fundamentals of college composition. Topics include the writing process, rhetorical strategies, basics of critical reading and thinking, and key forms of writing such as informative, evaluative, argumentative, and synthesis. This course serves as a foundation to prepare students to succeed in other academic writing contexts. This course contains the Information Literacy (IL) requirement. *Semester course, three hours.*

STUDIES IN SCIENCE, FAITH, AND TECHNOLOGY (SSFT)

Among other things, courses in this category explore the relationship between science and religion, technology and faith, technology and ethics, the guidance which ethical analysis brings to scientific and technological endeavors, and the basic presuppositions and underpinnings of science and Christian faith. All students must take one course from the following five choices:

- COMP 205 or SSFT 205—*Ethics, Faith, and the Conscious Mind*
- PHIL 243—*Science and the Human Inquiry, Design and the Person*
- SSFT 210—*Science and Religion*
- SSFT 212—*Science, Faith, and Technology*

Most Arts and Letters majors, as well as Mathematics, Computer Information Systems, and Computer Science majors should complete the SSFT requirement by the end of the sophomore year. Biology, Chemistry, Physics, engineering and Entrepreneurship majors should complete the SSFT requirement by the end of the junior year.

COMP 205 / SSFT 205. ETHICS, FAITH, AND THE CONSCIOUS MIND. This course focuses on three components of ethics, faith, and philosophy from a computer science perspective. First, it examines the Christian theological and philosophical foundations of science and the ethical role of computer science in areas such as globalization, autonomous systems, and intellectual property. Second, it considers perspectives on the origins, nature, and future of human cognition and consciousness, including intersections of artificial intelligence and consciousness. Third, it reviews ethical systems, cyberethical professional codes, ethical problem-solving techniques, and specific ethical cases, again from a computer science perspective and building on an informed Christian response to technology. Students may only receive credit for one of Science, Faith, & Technology 205 or Computer Science 205. Prerequisites: Humanities 102 (or Religion 211 and 212); and a lab science. The lab science may be taken concurrently with this course. *Spring semester only, three hours.*

PHIL 243. SCIENCE AND THE HUMAN: INQUIRY, DESIGN AND THE PERSON. This course will examine historical and contemporary discussions of the nature of scientific inquiry and scientific knowledge, and related questions in the philosophy of science. It will also examine philosophical issues connected with design in nature, origins, and current technological development. *Semester course, three hours.*

SSFT 210. SCIENCE AND RELIGION. A study of fundamental themes in science and religion and important issues that emerge from the science and religion interface (e.g., issues from cosmology, Darwinism and evolutionary theory, and the neurosciences). The course will provide an opportunity to study the two perspectives of science and religion and investigate ways in which these apparently separate approaches might be connected. Prerequisites: Humanities 102 (or Religion 211 and 212); and a lab science. The lab science may be taken concurrently with this course. *Semester course, two hours.*

SSFT 212. SCIENCE, FAITH, AND TECHNOLOGY. This course is designed to give a theological, philosophical, and historical rationale for why Christians do science. What science is, how and why it developed in the context of Western Christianity, and how Christians are to respond to scientific information and theory will be considered. Particular emphasis will be given to biblical and scientific perspectives on the origin of the universe, the origin of organic life, and human origins. Selected topics in modern science and technology, such as cloning, stem cell research, chimeras, cosmology, quantum physics, and artificial intelligence, will also be addressed. Prerequisites: Humanities 102 (or Religion 211 and 212); and a lab science. The lab science may be taken concurrently with this course. *Semester course, two hours.*

FOUNDATIONS OF THE SOCIAL SCIENCES

All students are required to choose one course from the following:

- Economics 120—*Foundations of Economics*
- History 120—*Foundations of History*
- History 141 – *World Geography*
- History 204—*Historical and Philosophical Foundations of Education*
- Political Science 101—*Foundations of Political Science*
- Psychology 101—*Foundations of Psychological Science*
- Psychology 200—*Cross-Cultural Psychology*
- Social Work 101—*Foundations of Social Work*
- Sociology 101—*Foundations of Applied Sociology*
- Sociology 103—*Foundations of Cultural Anthropology*

All ten foundations courses, in addition to providing overviews of their respective fields, are fashioned to give each Grove City College graduate a distinctive stamp, for they embrace a strong Christian worldview and provide a grounding in critical analysis of the questions and issues that have animated Western thought as applied to each specific field of study.

Similar courses taken at other institutions may transfer as elective credit but in most cases will not fulfill the Foundations requirement, with two exceptions. Courses approved to transfer as either Psychology 101 or Sociology 101 will fulfill the Foundations requirement if the student also completes, at Grove City College, one of the associated 1-credit classes listed below:

PSYC 105—*Perspectives on Psychology* (if transferring Psychology 101)

SOCI 105—*Perspectives on Sociology* (if transferring Sociology 101)

QUANTITATIVE/LOGICAL REASONING

All students are required to take a total of six hours from any of the courses listed below.

- Any courses with the MATH prefix, except MATH 110.
- One course from:
 - Management 201—*Business Statistics**
 - Mathematics 201—*Statistical Methods**
 - Psychology 201—*Statistical Methods**

**Students may not receive earned credit for more than one of these three courses.*
- One course from:
 - Computer 141—*Computer Programming I*
 - Music 103—*Basic Music*
 - Philosophy 201—*Symbolic Logic*
 - Philosophy 211—*General Logic*

NATURAL SCIENCES (with laboratories) (SCIC)

The Natural Science requirement, which must be completed by the end of the junior year, must be fulfilled by taking eight hours of lab science courses by any one of the following methods:

- Two four-credit lab science courses offered by the Departments of Biology, Chemistry, or Physics, i.e. BIOL 101 and BIOL 102, or BIOL 101 and CHEM 101
- Science 201; and 202, 203, or 204
- Science 202; and 201 or 203
- Science 203; and 201, 202, or 204
- Science 204; and 201 or 203
- Science 201; and a four-credit Biology or Chemistry lab course
- Science 202; and a four-credit Chemistry or Physics lab course
- Science 203; and a four-credit Biology or Physics lab course
- Science 204; and a four-credit Chemistry or Physics lab course

Note: A student may not fulfill this requirement by taking SCIC 202 and 204.

SCIC 201. FUNDAMENTALS OF THE UNIVERSE. This course covers major ideas concerning the physical universe, including applications of those ideas, past and present. Topics include philosophy of science, motion, cosmology, light, gravity, energy, and quantum physics. *No credit will be given to students who have already received credit for Physics 101 or 121.* This course is designed to meet general education science requirements for liberal arts students. Three lectures and one lab per week. *Semester course, four hours.*

SCIC 202. LIFE SCIENCE. This course discusses the contribution of a scientific approach to our understanding of life, with a focus on fundamental ideas and their historical development and impact on society. Topics include aspects of molecular, genetic, cellular, organismal, and population biology. *No credit will be given to students who have already received credit for Biology 101.* This course is designed to meet general education science requirements for liberal arts students. Three lectures and one lab per week.

Semester course, four hours.

SCIC 203. ATOMS, MOLECULES AND THE MATERIAL WORLD. This course is designed to make chemistry accessible to anyone with the desire to understand the chemical world in which we live. A strong emphasis on chemical reactions as well as on the basic theoretical principles that underlie chemistry are presented. An integral part of this course is the development of problem solving skills. *No credit will be given to students who have already received credit for Chemistry 101.* This course is designed to meet general education science requirements for liberal arts students. Three lectures and one lab per week.

Semester course, four hours.

SCIC 204. ENVIRONMENTAL SCIENCE. This course gives emphasis to a scientific approach to environmental awareness including contributions from ecology, biology, geology and chemistry. Historical worldviews that impact attitudes, ethics, and policies toward the environment will be discussed. The consequences of environmental pollution and strategies for resource management will be explored with particular attention to policies that impact future sustainability of our planet. The laboratory will include both field and lab hands-on experiences. This course is designed to meet general-education science requirements for liberal arts majors. Three lectures and one lab per week.

Semester course, four hours.

PHYSICAL EDUCATION

Each new and transfer student is required to begin the College's Fitness and Wellness physical education course sequence during the first fall semester attended (Physical Education 101 for men or Physical Education 111 for women) and continue with the second course during the following spring semester (Physical Education 102 for men or Physical Education 112 for women). Each class meets twice per week for one credit hour per semester.

FOREIGN LANGUAGE

Grove City College believes the foreign language requirement helps promote a high level of cultural literacy and communication skills that are necessary for students to be competitive in our world and to lead and serve in a global context.

All B.A. graduates and non-science B.S. graduates are required to complete at least the second-year course sequence (201-202 courses) in a foreign language. Students should plan to begin fulfillment of this requirement in the fall of their freshman year, choosing one of the following options:

1. Completing the 201-202 level courses in a modern, widely-spoken foreign language such as Chinese, French, or Spanish.
2. Completing the 201-202 level courses in a classical written language, such as Latin (offered infrequently), New Testament Greek, and Biblical Hebrew, plus an additional six credit hours from the following international culture courses:
 - Chinese 320—*Introduction to Chinese Civilization* (taught in English)
 - Communication Studies 225—*Intercultural Communication* or Global Studies 300—*International Manners and Mores*

- English 205—*World Literature I* or 206—*World Literature II*
- Global Studies 310—*Chicano/Latin American Literature* (taught in English)
- Music 329—*World Music: Africa and the Americas* or 330—*World Music: Asia and the Middle East*
- Political Science 341—*African Politics*, 342—*Middle Eastern Politics*, or 344—*Asian Politics*
- Psychology 200—*Cross-Cultural Psychology*
- Religion 342—*Christianity and the Modern World*
- Sociology 103—*Cultural Anthropology*
- Completing the 101-102 level course sequence in the same modern, widely-spoken foreign language, such as Chinese, French, or Spanish

The standard for determining the foreign language course needs for each student is based on the following:

- **Three years in high school of a modern, widely-spoken language:**
Students who have studied three years of the same modern, widely-spoken foreign language in high school with a "B" average or better will be exempt from further language requirements.
- **Two years in high school of a modern, widely-spoken language:**
Students who have studied two years of the same modern, widely-spoken foreign language in high school with a "B" average or better will normally begin college language study with the 201 intermediate language course. Upon successful completion of the 201 and 202 intermediate courses in the same language, the student will have met the language requirement.
- **Three years in high school of a classical language:**
Students who have studied three years of the same classical language in high school with a "B" average or better will fulfill the foreign language requirement by completing one of these options:
 - a. 6 credit hours of approved international culture courses (see list above), or
 - b. The 101-102 level course sequence in the same modern, widely-spoken foreign language, such as Chinese, French, or Spanish, or
 - c. A score of 4 or higher on an Advanced Placement Language exam in Chinese, French, German, Italian, Japanese or Spanish.
- **Two years in high school of a classical language:**
Students who have studied the same classical language for two years in high school with a "B" average or better will fulfill the foreign language requirement by completing one of these options:
 - a. Latin 201 and 202 (offered infrequently), Greek 201 and 202, or Hebrew 201 and 202, and 6 credit hours of approved international culture courses (see list above), or
 - b. The 101-102 level course sequence in the same modern, widely-spoken foreign language, such as Chinese, French, or Spanish, or
 - c. A score of 4 or higher on an Advanced Placement Language exam in Chinese, French, German, Italian, Japanese or Spanish.
- **Advanced Placement:**
Students who receive credit for 201 and 202 level courses in Chinese, French, German, Italian, Japanese or Spanish through an Advanced Placement foreign language exam will have met the foreign language requirement. If the student receives foreign language credit for 201 only, he/she will need to take the 202 level in that same language to meet the foreign language requirement, unless the student

has received the exemption described above. The Advanced Placement policy is published at www2.gcc.edu/registrar.

- **TOEFL:**

Students who submit a TOEFL report which indicates a native language other than English will have met the foreign language requirement.

When a student changes from a major that does not require a foreign language to one which does require it, the student will have to complete the requirement according to the above guidelines. The following majors require the completion of a 201-202 foreign language course sequence: Accounting; Applied Sociology; Biblical and Religious Studies; Business Economics; Christian Ministries; Communication Studies; Computer Information Systems; Economics; Elementary, Middle Level, and Secondary Education majors (PreK-4 Elementary Education, PreK-8 Special Education, Middle Level Math/English Education, Middle Level Math/History Education, Middle Level Science/English Education, Middle Level Science/History Education, and Middle Level Science/Math Education, English and Communication Secondary Education Certification, English and Secondary Education Certification, History and Social Studies Secondary Education Certification, Mathematics and Secondary Education Certification); English; Entrepreneurship; Finance; History; International Business; Management; Marketing; Mathematics; Philosophy; Political Science; Psychology; and Social Work.

Refer to the “Modern Languages” section for more information regarding placement.

CHAPEL ATTENDANCE REQUIREMENT

Grove City College provides a chapel/convocation program to promote each student’s spiritual and moral development during the student’s College educational experience. This program is comprised of diverse services and activities, and while it is designed to encourage spiritual growth, the College understands that ultimately Christian maturity is the responsibility of the individual student and not the consequence of a requirement. Chapel services are the common expression of our Christian faith as members of the campus community. Thus, chapel/convocation attendance is a core component of the student’s experience at Grove City College. Objectives of individual chapel events include the following:

1. To provide occasions where all members of the academic community can express a common faith in Jesus Christ.
2. To allow members of the campus community to utilize their talents and gifts in ministry to other members of the community.
3. To challenge students theologically and spiritually from an Evangelical biblical perspective.
4. To affirm students in their particular Christian tradition and experience spiritual maturity in their individual faith expression.
5. To promote student appreciation and respect for other Christian traditions and expressions different from their own.
6. To provide a context in which prayer can be offered on behalf of those in the campus community who are experiencing tragedy or special need.
7. To develop student sensitivity and responsiveness to the needs of others in the world.

There are many chapel options available to students, and each student is free to select from these options according to his/her own interests as long as the student meets the following **per semester attendance requirements (fall/spring terms only)**:

1. Full-time students (12 or more credits) must attend sixteen (16) chapels.

2. Students enrolled at least half-time but less than full-time (6 to 11 credits) must attend eight (8) chapels.
3. Students enrolled less than half-time (5 or fewer credits) are not required to attend chapel.

Enrollment status will be determined for each student at the conclusion of the College's course drop/add week. Withdrawing from courses after that date will not affect the number of chapels owed during a semester.

A student studying abroad through an external program; enrolled in the Washington, DC, Internship Program; attending as a non-degree, post-baccalaureate or second degree student; or full-time student teaching will not be required to attend chapel during the semester of that experience. A student enrolled as an undergraduate beyond the typical four-year degree period will be required to attend chapel within the requirements listed above. There is no additional chapel requirement for a student who graduates early.

Chapel requirements not fulfilled in a semester must be made up (this includes any unfulfilled chapel requirements from previous semesters). A student who owes ten (10) or more chapel requirements will not be permitted to register for the next semester until such time the requirement is met. All grades and transcripts will be held for students who withdraw from the College who have ten (10) or more unfulfilled chapel requirements. Any student who has not fulfilled the chapel attendance requirement by his/her graduation date will not be certified as a graduate of Grove City College until the requirement has been satisfied. Furthermore, students owing more than six (6) chapel requirements on Study Day of the semester they are to graduate will not be permitted to participate in the College's commencement ceremony.

DEGREE PROGRAMS

BACHELOR OF ARTS (B.A.)

The courses leading to the Bachelor of Arts degree offer the student an opportunity to specialize in the field of his/her particular interest and to obtain enriching contacts with other fields of liberal culture. The majors provide preparation for graduate work, teaching, business, law, ministry, and other professions.

MAJORS AVAILABLE IN THE B.A. PROGRAM

Majors offered in the general liberal arts are Applied Sociology, Biblical and Religious Studies, Christian Ministries, Communication Studies, Economics, English, French, History, Philosophy, Political Science, Psychology, and Spanish.

Certification for grades K-12 is available in French and Spanish and for grades 7-12 in the following areas: English, English/Communication, and History (Social Studies).

Students may undertake to fulfill the requirements of a second major (not a second degree) subject to availability of space in the classes. The College cannot, however, assure students that they can in all instances complete a second major. Students earning two majors in different degrees may select which baccalaureate degree they wish to be awarded.

REQUIREMENTS FOR THE B.A. DEGREE

1. **The General Education requirements.**
2. **Major requirements.** Listed under the department in the Courses of Instruction section. A status sheet for every major will be provided listing specific course and hour requirements and should be maintained by the student; however, the *Bulletin* is the authoritative document regarding requirements. At least one-half of all hours required for the major must be earned at Grove City College. The major requirements determine the Major Quality Point Average (MQPA) calculation.

3. **Major-related requirements.** These courses, though required for the major, do not count toward the major QPA.
4. **Electives.** Sufficient elective hours to complete the total of 128 hours required for the degree. To take advantage of the benefits of a liberal education and avoid overly narrow specialization, a significant portion of these electives should be chosen from fields not directly related to the student's field of concentration.
5. **Chapel.** Chapel attendance is a requirement for graduation from Grove City College. Students are required to attend chapel sixteen times each semester.

BACHELOR OF SCIENCE (B.S.)

The courses leading to the Bachelor of Science degree offer the student an opportunity to specialize in the fields of science and enriching contacts with other fields of liberal culture. The majors provide preparation for graduate work, teaching, business, industry and the various health-related professions.

MAJORS AVAILABLE IN THE B.S. PROGRAM

The majors include Accounting, Biochemistry, Biology, Biology/Health, Chemistry, Computer Science, Conservation Biology, Entrepreneurship, Exercise Science, Finance, Management, Marketing, Mathematics, Middle Level (4-8) Math/English Education, Middle Level (4-8) Math/History Education, Middle Level (4-8) Science/English Education, Middle Level (4-8) Science/History Education, Middle Level (4-8) Science/Math Education, Middle Level (4-8) Math/English and PreK-4 Elementary Education, Middle Level (4-8) Math/History and PreK-4 Elementary Education, Middle Level (4-8) Science/English and PreK-4 Elementary Education, Middle Level (4-8) Science/History and PreK-4 Elementary Education, Middle Level (4-8) Science/Math and PreK-4 Elementary Education, Molecular Biology, Neuroscience, PreK-4 Elementary Education, PreK-8 Special Education and PreK-4 Elementary Education, Physics, Psychology, and Social Work. Interdepartmental majors are also available in Physics/Computer, Business Economics, Computer Information Systems, and International Business.

Teacher certification in grades PreK-4 Elementary, PreK-8 Special Education with PreK-4 Elementary, 4th-8th grade Middle Level in Math/English, Math/History, Science/Math, Science/English, or Science/History, and 4th-8th grade Middle Level in Math/English, Math/History, Science/Math, Science/English, or Science/History with PreK-4 Elementary Education are available. Certification for grades 7-12 is available in the following areas: Biology/General Science, Chemistry, Chemistry/General Science, Mathematics, Physics, and Physics/General Science.

Students may undertake to fulfill the requirements of a second major (not a second degree) subject to the availability of space in the classes. The College cannot, however, assure students that they can in all instances complete a second major. Students earning two majors in different degrees may select which baccalaureate degree they wish to be awarded.

REQUIREMENTS FOR THE B.S. DEGREE

1. **The General Education requirements.**
2. **Major requirements.** Listed under the department in the Courses of Instruction section. A status sheet for every major will be provided listing specific course and hour requirements and should be maintained by the student; however, the *Bulletin* is the authoritative document regarding requirements. At least one-half of all hours required for the major must be earned at Grove City College. The major requirements determine the Major Quality Point Average (MQPA) calculation.

3. **Major-related requirements.** These courses, though required for the major, do not count toward the major QPA.
4. **Electives.** Sufficient elective hours to complete the total of 128 hours required for the degree. To take advantage of the benefits of a liberal education and avoid overly narrow specialization, a significant portion of these electives should be chosen from fields not directly related to the student's field of concentration.
5. **Chapel.** Chapel attendance is a requirement for graduation from Grove City College. Students are required to attend chapel sixteen times each semester.

PRE-HEALTH PROFESSIONS

Students who wish to meet the requirements for admission to medical college or other health-related colleges normally follow programs of study offered by either the biology or chemistry departments. Other departmental majors are possible, but students should be sure to complete required pre-requisites in their desired fields.

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING (B.S.E.E.)

The Department of Electrical and Computer Engineering offers an undergraduate program leading to the degree Bachelor of Science in Electrical Engineering. The electrical engineering program is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>. The field of concentration provides preparation for graduate work and employment in industry.

CONCENTRATIONS FOR THE B.S.E.E. DEGREE

The electrical engineering program provides selective options in **Electrical Engineering Concentration** or **Computer Engineering Concentration**. Reflecting the fundamental objectives of a liberal education, the program requires, in addition to mathematics, a number of hours in the liberal arts as well as the General Education requirements. The use of computers is an integral part of the Electrical Engineering concentration. Students are well prepared to enter the engineering field, as well as the civic and cultural activities where they live and work.

REQUIREMENTS FOR THE B.S.E.E. DEGREE

1. **The General Education requirements.**
2. **Major requirements.** Listed under the Department of Electrical and Computer Engineering in the Courses of Instruction section. A status sheet for this major will be provided listing specific course and hour requirements and should be maintained by the student; however, the *Bulletin* is the authoritative document regarding requirements. At least one-half of all hours required for the major must be earned at Grove City College. The major requirements determine the Major Quality Point Average (MQPA) calculation.
3. **Major-related requirements.** These courses, though required for the major, do not count toward the major QPA.
4. **Electives.** Sufficient elective hours to complete the total of 128 hours required for the degree.
5. **Chapel.** Chapel attendance is a requirement for graduation from Grove City College. Students are required to attend chapel sixteen times each semester.

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING (B.S.M.E.)

The Department of Mechanical Engineering offers an undergraduate program leading to the degree Bachelor of Science in Mechanical Engineering. The mechanical engineering program is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>. The course of study provides preparation for graduate work and employment in industry.

The Mechanical Engineering program provides an extensive offering of required foundational courses as well as elective courses in the mechanical and thermal systems areas. Reflecting the fundamental objectives of a liberal education, the program requires, in addition to mathematics and the sciences, a number of hours in the liberal arts as well as the General Education requirements. The use of computers and discipline specific software is an integral part of the Mechanical Engineering curriculum. Students are well prepared to enter the engineering field, as well as the civic and cultural activities where they live and work.

REQUIREMENTS FOR THE B.S.M.E. DEGREE

- 1. The General Education requirements.**
- 2. Major requirements.** Listed under the Department of Mechanical Engineering in the Courses of Instruction section. A status sheet for this major will be provided listing specific course and hour requirements and should be maintained by the student; however, the *Bulletin* is the authoritative document regarding requirements. At least one-half of all hours required for the major must be earned at Grove City College. The major requirements determine the Major Quality Point Average (MQPA) calculation.
- 3. Major-related requirements.** These courses, though required for the major, do not count toward the major QPA.
- 4. Electives.** Sufficient elective hours to complete the total of 128 hours required for the degree.
- 5. Chapel.** Chapel attendance is a requirement for graduation from Grove City College. Students are required to attend chapel sixteen times each semester.

BACHELOR OF MUSIC (B.M.)

The College offers a Music Education major with certification in grades PreK-12 that leads to the Bachelor of Music degree. Definite music development and completion of all requirements are necessary for graduation. The course is approved by the Pennsylvania Department of Education for the preparation of music teachers.

The Department of Music also offers other majors, which include Music, Music and Business, Music and Religion, and Music Performance.

Candidates for the B.A. or the B.S. degree may present a maximum of eighteen semester hours in the field of music as electives in their courses. If applied music is taken, a maximum of eight hours will be accepted with the remaining ten hours to be elected from the music curriculum and ensemble.

The Department of Music offers opportunities to all students of the College to participate in music ensemble activities, which are directed by members of the music staff. These activities include the College choirs, the orchestras, the bands, and the jazz bands.

Students will be granted one credit hour per semester for membership in the band, orchestra or choir. Credit may be received for membership in two of these organizations per semester for non-music majors. Three rehearsal hours are held each week. More than three

absences from rehearsals, performances or public appearances during a semester will cancel the credit.

REQUIREMENTS FOR THE B.M. DEGREE

1. **The General Education requirements.**
2. **Major requirements.** Listed under the Department of Music in the Courses of Instruction section. A status sheet for every major will be provided listing specific course and hour requirements and should be maintained by the student; however, the *Bulletin* is the authoritative document regarding requirements. At least one-half of all hours required for the major must be earned at Grove City College. The major requirements determine the Major Quality Point Average (MQPA) calculation.
3. **Major-related requirements.** These courses, though required for the major, do not count toward the major QPA.
4. **Electives.** Sufficient elective hours to complete the total of 128 hours required for the degree. To take advantage of the benefits of a liberal education and avoid overly narrow specialization, a significant portion of these electives should be chosen from fields not directly related to the student's field of concentration.
5. **Chapel.** Chapel attendance is a requirement for graduation from Grove City College. Students are required to attend chapel sixteen times each semester.
6. **NOTE:** Minimum piano and vocal proficiency is required of all music majors. All Bachelor of Music candidates must have eight semester hours of applied music in voice or one instrument to complete requirements for their public senior recital.

CHANGING DEGREE PROGRAMS

A student may change to a different major or degree program, with the permission of the appropriate department chair, when space is available within that major or program. In some cases, the Dean of the appropriate school (Arts and Letters or Science, Engineering, and Mathematics) must also approve the change. Forms to change majors are available on the Registrar's web site. There is no fee for changing to a different major or degree program.

Any student changing from a program which does not require foreign language proficiency to one that does (i.e. all B.A. programs and non-science B.S. programs) will be required to demonstrate proficiency according to the guidelines regarding "Foreign Language" under "General Education Requirements."

DUAL DEGREE PROGRAM

A student may earn two degrees simultaneously from Grove City College in two different degree programs pending availability of space in the majors selected and by meeting the following requirements:

- At least 32 additional credit hours must be applied to the second degree beyond the 128 required for the first degree, with a minimum total of 160 hours earned.
- Majors must be completed in two different degree programs, e.g. Bachelor of Science/Bachelor of Arts (BS/BA), Bachelor of Science in Electrical Engineering/Bachelor of Arts (BSEE/BA), etc.
- Satisfy all requirements for both degrees, including general education and major requirements.
- Students must complete all requirements in force for the chosen majors at the time of matriculation to the College.
- Minimum career QPA required: 2.00.
- Minimum QPA in both majors: 2.00.
- Chapel requirement: No additional chapels are required.

- College and departmental honors will be recognized for both degrees since the full body of work is completed within the dual degree program.
- A student must notify the Registrar's Office in writing of his/her plan to pursue two degrees simultaneously, listing both degrees and majors, total credits earned to the current date, and intended date of completion of all requirements.

SECOND DEGREE PROGRAM

A student holding a baccalaureate degree from Grove City College or another accredited four-year college or university may earn a second baccalaureate degree in a different field. To earn a second baccalaureate degree, the student must:

- Have completed all requirements for the first baccalaureate degree.
- Satisfy all requirements for the second degree, including major and general education requirements.
- Students who have earned their first baccalaureate degree from Grove City College must earn a minimum of 32 credit hours at Grove City College beyond the 128 hours required for the first degree, with a minimum total of 160 hours earned and a minimum CQPA of 2.00.
- Students who have earned their first baccalaureate degree from another college must earn a minimum of 64 credit hours from Grove City College and a minimum total of 128 earned hours for their second baccalaureate degree. The Registrar's Office and the student's department chair will evaluate the student's transcript and determine transfer course equivalents.
- Majors must be completed in two different degree programs, e.g. Bachelor of Science/Bachelor of Arts (BS/BA), Bachelor of Science in Electrical Engineering/Bachelor of Arts (BSEE/BA), etc.
- A student must complete all requirements in force at the time of matriculation to the College for the start of the second degree program unless the student graduates from the College and returns within one year, he/she may then continue to follow the catalog requirements in force of his/her original undergraduate matriculation.
- Minimum career QPA required: 2.00.
- Minimum QPA in both majors: 2.00.
- No college or departmental honors or class ranking will be recognized for a second baccalaureate degree since students do not complete the full body of work within the second degree division.
- Any student who repeats an undergraduate course within his/her second degree program that counted toward the first degree may not count those hours toward completion of the second degree, however, any repeated hours earned will be included when calculating the second degree QPA.
- Students completing a second degree may participate in Commencement.

Students interested in pursuing a second degree should contact the Registrar's Office for information regarding program details and requirements.

MINORS

Minors are not required, but are available in Accounting, Analytics, Applied Sociology, Astronomy, Biblical and Religious Studies, Biology, Business, Chemical Engineering, Chemistry, Chinese, Christian Ministries, Classical Christian Education, Classical Studies, Communication Studies, Computer Game Design and Development, Computer Science, Creative Writing, Cybersecurity, Data Science, Design, Economics, English, Entrepreneurship, Exercise Science, Family Studies, Finance, French, High-Tech Entrepreneurship, History, International Business, International Studies, Internet

Entrepreneurship, Management, Marketing, Mathematics, Medical Physics, Mobile Development, Music, Musical Theatre, National Security Studies, Nutrition, Philosophy, Physics, Political Philosophy and Theology, Political Science, Pre-Law, Psychology, Robotics, Social Enterprise, Social Entrepreneurship, Social Innovation, Social Work, Spanish, Spanish for the Professions, Studio Art, Theatre, and Writing.

Students may fulfill the requirements of a minor, subject to availability of space in the classes. At least one-half of all hours required for the minor must be earned at Grove City College. The College cannot, however, assure students that they can in all instances complete a minor.

INTERDISCIPLINARY MAJOR

A student interested in pursuing an interdisciplinary major should discuss possible programs of study with his/her advisor and contact the Registrar's Office for the official guidelines and application form.

INTERSHIPS

Grove City College recognizes that an internship can be one of the more valuable experiences a student can have during his or her college career. Practical experience in the workplace is not only an education in itself; it is also increasingly demanded by potential employers in today's marketplace. Students need the opportunity to take advantage of the education, practical experience, and resume potential which only internships can provide. An extensive variety of internship opportunities, therefore, are provided across the curriculum, and all eligible students are encouraged to participate in them whenever possible. The total of all internship credits may not exceed six hours. Students must work a minimum of 60 hours for each credit earned, and some departments may require more for each credit. Students should contact the department coordinator for specific working hour requirements. Departmental internships are available for a wide variety of majors and are listed in the course descriptions under the number "480." The Washington Internship Program requirements are outlined below.

Internships must be approved and registered prior to the start of the experience. An Internship Fee will be charged for each internship experience on a per-semester basis. (See Expenses and Financial Aid) However, if the internship credit hours extend the total credit hours over 17, then no additional credit hour fee will be charged. The Washington Internship Program has a different fee structure which is outlined below.

While students may do internships purely for the purpose of gaining experience and not for academic credit, the College can certify only those internships done for academic credit under the established programs and guidelines. A maximum of six hours of internship credit may be used toward graduation requirements.

The College does not grant internship credit for any experience in which a student is paid by the federal government, for whatever reason. Conversely, if credit is granted by the College for an internship, then a federal stipend may not be accepted by the student. In no situation may a student accept federal money related to participation in an internship and receive academic credit, as this is prohibited by College policy.

WASHINGTON INTERNSHIP PROGRAM

The Grove City College Washington Internship Program provides students from any academic major practical experience working in Washington D.C. while earning credit for graduation. The program is available to qualified juniors and seniors and counts for twelve credit hours for either the fall or spring semester. A student may also earn up to three credit hours of independent study in the fall/spring concurrent with his/her Washington D.C. experience, but not as a substitute for an on-campus course offering.

Students enrolled in POLS 481 (Washington Internship) will be required to complete a major research paper and an Internship Folder. The paper should review professional literature appropriate to the intern's area of specialization and comment on the extent to which research activities undertaken on the job reflect the state of knowledge treated in this review. The Internship Folder comprises policy briefs of presentations made by speakers at seminars, public hearings, congressional meetings, White House announcements, and other official occasions in which public policy statements and discussions take place. At least fourteen policy briefs are assigned each semester. Interns maintain a log of activities at their place of work and retain copies of documents illustrating research efforts and other assignments requested by their supervisors.

The College does not grant internship credit for any experience in which a student is paid by the federal government, for whatever reason. Conversely, if credit is granted by the College for an internship, then a federal stipend may not be accepted by the student. In no situation may a student accept federal money related to participation in an internship and receive academic credit, as this is prohibited by College policy.

Tuition during the fall and spring semesters is the same as that charged for a full-time semester of study at Grove City College. Interns are responsible for securing their own housing in Washington D.C., and costs may vary. All inquiries about application forms, deadlines, letters of recommendation, and other matters related to this program should be directed to the Political Science Department Chair.

INTERNATIONAL EDUCATION

Study abroad is available to qualified students from any academic major in summer, semester, and year-long formats. Grove City College students may enroll in programs offered abroad in English or in another language, and may, with prior approval, apply courses completed abroad to specific on-campus requirements for their majors.

Grove City College accepts transfer credits directly from well-established foreign universities or colleges where the student will be taught in a classroom setting for the duration of the semester abroad. If the study abroad program is not affiliated with a well-established foreign university or college, the program must be sponsored by a regionally accredited U.S. college or university, and the student will be required to submit an official transcript from the sponsoring U.S. institution. Transcripts from the study abroad program itself will not be accepted for granting credit. Credit will not be accepted for any study abroad program that is not affiliated with a well-established foreign university and/or a sponsoring U.S. regionally accredited college or university.

Selection of a program and of specific courses takes place in consultation with the department chair of the student's major, the Director of the Office of International Education, and the Registrar. There is a Study Abroad Fee for this program, applicable only to semester or year-long study abroad experiences. This fee is not charged to students studying abroad for intercession or summer terms. All inquiries regarding program options, transfer of credits, application forms, deadlines, letters of recommendation and other matters related to study abroad should be directed to the Office of International Education.

Students who have applied for and been awarded Grove City College financial aid for the academic year in which they are studying abroad, including all College-provided merit and need-based awards, will continue to receive that award during the semester(s) when they participate in a full-time study-abroad program which has been approved by the Registrar. The criteria for receiving financial aid will be the same as for on-campus study.

MEDICAL OPTION PLAN

Under certain conditions Grove City College will waive the senior year in residence and may approve the transfer of the first year of graduate courses from an accredited medical

school toward the baccalaureate degree. Students considering this option must petition the faculty for approval and must meet the following provisions:

- During residence at Grove City College, the student must attain a career quality point average of 3.00 or higher and have earned no less than ninety-six semester hours of credit.
- Academic credits earned must include all specific general education and major requirements for the degree.
- Certification of the successful completion of the first year's work in the professional school must be presented for approval and evaluation before the baccalaureate degree may be conferred.
- Students who do not complete their approved first-year medical school courses may petition the faculty of Grove City College for the awarding of the baccalaureate degree at the time the professional diploma is awarded.
- Students will not be considered enrolled at Grove City College and will be subject to all policies governing withdrawal from the College. Therefore, participating in the Medical Option Plan will affect the student's enrollment status, financial aid and retention of the College-issued computer system.

Students interested in pursuing this option should contact the Registrar's Office for information regarding program details and requirements.

Grove City College does not accept any funds that derive in any part, directly or indirectly, from federal sources (including scholarship or loan funds). Students who receive any federal financial assistance during their first year of a graduate program will be ineligible to receive credit from Grove City College, and thus ineligible to continue in the Medical Option Plan.

ADULT EDUCATION

Adults living in the local community may attend a class for no credit during a semester for a small fee, pending consent of the professor and seat availability in the classroom. Grove City College will maintain a permanent record of enrollment for participants, but no grade or credit will be recorded by the Registrar.



Courses of Instruction

ACADEMIC SCHOOLS The academic programs at Grove City College are divided into two schools – the *Alva J. Calderwood School of Arts and Letters* and the *Albert A. Hopeman, Jr., School of Science, Engineering, and Mathematics*. These two schools encompass all departments of instruction and provide students with a choice of numerous majors, minors, certifications, concentrations, and pre-professional programs.

Alva J. Calderwood School of Arts and Letters

Dr. David J. Ayers, Dean; Dr. Paul C. Kemeny, Assistant Dean; Dr. Michelle R. McFeaters, Assistant Dean; Dr. Jennifer A. Mobley, Assistant Dean; Dr. Gary L. Welton, Assistant Dean.

Alva J. Calderwood grew up on a farm outside of New Bedford, Pennsylvania, and was tending the crops one day when a journeyman teacher by the name of Dr. Isaac Ketter visited his home in search of students to enroll in the newly-formed Grove City College. Dr. Calderwood subsequently enrolled and graduated from the College in 1896, continued his education at Harvard, and earned both a Master of Arts and a Doctor of Philosophy degree. He eventually returned to his alma mater and served as a professor for 53 years and as Dean of the College for 35 years. He was honored for his many years of outstanding service when Calderwood Hall, erected in 1956, was named for him. Calderwood Hall was torn down in February 2003 and replaced by the new Hall of Arts and Letters, and in November 2002, the Alva J. Calderwood School of Arts and Letters was named in his honor.



Alva J. Calderwood
1873-1949

The *Alva J. Calderwood School of Arts and Letters* is comprised of the Departments of Accounting and Finance; Biblical and Religious Studies and Philosophy; Communication and Visual Arts; Economics and Sociology; Education; English; Entrepreneurship; History; Management and Marketing; Modern Languages; Music; Political Science; and Psychology and Social Work.

Albert A. Hopeman, Jr. School of Science, Engineering, and Mathematics

Dr. Timothy A. Mohr, Interim Dean; Dr. Kristina O. Pazehoski, Interim Assistant Dean.



Albert A. Hopeman, Jr.
1911-1998

Albert A. Hopeman, Jr. became the fifth president of the Grove City College Board of Trustees in 1972, joining the Board in 1953 and serving till his death in 1998. He was a firm advocate of excellent education in a Christian environment at a low cost. He led the College during the years of the well-known 1984 U.S. Supreme Court case *Grove City College vs. T. H. Bell, Secretary of the U.S. Department of Education*, which resulted in Grove City College's withdrawal from the federal Pell Grant program. Grove City College also withdrew from federal student loan programs in 1996 and developed a competitive private student loan program under his leadership. The School of Science, Engineering, and Mathematics was named in his honor in May of 1997.

The *Albert A. Hopeman, Jr. School of Science, Engineering, and Mathematics* is comprised of the Departments of Biology; Chemistry; Computer Science; Engineering; Exercise Science; Mathematics; and Physics.

The following sections are arranged in alphabetical order by department and include the requirements for each major, course descriptions, and all faculty members within each department.

DEPARTMENT OF BIBLICAL AND RELIGIOUS STUDIES AND PHILOSOPHY

Dr. Byun, Chair; Dr. Campbell, Assistant Chair; Dr. Bibza, Dr. Franklin, Dr. Gordon, Dr. Kemeny, Dr. Moeller, Dr. C. R. Rine, Dr. Robbins, Dr. Schaefer, Dr. Shepson, Dr. Trueman, Dr. West. Additional Instructional Faculty: Dr. Thrasher.

Course Requirements for Bachelor of Arts Degree in Biblical and Religious Studies (BIBL)—36 hours

Core Requirements (15 hours)

Religion 211*, 212*, 213, 214, and 488.

* Students who have already completed HUMA 102 may substitute one RELI 237 and one RELI 238 for these courses.

Biblical Studies electives (12 hours)

Choose four courses from: Greek 202; Hebrew 202; Religion 221, 232, 235, 237, 238, 325, or 351. Religion 390 “Travel-Israel” may also count as a Biblical studies elective. Students may complete RELI 237 and RELI 238 more than once, choosing a different topic each time.

Historical, Theological and Philosophical electives (9 hours)

Choose three courses from: History 341, 349; Philosophy 251, 256, 271, 314, 336; Religion 220, 247, 248, 261, 320, 330, 341, 342, 343, 345, 362 or 450. Religion 360 “Perspectives on the Christian World Movement” and Religion 390 “Travel-Reformation” may also count as one of these electives. At least one elective course must be a Religion course.

Courses that count in the BIBL major quality point average (MQPA):

All courses with “RELI” prefix, GREK 202; HEBR 202; HIST 341,349; PHIL 251, 256, 271, 314, and 336. A minimum MQPA of 2.00 is required to graduate.

The Department intends that Biblical and Religious Studies majors develop information literacy as well as speaking and writing skills be best prepared for graduate school and/or a vocation. To this end, all Biblical and Religious Studies majors will take Religion 488 *Senior Seminar* during their senior year as a Writing Intensive (WI), Speaking Intensive (SI), and Information Literacy (IL) course. This course is designed to help gain proficiency in research as well as clear and well-supported written and oral communication.

The Department offers courses in New Testament Greek and Biblical Hebrew. These courses may partially fulfill the College’s foreign language requirement. See the General Education and Degree Programs section for details.

Course Requirements for Bachelor of Arts Degree in Christian Ministries (CHRM)—42 hours

Core Requirements (18 hours)

Religion 211*, 212*, 216, 330, 480, and 488.

* Students who have already completed HUMA 102 may substitute one RELI 237 and one RELI 238 for these courses.

Ministry electives (15 hours)

Choose five courses from: Entrepreneurship 314; Philosophy 251; Religion 246, 247, 248, 251, 253, 290 (Evangelism and Discipleship), 290 (Sermons: Christian Preaching Through the Centuries), 290 (Understanding and Teaching the Bible), 320, 326, 390 (Biblical Counseling), or 450.

Biblical, Historical, and Theological electives (9 hours)

Choose three courses from: Religion 213, 214, 221, 232, 235, 237, 238, 261, 342, 351, or 362. Students may complete Religion 237 and 238 more than once, choosing a different topic each time.

Courses that count in the CHRМ major quality point average (MQPA):

All courses with “RELI” prefix; ENTR 314; and PHIL 251. A minimum MQPA of 2.00 is required to graduate.

The Department desires that Christian Ministries majors receive some practical field experience in ministry during their four years of academic instruction and practical training at Grove City College. To this end, all Christian Ministries majors must complete a three-credit Ministry Internship (RELI 480) during their time at Grove City, some completing the Internship during the summers and others during a fall or spring semester. While students must complete three credit hours of RELI 480 Ministry Internship as part of their Christian Ministries major, students may complete three additional hours of Internship as part of the 128 hours needed to graduate from Grove City College (up to six hours of Internship total). Students should consult with their academic advisor, as well as Dr. Stringer, the department internship coordinator, for more information on Internship requirements.

The Department intends that Christian Ministries majors develop information literacy as well as speaking and writing skills in order to be best prepared for a vocation in professional ministry and/or graduate school. To this end, all Christian Ministries Majors will take Religion 488 *Senior Seminar* during their senior year as a Writing Intensive (WI), Speaking Intensive (SI), and Information Literacy (IL) course. This course is designed to help gain proficiency in research as well as clear and well-supported written and oral communication for both academic and practical ministry application.

Course Requirements for Bachelor of Arts Degree in Philosophy (PHIL)—33 hours

Core Requirements: (30 hours)

Philosophy 161 or 191, 201 or 211, 301, 302, 303, 311, 312, 313, 314, and 488.

Major Electives: (3 hours) Choose one course from:

Philosophy 201, 211, 243, 256, 271, 290, 340, 390, 470, Political Science 205, 355, 356, or Religion 261. Note: One of Philosophy 201 or 211 may be used to fulfill the Major Elective. The other may fulfil the Core Requirement.

Courses that count in the PHIL major quality point average (MQPA):

All courses with “PHIL” prefix, POLS 205, POLS 355, POLS 356, and RELI 261. A minimum MQPA of 2.00 is required to graduate.

Developing information literacy and writing skills in the study of Philosophy involves gaining proficiency in doing research in great philosophical thinkers and ideas sufficient for the writing of clear, well-supported research and critical analysis papers in the major. Professional speaking skills are also essential in preparing Philosophy students for graduate school and/or a career. To this end, the required course Philosophy 380 *Current Problems in Philosophy* will be designated as the Writing Intensive (WI), Speaking Intensive (SI), and Information Literacy (IL) course.

Course Requirements for a minor in Biblical and Religious Studies (18 hours)

A minor in Biblical and Religious Studies will consist of any eighteen hours of Religion, Greek and/or Hebrew courses.

Course Requirements for a minor in Christian Ministries (24 hours)

Taken in conjunction with any major, the Christian Ministries minor aims to help students prepare for vocational opportunities oriented toward "people-service." The Christian Ministries plan can accompany any college major and requires a specialized group of Christian Ministries courses in addition to those courses required for the major which the student chooses.

Core Requirements: Religion 211, 212, 216, and 480.

Biblical Elective: One course from Religion 221, 232, 235, 237, 325, 351, or 390.

Ministry Electives: Two courses from Religion 246, 251, 253, 320, or 330. Religion 290 "Evangelism and Discipleship", 290 "Sermons: Christian Preaching Through the Centuries", 290 "Understanding and Teaching the Bible", and 360 "Perspectives on the Christian World Movement" may also be used as ministry electives.

Historical Elective: One course from Religion 247, 248, 341, or 342.

Course Requirements for a minor in Classical Studies (21 hours)

A minor in Classical Studies will consist of 21 hours. Students must take one relevant (three credit) course from three of the following eleven categories: 1) Anthropology, 2) Art, 3) Biblical & Religious Studies, 4) Classical Christian Education, 5) Greek, 6) History, 7) Latin, 8) Literature, 9) Philosophy, 10) Political Science, and 11) Rhetoric (see course categories below). The remaining 12 credits will come from the student's choice of electives from other courses in these categories. Courses within the eleven Classical Studies minor categories include:

1. *Anthropology:* Sociology 103
2. *Art:* Art 201
3. *Biblical & Religious Studies:* Religion 211, 212
4. *Classical Christian Education:* History 204, 410
5. *Greek:* Greek 101, 102, 201, 202, Higher level Independent Studies available
6. *History:* History 207, 208, 341, 346, 376
7. *Latin:* Latin 101, 102, 201, 202, 209
8. *Literature:* English 302
9. *Philosophy:* Philosophy 334, 336
10. *Political Science:* Political Science 355
11. *Rhetoric:* Communication Studies 207, 427

Course Requirements for a minor in Classical Christian Education (23 hours)

A minor in Classical Christian Education will consist of 23 hours, 21 hours as required by the Classical Studies minor, plus a two-hour internship explained below. As part of the 21-hour requirement, students pursuing this minor must take History 204, 208, and 410. Students pursuing this minor must also take an Internship in Classical Christian Education receiving two elective credits by registering for Religion 480 Internship in Religion.

Course Requirements for a minor in Philosophy (18 hours)

A minor in Philosophy will consist of Philosophy 161 or 191, Philosophy 201 or 211, and twelve additional hours of Philosophy courses. A maximum of three credits of independent study in Philosophy may count toward the minor. Political Science 205 may also count toward this minor.

Course Requirements for a minor in Political Philosophy and Theology (18 hours)

A minor in Political Philosophy and Theology will consist of Philosophy 355, 356; and 12 hours from Philosophy 191, 314, 340, 380, Political Science 350, 354, 357, or Religion 362.

Pre-Theological Concentration

Pre-theological students should plan their program with the help of the Chair of the Department of Biblical and Religious Studies and Philosophy.

Students are expected to contact their advisors for a detailed schedule of courses recommended to meet requirements for a major.

RELIGION (RELI)

RELI 211. OLD TESTAMENT LITERATURE AND HISTORY. An introduction to the literature, content, and history of the Old Testament. Special attention is given to the historical background, composition, and theological message of the Old Testament. The course further acquaints students with the basic methods of Old Testament studies and the present state of Old Testament research.

Semester course, three hours.

RELI 212. NEW TESTAMENT LITERATURE AND HISTORY. An introduction to the literature, content, and history of the New Testament. Special attention is given to the historical background, composition, and theological message of the New Testament. The course further acquaints students with the basic methods of New Testament studies and the present state of New Testament research. This course contains the second component of the general education Information Literacy (IL) requirement for students substituting Religion 211 and 212 for the Humanities 102 requirement.

Semester course, three hours.

RELI 213. SYSTEMATIC THEOLOGY I. An introduction to the methods of systematic theology in terms of narrative, covenant, and creed. From this, these central doctrines of historic Christianity will be examined: Revelation and Scripture, the Being and Attributes of God, Humanity before God, and the Person and Work of Christ.

Alternate years, fall semester only, three hours.

RELI 214. SYSTEMATIC THEOLOGY II. A continuation of an examination of the central doctrines of historic Christianity. These doctrines comprise the focus for Systematic Theology II: The Person and Work of the Holy Spirit, the Christian Life, the Church and Sacraments, and the Last Things. Religion 213 is not a prerequisite for Religion 214.

Alternate years, spring semester only, three hours.

RELI 216. INTRODUCTION TO CHRISTIAN MINISTRY. This course exposes students to basic issues, concepts, approaches, and organizations involved in Christian ministry. It covers topics such as leadership, discipleship, evangelism, and pastoral ministry.

Semester course, three hours.

RELI 220. CHRISTIANITY AND THE FUNDAMENTAL QUESTIONS OF LIFE. The course concerns some of the fundamental questions such as: What is a good person? What is a good life? What is a good society? What is/are the human problem(s)? How do we understand human nature? What is the Christian view of justice, right and wrong, good and evil? Not all of these questions will be addressed in every class. Answers to these questions will involve a study of the Christian tradition of politics, including the Bible and contemporary interpreters, although not all of these sources will be utilized in every class.

Alternate years, semester course, three hours.

RELI 221. THE LIFE OF CHRIST. This course aims to give the student a good understanding of the person, work, and teachings of Christ as presented in the Gospels. It also seeks to introduce the student to some of the important literature on the subject.

Alternate years, semester course, three hours.

RELI 232. THE LIFE AND WORK OF PAUL. A study of the life and work of the apostle Paul, author of almost one-half of the New Testament. Attention is given to both the descriptive material in the book of Acts and the thematic material from the Pauline Epistles. Students are introduced to current issues in the study of Paul. *Alternate years, semester course, three hours.*

RELI 235. BIBLICAL IDEAS. This course will draw together Biblical, systematic, and pastoral/practical theological styles and methods. In doing so, the class will expose students to some of the great concepts of the Bible such as the fear of the Lord, the call to care for the elderly, fasting, tithing and the Sabbath. Along with this, the class will equip students with basic Biblical studies skills needed for their own continuing theological reflection in the years to come. Prerequisites: One of Humanities 102 or Religion 211 and 212. *Alternate years, semester course, three hours.*

RELI 237. OLD TESTAMENT BIBLICAL BOOKS. This course will examine the genre, themes, theology, and practical application of one Old Testament book. The Old Testament book studied will differ each semester. *Semester course, three hours.*

RELI 238. NEW TESTAMENT BIBLICAL BOOKS. This course will examine the genre, themes, theology, and practical application of one New Testament book. The New Testament book studied will differ each semester. *Semester course, three hours.*

RELI 246. CHRISTIAN EDUCATION FOR YOUTH AND ADULTS. This course intends to aid persons who plan to lead youth and adults in the Christian education environment. It will include a consideration of objectives; of historical, theological, and psychological background of methods and programming resources; and of techniques for outreach. *Alternate years, semester course, three hours.*

RELI 247. CONTEMPORARY AMERICAN RELIGION. This course seeks to examine and explore the prominent place of religion in this religiously pluralistic nation by describing and analyzing current American religious developments in historical, sociological, and theological perspective. Institutional and non-institutional developments within and outside the Judeo-Christian tradition will also be examined. *Alternate years, semester course, three hours.*

RELI 248. WORLD RELIGIONS. An introduction to the major living religions, to the leading problems of religious thought, and to the alternative approaches of world religions to ultimate questions concerning the meaning of human life. *Semester course, three hours.*

RELI 251. LEADERSHIP IN CHRISTIAN MINISTRIES. This course concentrates on the leadership, organization and administration of the programs and activities of the local church and the many "parachurch" organizations. Sound principles or servant leadership are emphasized in a context of biblical teaching. *Alternate years, semester course, three hours.*

RELI 253. PHILOSOPHY OF MINISTRY. Scripture, history, culture, and sociology play significant roles in the formulation of a philosophy of ministry. This course seeks to help the student understand how these factors affect the various fields of ministry. *Alternate years, semester course, three hours.*

RELI 255. DEFENDING THE FAITH. This course will investigate evidential, presupposition, postmodern, and other approaches to apologetics. The emphasis will be on the epistemological stance one should take in apologetic encounters. A portion of this course will focus on responses to various objections and concerns that one is likely to face in apologetic encounters. *Semester course, three hours.*

RELI 260. INDEPENDENT STUDY. Individual study of specialized topics in religion. Sophomore standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

RELI 261. C.S. LEWIS: CHRISTIAN APOLOGIST. A study of one of contemporary Christianity's greatest apologists. The primary subject of study is Lewis' unique contributions to apologetics including his epistemology, view of myth, and defense of supernaturalism. Various examples of Lewis' writings are examined from selected essays and theological articles and the *Chronicles of Narnia*.
Semester course, three hours.

RELI 270. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in religion. Sophomore standing, permission of the department chair, and a faculty sponsor are required.
Semester course, one, two or three hours.

RELI 290. STUDIES IN RELIGION. The subject matter for this course will vary each semester to allow for the introduction of new courses in the field of religion. The aim of such a course is in-depth study of some specific facet of religion with particular emphasis on the relationship of religion and contemporary life.
Semester course, three hours.

RELI 320. THEOLOGY OF MISSIONS. A survey of the greatest evangelistic and mission movements in history, the Biblical-theological basis for missions, and contemporary developments in mission strategy.
Alternate years, semester course, three hours.

RELI 325. BIBLICAL THEOLOGY OF WORSHIP. This course will discuss the sacred places, people, offerings and festivals of the Old Testament and their relation to the New. The class traces the redemptive-historical development of forms of worship from the Garden of Eden to the exilic period and beyond into the New Testament. The focus of the course will be primarily exegetical, interacting with the Biblical materials rather than with historical-critical approaches. The goal of the course is to form a solid Biblical basis from which to address the issues of worship which face the contemporary church.
Alternate years, semester course, three hours.

RELI 330. THEOLOGY OF THE SPIRITUAL LIFE. This course examines writings on spiritual formation from an historical, theological, and Biblical perspective. Key topics include the holiness of God, the person and work of the Holy Spirit, prayer, Bible Study, and the discernment of God's will.
Semester course, three hours.

RELI 341. CHRISTENDOM AND REFORM. A study of the history of Christianity from the time of Charlemagne until the end of the Religious Wars in 1648, this course will explore Christianity throughout the Medieval Period, as tensions and then schism arose between the Greek and Latin Churches, and then go into the Reformation era with its various callings for reform of the Western Church. Emphasis will be placed on important persons and ideas, movements of significance, and the relationship of the Christian mission to surrounding culture. This is the second of a three-part series on *The History of Christianity*, the other two being History 341 *The Rise of Christianity* and Religion 342 *Christianity and the Modern World*. These courses may be taken in any order; there are no prerequisites.
Alternate years, semester course, three hours.

RELI 342. CHRISTIANITY AND THE MODERN WORLD. A study of the history of Christianity from the beginning of the Enlightenment until the end of the 20th century, this course will explore Christian history in a time of rapid cultural changes enhanced by new thinking about philosophy, society, politics, economics, and science. Questions of how and why Christian churches, as well as Christian thinkers, adapted, fought, or sought some rapprochement with a continued commitment to some form of classic orthodoxy will be examined as the Christian mission continued to seek to reach the surrounding culture. This is the third of a three-part series on *The History of Christianity*, the other two being History 341 *The Rise of Christianity* and Religion 341 *Christendom and Reform*. These courses may be taken in any order; there are no prerequisites.
Alternate years, semester course, three hours.

RELI 343. RELIGION AND HISTORY IN COLONIAL AMERICA. Beginning in the British North American colonies in the seventeenth century and continuing to the outbreak of the American War of Independence, this course explores the changing nature and role of religion in American public life by the different colonial settlers. In this, the course examines efforts by Colonial Americans to

shape culture and society in accordance with their understanding of the Gospel as well as ways in which cultural, social, political, and economic issues of the time in turn helped shape their divergent responses to public issues.

Alternate years, semester course, three hours.

RELI 345. LUTHER AND CALVIN. This course focuses on the Reformation leaders whose work and ideas shaped Protestantism. Primary sources will be used.

Alternate years, semester course, three hours.

RELI 351. HERMENEUTICS. A study of central issues of Biblical interpretation that bear directly on current concerns of human existence. This course examines the import and implications of the Biblical literature.

Alternate years, semester course, three hours.

RELI 360. INDEPENDENT STUDY. An opportunity for junior and senior students with previous background in religion to do intensive independent study of specialized topics. Prerequisites: Twelve hours of religion coursework, permission of the department chair, and a faculty sponsor.

Semester course, one to three hours.

RELI 362. CONTEMPORARY THEOLOGY. A study of major themes in contemporary theology including such topics as religious language, views of God, meaning of man and redemption, and the problem of evil. These topics are discussed as they relate to contemporary cultures and worldviews.

Alternate years, semester course, three hours.

RELI 370. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in religion. Junior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

RELI 390. ADVANCED STUDIES IN RELIGION. The subject matter for this course will vary each semester to allow for the introduction of new courses in the field of religion. The aim of such courses is in-depth study of some specific facet of religion with particular emphasis on the relationship of religion and contemporary life.

Semester course, three hours.

RELI 450. CHRIST AND THE MEDIA. This course provides an historical survey and a Biblical-Theistic interaction with how human media shape the social environment and structure human thought. Taught as a seminar, students read and discuss Plato, Ong, Postman, McLuhan, and others who have contributed to understanding of orality, literacy, image, and electronic media.

Fall semester only, three hours.

RELI 460. INDEPENDENT STUDY. An opportunity for junior and senior students with previous background in religion to do intensive independent study of specialized topics. Prerequisites: Twelve hours of religion coursework, permission of the department chair, and a faculty sponsor.

Semester course, one to three hours.

RELI 470. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in religion. Senior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

RELI 480. INTERNSHIP IN RELIGION. This course offers practical experience appropriate for the Christian Ministries auxiliary field. Prerequisites: Consent of the department chair.

Semester course, one to six hours.

RELI 488. SENIOR SEMINAR. This course satisfies the Writing Intensive (WI), Speaking Intensive (SI), Information Literacy (IL) requirements for the Biblical and Religious Studies major, and will be taken in the fall of the senior year. Topics will focus on a major issue in biblical studies, church history, or systematic theology.

Fall semester only, three hours.

RELI 499. HONORS COURSE IN RELIGION. Advanced research in Biblical and Religious Studies is available to students on an individual basis and by prearrangement with the department.

Semester course, one, two or three hours.

GREEK (GREK)

GREK 101. INTRODUCTION TO NEW TESTAMENT GREEK I. A study of the grammar and syntax of New Testament Greek. *Fall semester only, three hours.*

GREK 102. INTRODUCTION TO NEW TESTAMENT GREEK II. Continuation of Greek 101. Prerequisite: Greek 101 or permission of the instructor. *Spring semester only, three hours.*

GREK 201. READINGS IN NEW TESTAMENT GREEK I. Portions of the Gospels will be read. Vocabulary, grammar, and syntax are reviewed. Prerequisites: Greek 101 and 102; or permission of the instructor. *Fall semester only, three hours.*

GREK 202. READINGS IN NEW TESTAMENT GREEK II. Portions of the Pauline Epistles will be read. Vocabulary, grammar, and syntax are reviewed. Prerequisites: Greek 101, 102, and 201; or permission of the instructor. *Spring semester only, three hours.*

GREK 260. INDEPENDENT STUDY. Individual study of specialized topics in Greek. Sophomore standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

GREK 270. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in Greek. Sophomore standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

GREK 360. INDEPENDENT STUDY. An opportunity for third and fourth-year students to do independent projects in basic New Testament exegesis, word study, or classical Greek. Prerequisites: Greek 201 and 202; or consent of instructor. *Semester course, two or three hours.*

GREK 370. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in Greek. Junior standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

GREK 460. INDEPENDENT STUDY. An opportunity for third and fourth-year students to do independent projects in basic New Testament exegesis, word study, or classical Greek. Prerequisites: Greek 201 and 202, permission of the department chair, and a faculty sponsor are required. *Semester course, two or three hours.*

GREK 470. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in Greek. Senior standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

HEBREW (HEBR)

HEBR 101. INTRODUCTION TO BIBLICAL HEBREW I. A study of the grammar and syntax of the Hebrew Bible. *Fall semester only, three hours.*

HEBR 102. INTRODUCTION TO BIBLICAL HEBREW II. Continuation of Hebrew 101. Prerequisite: Hebrew 101 or permission of the instructor. *Spring semester only, three hours.*

HEBR 201. READINGS IN BIBLICAL HEBREW I. Portions of Narrative Literature will be read. Vocabulary, grammar, and syntax are reviewed. Prerequisites: Hebrew 101 and 102; or permission of the instructor. *Fall semester only, three hours.*

HEBR 202. READINGS IN BIBLICAL HEBREW II. Portions of the Prophets will be read. Vocabulary, grammar, and syntax are reviewed. Prerequisites: Hebrew 101, 102, and 201; or permission of the instructor. *Spring semester only, three hours.*

HEBR 260. INDEPENDENT STUDY. Individual study of specialized topics in Hebrew. Sophomore standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

HEBR 270. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in Hebrew. Sophomore standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

HEBR 360. INDEPENDENT STUDY. An opportunity for third and fourth year Hebrew students to do independent projects in basic Old Testament exegesis. Prerequisite: Hebrew 201 and 202; or permission of the instructor.

Semester course, two or three hours.

HEBR 370. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in Hebrew. Junior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

HEBR 460. INDEPENDENT STUDY. An opportunity for third and fourth year Hebrew students to do independent projects in basic Old Testament exegesis. Prerequisite: Hebrew 201 and 202; or permission of the instructor.

Semester course, two or three hours.

HEBR 470. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in Hebrew. Senior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

LATIN (LATN)

LATN 101. ELEMENTARY LATIN I. This is the beginning course of the elementary Classical Latin sequence. It assumes no previous knowledge of Latin. Students cover the fundamentals of Latin grammar and syntax while building a basic vocabulary. They will begin to read Latin in sentences and edited short selections.

Offered infrequently, semester course, three hours.

LATN 102. ELEMENTARY LATIN II. This course continues the study of Classical Latin grammar and syntax while continuing to build an extensive Latin vocabulary. It emphasizes the student's ability to read basic unedited Latin prose and poetry.

Offered infrequently, semester course, three hours.

LATN 201. INTERMEDIATE LATIN I. This course is designed to increase the student's facility in reading Latin prose and poetry from various eras—the Republic, the Empire and Late Antiquity. Strong emphasis is placed on accuracy and efficiency in translation.

Offered infrequently, semester course, three hours.

LATN 202. INTERMEDIATE LATIN II. Further study of Latin prose and poetry to develop proficiency in reading and translating Latin. The focus will be on extensive readings from select Latin authors from antiquity and the Middle Ages.

Offered infrequently, semester course, three hours.

LATN 260. INDEPENDENT STUDY. Individual study of specialized topics in Latin. Sophomore standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

LATN 290. STUDIES IN LATIN. Readings and discussion of topics in literature or language. Subject matter varies.

Offered periodically, semester course, three hours.

LATN 360. INDEPENDENT STUDY. An opportunity for third and fourth year students to do independent projects in Latin. Prerequisite: Latin 201 and 202; or permission of the instructor.

Semester course, two or three hours.

LATN 460. INDEPENDENT STUDY. An opportunity for third and fourth year students to do independent projects in Latin. Prerequisite: Latin 201 and 202; or permission of the instructor.
Semester course, two or three hours

PHILOSOPHY (PHIL)

PHIL 161. INTRODUCTION TO PHILOSOPHY. A course designed to acquaint the student with the various fields and problems of philosophy. Primary sources are used.
Semester course, three hours.

PHIL 191. INTRODUCTION TO ETHICS. An introductory study of philosophical issues related to the moral life, such as: What should we love? How should we treat each other, and why? What does it mean to be a good person, and how might we become better people? and What is human life about, ultimately? Attention will be given to the insights of principle figures in the history of ethics from the ancient period to the present.
Semester course, three hours.

PHIL 201. SYMBOLIC LOGIC. A study of formal deductive logic with emphasis on testing arguments for validity and translating English statements into symbolic notation.
Semester course, three hours.

PHIL 211. GENERAL LOGIC. A study of reasoning in a variety of contexts. Attention is given to both inductive and deductive arguments. Many kinds of fallacies are studied as well as traditional syllogisms and logical puzzles. Diagramming techniques are developed.
Semester course, three hours.

PHIL 243. SCIENCE AND THE HUMAN: INQUIRY, DESIGN AND THE PERSON. This course will examine historical and contemporary discussions of the nature of scientific inquiry and scientific knowledge, and related questions in the philosophy of science. It will also examine philosophical issues connected with design in nature, origins, and current technological development. Prerequisites: Humanities 102 (or Religion 211 and 212) and a lab science. The lab science may be taken concurrently with this course. This course satisfies the College's SSFT General Education requirement.
Semester course, three hours.

PHIL 256. GOD, SUFFERING, AND NARRATIVE. A philosophical investigation into the problem of suffering-the problem of reconciling an all-powerful, all-knowing, and perfectly good God with the existence of horrendous evils-with a focus on understanding the differences between argument and narrative as sources of knowledge, the varieties of knowledge, the nature of God and evil, union with God, the relationship between love and the will, the fragmentation of the human self, and the biblical narratives of Abraham and Job. Other works of literature may be used.
Alternate years, semester course, three hours.

PHIL 260. INDEPENDENT STUDY. Individual study of specialized topics in philosophy. Sophomore standing, permission of the department chair, and a faculty sponsor are required.
Semester course, one, two or three hours.

PHIL 270. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in philosophy. Sophomore standing, permission of the department chair, and a faculty sponsor are required.
Semester course, one, two or three hours.

PHIL 271. BIO-MEDICAL ETHICS. An introduction to the ethical issues arising in the field of biomedicine. Topics covered include issues such as abortion, eugenics, euthanasia, organ transplantation, behavior control, the right of a patient to refuse treatment, etc. Sophomore, junior, or senior standing is required.
Semester course, three hours.

PHIL 290. STUDIES IN PHILOSOPHY. The subject matter for this course will vary each semester to allow for the introduction of new courses in the field of philosophy. *Semester course, three hours.*

PHIL 301. ANCIENT PHILOSOPHY. A survey of Western philosophy from the early Greeks through the beginning of the Christian era. Special attention will be given to the philosophies of Plato and Aristotle. Primary sources are used. *Alternate years, semester course, three hours.*

PHIL 302. MEDIEVAL PHILOSOPHY. A study of the thought of prominent philosophers from St. Augustine to Ockham, addressing issues such as the nature and existence of God, theories of the good life, and the project of synthesizing Christianity with pagan philosophy. Primary sources are used. *Alternate years, semester course, three hours.*

PHIL 303. MODERN PHILOSOPHY. A survey of Western philosophy from Descartes through Kant, addressing issues pertaining to epistemology (especially the problems of certainty, philosophical methodology, and knowledge of God), and metaphysics (especially the nature of God, free will, and the immortality of the soul). Primary sources are used. *Alternate years, semester course, three hours.*

PHIL 311. METAPHYSICS. Metaphysics examines such basic questions as “What is real?” “What is the nature of basic reality?” and “What is the nature of human beings?” This course will examine some influential discussions of metaphysics arising from these basic questions. Some topics we may discuss include the nature of identity, the relationship between mind and body, free will, and other topics that arise in answering basic metaphysical questions. *Semester course, three hours.*

PHIL 312. EPISTEMOLOGY. Epistemology is the study of the nature and limits of human knowledge, understanding and rationality. Questions covered in this course may include “What is knowledge?” “What gives a person a good reason for his/her beliefs?” “What are the limits of human understanding and rationality?” and “What does it mean to achieve excellence in intellectual pursuits?” *Semester course, three hours.*

PHIL 313. ETHICS. The central question of ethics is “How should we live?” This course examines several theories concerning the norms governing human life. Topics may include the nature of happiness, the role of virtue in a life well lived, the relationship between moral rules and right action, the functions of reason and the passions in practical rationality, and more. *Alternate years, semester course, three hours.*

PHIL 314. PHILOSOPHY OF RELIGION. A sustained philosophical reflection on the nature and existence of God, addressing questions such as the rationality of belief in God, the role of evidence in religious belief, the problem of evil, the moral and cognitive significance of religious experience, and the relationship between God and morality. *Alternate years, semester course, three hours.*

PHIL 340. PHILOSOPHY OF LAW. This course commonly examines such topics as the nature of law, the relationship of law to morality, the problem of judicial interpretation, justice, and rights. *Alternate years, semester course, three hours.*

PHIL 360. INDEPENDENT STUDY. An opportunity for sophomore and junior students with previous background in philosophy to do intensive independent study of specialized topics. Junior standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two, or three hours.*

PHIL 370. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in philosophy. Junior standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

PHIL 390. ADVANCED STUDIES IN PHILOSOPHY. The subject matter for this course will vary each semester to allow for the introduction of new courses in the field of philosophy. *Semester course, three hours.*

PHIL 460. INDEPENDENT STUDY. An opportunity for junior and senior students with previous background in philosophy to do intensive independent study of specialized topics. Prerequisite: Twelve hours of philosophy coursework, permission of the department chair, and a faculty sponsor.

Semester course, three hours.

PHIL 470. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in philosophy. Senior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

PHIL 488. PHILOSOPHY SEMINAR. This course is taught in a seminar style with student-led discussions, a focus on close readings of philosophical works, and a major research project. The course may be repeated, as topics covered vary by semester. This course fulfills the Writing Intensive (WI), Speaking Intensive (SI), and Information Literacy (IL) requirement for the Philosophy major. Prerequisite: Philosophy 161 or 191, Philosophy 201 or 211, and six hours of 300-level Philosophy courses; or permission of the instructor.

Semester course, three hours.

DEPARTMENT OF BIOLOGY

Dr. Antoszewski, Interim Chair; Dr. Brenner, Dr. Dudd, Dr. Farone, Dr. Jenkins, Dr. Pazehoski, Dr. Shaw, Dr. Stauff. Additional Instructional Faculty: Mrs. Lytle, Ms. McCullough, Mrs. Strain.

Course Requirements for Bachelor of Science Degree in Biology (BIOL)—51 hours

Biology Core (17 hours):

Biology 101, 102, 233, 234, and 488.

Groups (18 hours):

Choose one course from *each* of the following groups, as well as additional courses from any group to reach a minimum of 18 hours. Your group course section must include a minimum of three 4-credit lab courses.

Group 1: Molecular Mechanisms and Physiology

Biology 301, 302, 322, 325, 334, 346, and 407.

Group 2: Vertebrate Systems

Biology 310, 313, 314, and 341.

Group 3: Natural History

Biology 305, 323, 326, and 409.

Group 4: Environmental and Ecological Diversity

Biology 320, 331, 403, and 421.

Biology Electives (4 hours):

Choose four additional hours from any 200-, 300-, or 400-level Biology offerings. See the College *Bulletin* for Biology offerings not listed above. Note: Independent or honors research requires a minimum two-semester commitment (one credit per semester).

Major-related requirements (12 hours):

Chemistry 101, 102; and Mathematics 161.

Courses that count in the BIOL major quality point average (MQPA):

All courses with “BIOL” prefix. A minimum MQPA of 2.00 is required to graduate.

Course Requirements for a Bachelor of Science Degree in Biology and General Science Secondary Education Certification (BGSE)—100 hours

Biology Core (17 hours):

Biology 101, 102, 233, 234, and 486.

Groups (18 hours):

Choose one course from *each* of the following groups, as well as additional courses from any group to reach a minimum of 18 hours. Your group course section must include a minimum of three 4-credit lab courses.

Group 1: Molecular Mechanisms and Physiology

Biology 301, 302, 322, 325, 334, 346, and 407.

Group 2: Vertebrate Systems

Biology 310, 313, 314, and 341.

Group 3: Natural History

Biology 305, 323, 326, and 409.

Group 4: Environmental and Ecological Diversity

Biology 320, 331, 403, and 421.

Biology Electives (3 hours):

Choose three additional hours from any 200-, 300-, or 400-level Biology offerings. See the College *Bulletin* for Biology offerings not listed above. Note: Independent or honors research requires a minimum two-semester commitment (one credit per semester).

Major-related requirements (22 hours):

Chemistry 101, 102; Geology 201; Mathematics 161; Astronomy 206 or 207; and Science 201 and/or Physics 121 (both are recommended, but Science 201 may *not* follow Physics 121).

Education requirements (40 hours):

Education 202, 203, 204, 305, 309, 371, 431, 488; Psychology 102; and Special Education 101.

Courses that count in the BGSE major quality point average (MQPA):

All courses with “BIOL” prefix. A minimum MQPA of 2.00 is required to graduate.

Course Requirements for Bachelor of Science Degree in Biology/Health (BIOH)—74 hours**Biology Core (17 hours):**

Biology 101, 102, 233, 234, and 488.

Groups (21-22 hours):

Health Group 1: Biology 334, 341, 346, and 407.

Health Group 2: Complete two courses from Biology 310, 313, 314, 325, or 322.

Biology Electives (9-10 hours):

Choose nine to ten additional hours from any 200-, 300-, or 400-level Biology offerings. See the College *Bulletin* for Biology offerings not listed above. Note: Independent or honors research requires a minimum two-semester commitment (one credit per semester).

Major-related requirements (26 hours):

Chemistry 101, 102, and 241; Mathematics 161; Physics 121; Psychology 201; and one of Psychology 101 or Sociology 101.

Courses that count in the BIOH major quality point average (MQPA):

All courses with “BIOL” prefix. A minimum MQPA of 2.00 is required to graduate.

This major is designed for those students interested in careers in medicine or allied health fields, including medical doctor, doctor of osteopathy, physical therapy, physician’s assistant, nursing, veterinary medicine, optometry, dentistry, and others, while retaining

strong general biology training. This major requires many courses that are prerequisites for many allied health graduate programs.

Course Requirements for Bachelor of Science Degree in Conservation Biology (CBIO)—71 hours

Biology Core (17 hours):

Biology 101, 102, 233, 234, and 488.

Groups (24-25 hours):

Conservation Group 1: Biology 305, 320, 326, and 331.

Conservation Group 2: Complete three courses from Biology 323, 403, 409, or 421.

Biology Electives (13-14 hours):

Choose thirteen to fourteen additional hours from any 200-, 300-, or 400-level Biology offerings. See the College *Bulletin* for Biology offerings not listed above.

Note: Independent or honors research requires a minimum two-semester commitment (one credit per semester).

Major-related requirements (16 hours):

Chemistry 101 and 102; Mathematics 161; and Science 204.

Courses that count in the CBIO major quality point average (MQPA):

All courses with “BIOL” prefix. A minimum MQPA of 2.00 is required to graduate.

This major is designed to serve those students interested in careers in wildlife and natural resource management, or graduate study in the ecological, environmental, organismal or science fields, and others. This major requires many courses that are prerequisites for many environmental, conservation biology, resource management, or other field-oriented career paths.

Course Requirements for Bachelor of Science Degree in Molecular Biology (MBIO)—71 hours

Biology Core (17 hours):

Biology 101, 102, 233, 234, and 488.

Groups (15 hours):

Molecular Group 1: Biology 301, 302, and 407.

Molecular Group 2: Biology 314, 325, or 322.

Biology Electives (11 hours):

Choose eleven additional hours additional hours from any 200-, 300-, or 400-level Biology offerings. See the College *Bulletin* for Biology offerings not listed above.

Note: Independent or honors research requires a minimum two-semester commitment (one credit per semester).

Major-related requirements (28 hours):

Chemistry 101, 102, 241, 242, 351, and 352; and Mathematics 161.

Courses that count in the MBIO major quality point average (MQPA):

All courses with “BIOL” prefix. A minimum MQPA of 2.00 is required to graduate.

This major is designed to serve those students interested in careers in biochemical, molecular, genetic, or cellular biology fields. This major requires many courses that are prerequisites for many graduate programs in biochemistry, molecular biology, and related graduate programs.

Course Requirements for Bachelor of Science Degree in Neuroscience (NURO)—74 hours

Biology Core (17 hours):

Biology 101, 102, 233, 234, and 488.

Groups (17-18 hours):

Neuroscience Group 1: Biology 302, 308, and 313.

Neuroscience Group 2: Complete two courses from Biology 334, 341, or 346.

Biology Electives (4-5 hours):

Choose four to five additional hours from any 200-, 300-, or 400-level Biology offerings. See the College *Bulletin* for Biology offerings not listed above. Note: Independent or honors research requires a minimum two-semester commitment (one credit per semester).

Major-related requirements (35 hours):

Chemistry 101, 102; Computer Science 155; Mathematics 161; Physics 121, 122; and Psychology 101, 201, 316, and 318.

Courses that count in the NURO major quality point average (MQPA):

All courses with “BIOL” prefix. A minimum MQPA of 2.00 is required to graduate.

This major is designed to serve those students interested in careers in neuroscience, psychology, cognitive studies, medical schools, and research. As such, this major requires many courses that are prerequisites for many medical schools, and graduate programs in the fields of neuroscience, psychology, cognitive studies, and related fields.

Course Requirements for a minor in Biology (22 hours)

A minor in Biology will consist of Biology 101, 102, 233, 234; and six hours from Biology 301, 302, 305, 308, 310, 313, 314, 320, 322, 323, 325, 326, 327, 331, 334, 341, 346, 372, 390, 403, 407, 409, or 421.

The Biology curriculum seeks to develop academic competency and professional awareness, to encourage meaningful integration between the biological sciences and other dimensions of life, and to promote lifelong learning skills in problem solving, research, and communication. Writing-intensive, speaking-intensive, and information literacy skills are developed by special assignments in core and seminar courses.

Departmental policy limits students to one major within the Department of Biology. Students are expected to contact their advisors for a detailed schedule of courses recommended to meet requirements for a major.

BIOLOGY (BIOL)

BIOL 101. GENERAL BIOLOGY I. The first course in a year-long introduction to the unifying principles of biology. This semester includes discussion of the chemistry of life, cells structure, energy, genetics, and physiology. Three lectures and one lab per week. *Fall semester only, four hours.*

BIOL 102. GENERAL BIOLOGY II. A continuing discussion of the unifying principles of biology. Topics presented include: the diversity of life, kingdom plantae, animal reproduction and behavior, evolution, and ecological interactions. Three lectures and one lab per week.

Spring semester only, four hours.

BIOL 208. INTRODUCTION TO ENVIRONMENTAL EDUCATION. This course introduces the scope of environmental education. Topics addressed will include history and current trends, issue articulation and methodology, and development of problem-solving and communication skills to

address environmental issues. Learning competencies K-12 will be emphasized and reinforced by environmental project-learning experiences. *Alternate years, spring semester only, two hours.*

BIOL 233. GENETICS. An exploration of modern genetics beginning with early 20th century classical concepts as they relate to cells, organisms, and populations, continuing through late 20th century genetics as the molecular basis for classical concepts, and concluding with 21st century techniques and concepts including genomics and proteomics. Three lectures and one recitation per week. Prerequisite: Biology 102. *Fall semester only, four hours.*

BIOL 234. CELL BIOLOGY. A focus on the organization and physiology of living cells using a problem-solving approach to learning. Topics will include transcription and translation, energy conversion, cell division, membranes, organelles, cytoskeleton, and cell communication among others. The lab provides core experience with model cellular systems and basic tools of biomolecular research. Three lectures and one lab per week. Prerequisite: Biology 233. *Spring semester only, four hours.*

BIOL 260. INDEPENDENT STUDY. Individual study of specialized topics in biology. Sophomore standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one to three hours.*

BIOL 270. BIOLOGY RESEARCH. An opportunity to conduct supervised research in biology. Sophomore standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one hour.*

BIOL 301. ADVANCED GENETICS. This course further explores the field of molecular genetics with emphasis on a number of subtopics including: developmental genetics, forensics, genome manipulation, medical genetics, phylogenetics, population genetics, and other current topics. The course is designed to provide depth beyond Biology 233 in the context of molecular mechanisms and applied modern approaches to the study of the topics. Three lectures and one lab per week. Prerequisites: Biology 233 and 234; or permission of the instructor. *Alternate years, fall semester only, four hours.*

BIOL 302. DEVELOPMENTAL BIOLOGY. Investigates major events in embryonic development in animals including fertilization, cleavage, axis specification, gastrulation, neurulation, and organogenesis. Classical and modern developmental techniques and experiments will be discussed. Labs emphasize embryonic manipulation using multiple model organisms in designed lab projects. Three lectures and one lab per week. Prerequisite: Biology 234. *Alternate years, spring semester only, four hours.*

BIOL 305. PLANT TAXONOMY. A study of plants in relation to their habitats, including aspects of plant geography and taxonomy in the lecture portion and methods of plant identification, collection, and preservation with emphasis on local flora in the lab portion. Three lectures and one lab per week. Prerequisite: Biology 234. *Fall semester only, four hours.*

BIOL 308. NEUROBIOLOGY. An investigation of a broad array of topics in neurobiology, building on foundations of the Hodgkin-Huxley model of action potential, synaptic transmission, and neuromodulation. Studies include processing of sensory information in visual and auditory systems, the chemical senses, and others. The connections between sensory integration and motor behaviors in diverse animals will be explored. Neural mechanisms of learning and memory, sleep/wakefulness, and reward and decision-making also will be addressed. Recommended for students considering a career in research, health sciences, or psychology. Prerequisite: Biology 234. *Alternate years, spring semester only, three hours.*

BIOL 310. ZOOBOTIC DISEASE AND PUBLIC HEALTH. This course offers a unique opportunity to explore the pathological relationships that affect the health of animals and man within the global community. General virology, bacteriology, parasitology, and mycology will be discussed with special focus on the history, ecology, pathology, and epidemiology of specific zoonotic diseases of current importance. Preventative medicine, population and global health, and "One-Health"

concepts will be discussed. This course has special and timely importance in preparation for all pre-health professional careers. Laboratory sessions may include field trips to local areas of public health interest as well as guest speakers from the community. Three lectures and one lab per week. Prerequisite: Biology 234. *Spring semester only, four hours.*

BIOL 313. HISTOLOGY. This course offers a focused study of the normal tissues of mammals from both a morphological and a functional view at a microscopic level. Selected common tissue pathologies will also be introduced, discussed, and observed. Each student gets experience in the preparation of fresh slides, as well as identifying all major body tissues under the light microscope and utilizing virtual technology. Prerequisite: Biology 234. *Fall semester only, three hours.*

BIOL 314. IMMUNOLOGY. An exploration of the mammalian immune system on a cellular and molecular level. Beginning with a broad overview of concepts in immunology, the course will explore in detail topics including pattern recognition, clonal selection and deletion, immunological recognition at the molecular level, and lymphocyte development. Lectures are supplemented with three-dimensional molecular modeling assignments. Special topics include the etiology of autoimmune disease and immunoevasive strategies employed by pathogens. Prerequisite: Biology 234. *Spring semester only, three hours.*

BIOL 320. CONSERVATION AND WILDLIFE BIOLOGY. A comparative study of representative vertebrates with emphasis on population dynamics, biodiversity, morphological adaptation, wildlife conservation, and resource management. The lab involves field identifications, aging, and morphological adaptations of representative vertebrates. Three lectures and one lab per week. Prerequisite: Biology 234. *Spring semester only, four hours.*

BIOL 322. THE BIOLOGY OF CANCER. This course focuses on the causes of cancer and progression of the disease. The common features of all cancers will be discussed in addition to the distinguishing characteristics of a subset of cancers. Throughout the course, therapeutic targets will be identified, and novel therapeutic approaches will be considered. *Alternate years, spring semester only, three hours.*

BIOL 323. INVERTEBRATE ZOOLOGY. This course will provide students with a comprehensive presentation to the major invertebrate phyla through a combination of lectures and workshops. But because invertebrates comprise roughly 97% of animal species on the planet, we will emphasize terrestrial invertebrates, especially live ones locally available. Prerequisite: Biology 234. *Alternate years, fall semester only, three hours.*

BIOL 325. VIROLOGY. An exploration of the theoretical and experimental basis of virology, with emphasis on mechanisms of virus replication, similarities and differences among virus groups including medically important viruses, how viruses ensure their own survival, and virus-host interactions including disease and host defenses. Two lectures per week. Prerequisite: Biology 234. *Alternate years, fall semester only, three hours.*

BIOL 326. EVOLUTIONARY BIOLOGY. The objectives of this course are to introduce students to the theory of evolution, from the production and maintenance of genetic variation to the formation of new species, to present a summary of the history of life on earth, to familiarize students with the mechanisms of evolution, and the concepts of speciation and of major innovations. The material explanation for the origins of life and biological diversification will be examined in light of the Biblical doctrine of God's sovereignty in creation and process. Prerequisite: Biology 234 or permission of instructor. *Spring semester only, three hours.*

BIOL 327. ESSENTIAL LITERATURE FOR BIOLOGISTS. This course is designed to introduce students to the seminal works that serve as the foundation for the broad sub-fields of biology. Students will read twelve to fourteen books (or excerpts from books) and critique those works in terms of their contribution to both modern biology and contemporary society. Prerequisite: Biology 101 and 102; or permission of instructor. *Intersession course; periodically during regular semesters, three hours.*

BIOL 331. ECOLOGY. A study of responses of living systems to a changing environment in relation to selected ecosystems with emphasis on the interrelations of individual, population, community, and habitat. Three lectures and one lab per week. Prerequisite: Biology 234.

Fall semester only, four hours.

BIOL 334. BIOCHEMISTRY FOR BIOLOGY. This course covers all the major principles in the field of biochemistry. Proteins, lipids, carbohydrates, and nucleic acids are studied within the themes of macromolecule structure & function, metabolic pathways, and gene expression. Specific topics include oxygen binding proteins, enzyme catalysis, membrane transport, synthesis/degradation pathways of carbohydrates, lipids, & amino acids, and the informational pathways of DNA replication, transcription, & translation. Prerequisites: Biology 101, 102, and Chemistry 241. *No credit will be given to students who have already received credit for Chemistry 351 or 352.* Biology 334 does not fulfill the biochemistry requirement for Biochemistry majors. *Spring semester only, three hours.*

BIOL 341. HUMAN/MAMMALIAN ANATOMY. Gross and microscopic anatomy of mammals will be explored with emphasis on humans. These holistic studies of the body will include 11 major systems: integumentary, skeletal, muscular, circulatory, respiratory, renal, digestive, reproductive, neurologic, endocrine, and lymphatic. This course illustrates normal form and function principles and has special importance in preparation of the health-related careers. Three lectures and one lab per week. Prerequisite: Biology 234.

Fall semester only, four hours.

BIOL 346. HUMAN/MAMMALIAN PHYSIOLOGY. A study of the cellular basis for vertebrate organ system function with emphasis on human physiology. Systems discussed include muscle, nervous, endocrine, reproductive, urinary, digestive and cardiopulmonary. Laboratory exercises will utilize physiology simulations, problem sets and hands-on investigation. Three lectures and one lab per week. Prerequisite: Biology 234.

Spring semester only, four hours.

BIOL 360. INDEPENDENT STUDY. An opportunity for individual study of specialized topics in the biological sciences. Prerequisite: Completion of at least eight credits in biology, permission of the department chair, and a faculty sponsor.

Semester course, one to three hours.

BIOL 370. INDEPENDENT RESEARCH. Course providing independent opportunity in biological research under the supervision of a faculty mentor. Prerequisites: Completion of at least eight credits in biology, permission of the department chair, and a faculty sponsor.

Semester course, one hour.

BIOL 372. CONTEMPORARY TOPICS. This course presents an opportunity for students to study a topic of particular interest to the faculty member offering the course. Heavy focus will be placed on reading primary literature, understanding the history of the field and discussing specific experiments and techniques which led to major findings in the field. Prerequisite: Biology 234.

Offered periodically, one hour.

BIOL 390. STUDIES IN BIOLOGY. A course permitting students with special interests and needs to examine topics not included in regular course offerings or in greater depth than possible in regular courses. Prerequisite: Consent of the department.

Semester course, one, two, three or four hours.

BIOL 403. BASIS OF WILDLIFE BEHAVIOR. A comparative study of the physiological and ecological basis of animal behaviors and its interaction in the ecology and management of wildlife populations. Emphasis is placed on the innate and learned behaviors in disease transmission, and in the evolution and management of rural and urban wildlife populations. Prerequisite: Biology 234.

Alternate years, fall semester only, three hours.

BIOL 407. MICROBIOLOGY. An introduction to microorganisms, primarily bacteria that cause disease in humans, which focuses on microbial structures, genetics, and life cycles, and also delves into molecular pathogenesis mechanisms and interactions between pathogens and the mammalian immune system. Two lectures and two labs per week. Prerequisites: Biology 234 and Chemistry 101.

Fall semester only, four hours.

BIOL 409. ENTOMOLOGY. A study of the class Insecta, including insect diversity, life histories, morphology, physiology, behavior, ecology, and impact on human society. The course includes a combination of lecture and lab components. The lab component includes field excursions for collecting insects for display and anatomical/taxonomic investigation. Course traditions include a black-light party and a bug feast. Three lectures and one lab per week. Prerequisite: Biology 234.

Alternate years, fall semester only, four hours.

BIOL 421. AQUATIC AND FISHERY BIOLOGY. A study of freshwater and marine ecosystems, including the impact of pollution on aquatic environments, water chemistry, taxonomy of aquatic organisms, fisheries, and management of aquatic systems. Prerequisite: Biology 234.

Alternate years, fall semester only, three hours.

BIOL 460. INDEPENDENT STUDY. An opportunity for individual study of specialized topics in the biological sciences. Prerequisites: Completion of at least eight credits in biology, permission of the department chair, and a faculty sponsor.

Semester course, one to three hours.

BIOL 470. INDEPENDENT RESEARCH. Course providing independent opportunity in biological research under the supervision of a faculty sponsor. Prerequisites: Completion of at least eight credits in biology, permission of the department chair, and a faculty sponsor.

Semester course, one hour.

BIOL 480. INTERNSHIP IN BIOLOGY. Qualified upperclassmen may participate in unpaid, individual off-campus experiences in research, medical, environmental, or other approved settings under the guidance of both an on-site host supervisor and a Biology faculty sponsor. Grade is dependent upon required update communication with the faculty sponsor, written evaluation by the on-site supervisor, and submission of an internship paper to the faculty sponsor. Prerequisites: Minimum rising sophomore status, minimum 8 credit hours of biology, and permission of the department.

Summer or semester course, one to six hours.

BIOL 486. SEMINAR FOR BIOLOGY TEACHERS. Provides instruction in how to prepare for and conduct effective biology learning experiences. Students will instruct classmates through presentations, participate in Project WET training, and conduct research using library/web resources. Students will also practice instruction in an actual classroom or informal setting. This course fulfills the Writing Intensive (WI), Information Literacy (IL), and Speaking Intensive (SI) requirements for education majors in the Department of Biology. Prerequisites: Junior or senior standing education majors and acceptance into a teacher certification program; or permission of instructor.

Alternate years, spring semester only, one hour.

BIOL 488. SEMINAR IN BIOLOGY. Required of all majors in the Department of Biology except for those in teacher certification programs. Students will apply the knowledge they have obtained in previous biology classes by writing a literature review on a biological topic of their interest. Students will learn how to perform in-depth research of scientific literature through the use of library/web resources and will gain experience in both reading and critically evaluating peer-reviewed journal articles. Special emphasis will be placed on the students' participation in a peer-review process as they evaluate their peers' papers. The class culminates with each student delivering a professional oral presentation about their chosen topic. This course fulfills the Writing Intensive (WI), Information Literacy (IL), and Speaking Intensive (SI) requirements for majors in the Department of Biology. Prerequisite: Senior standing.

Semester course, one hour.

BIOL 499. HONORS IN BIOLOGICAL RESEARCH. Seniors who have shown special aptitude in biology may undertake supervised biological research. Registration for the honors course requires prior completion of an on- or off-campus research experience. A research paper is required and a public presentation is encouraged. Prerequisite: Senior standing, permission of the department chair, and a faculty sponsor.

Semester course, one hour.

GEOLOGY (GEOL)

GEOL 201. PHYSICAL/ ENVIRONMENTAL GEOLOGY. A study of the internal and external forces affecting the surface of earth and the distribution of geologic resources and the environmental impacts on the extraction and use of these resources. This course is also designed to relate the historical and current geologic activity to the local ecology and land use planning.

Spring semester only, three hours.

BUSINESS PROGRAM: DEPARTMENT OF ACCOUNTING AND FINANCE

Dr. Baglia, Chair; Dr. Grimm, Dr. McFeaters, Ms. Russin, Mrs. Stone, Dr. Zhang. Additional Instructional Faculty: Mr. DuCarme, Mr. Falconi, Ms. Schnur.

The mission of the business program at Grove City College is to prepare our students to become effective and ethical leaders in business as well as in society as a whole. This mission incorporates the following learning outcomes:

1. **Business Knowledge and Analytical Skills:** Our students will demonstrate the entry level knowledge and analytical skills necessary in their professional field.
2. **Communication Skills:** Our students will demonstrate the written and verbal skills needed to communicate effectively within the business environment.
3. **Ethics:** Our students will demonstrate a Christian understanding of business which reflects its moral and ethical responsibilities to all potential stakeholders.
4. **Global Perspective:** Our students will demonstrate an understanding of the global and multi-cultural issues in the current business environment.
5. **Accounting Knowledge and Skills:** Our students will demonstrate the ability to prepare and analyze financial information used in managerial decision-making and external reporting for all types of business and non-profit organizations. Our students will demonstrate an understanding of accounting systems and their related internal controls and will demonstrate the ability to audit financial statements that are generated from these accounting systems. Our students will demonstrate the ability to apply federal tax law in the preparation of individual tax returns.
6. **Finance Knowledge and Skills:** Our students will demonstrate knowledge and skills that meet or exceed requirements to complete for entry-level positions in corporate finance and the financial services industry. This includes knowledge of finance principles, investments, and advanced topics in corporate finance.

The ACBSP accredited Accounting major prepares students for careers in public accounting, corporate accounting, and various positions in the non-profit sector.

Course Requirements for a Bachelor of Science Degree in Accounting (ACCS)—70 hours

Accounting Core (30 hours):

Accounting 201-202, 301-302, 303, 321, 401, 402, 403, and 405.

Business Core (21 hours):

Management 201, 203, 214, 303, 486; Marketing 204; and Finance 301.

Major Electives (9 hours)

Choose nine additional hours from any 200-, 300-, or 400-level courses in Accounting, Entrepreneurship, Finance, International Business, Management, or Marketing (maximum of 3 hours of internship credit). Students pursuing their CPA license should consider taking Accounting 404, Accounting 406, and/or Accounting 410.

Major-related courses (10 hours):

Mathematics 141 or 161*; Economics 101 and 102.

** Mathematics 141 prepares students in the business applications of calculus, but Mathematics 161 must be taken as a prerequisite for Mathematics 162 and 261.*

Courses that count in the ACCS major quality point average (MQPA):

All courses with “ACCT”, “FNCE”, “INBS”, “MARK”, “MNGT” prefix, excluding MNGT 106 and FNCE 105. A minimum MQPA of 2.00 is required to graduate. A maximum of three accounting [ACCT] courses may be taken in any one semester.

It is recommended that students planning to enter the field of public accounting take additional accounting courses to satisfy their major electives.

Course Requirements for a Bachelor of Science Degree in Finance (FNCE)—67 hours

Business Core Courses (33 hours):

Accounting 201, 202; Finance 301; International Business 305; Management 201, 203, 211, 214, 303, 486; and Marketing 204.

Math/Economics Courses (10 hours):

Economics 101, 102; Mathematics 141 or 161*.

**Mathematics 141 prepares students in the business applications of calculus, but Mathematics 161 must be taken as a prerequisite for Mathematics 162 and 261.*

Finance Major Core Courses (12 hours):

Finance 341, 432, 436, and 440.

Finance Major Elective Courses (12 hours):

Choose twelve additional hours from any 200-, 300-, or 400-level courses in Accounting, Economics, Entrepreneurship, Finance, International Business, Management, or Marketing. A minimum of six hours must be Finance, excluding 460 and 480. A maximum of three hours of internship may count as finance electives; any remaining internship credits will count as general electives.

Courses that count in the FNCE major quality point average (MQPA):

All courses with “ACCT”, “ENTR”, “FNCE”, “INBS”, “MARK”, and “MNGT” prefix, excluding MNGT 106 and FNCE 105. A minimum MQPA of 2.00 is required to graduate.

Students who graduate with a major in finance receive comprehensive training in business, along with specialized instruction in corporate finance and investment management. Advanced level courses in capital markets, financial planning and valuation provide the student with career-specific training. Students learn practical applications from research projects, simulations, and Harvard-style case studies.

Writing, Speaking and Information Literacy Intensive Courses

It is essential for students majoring in the Department of Accounting and Finance to possess strong writing, speaking, and information literacy (knowing how to locate, analyze, and use information in decision-making) skills in preparation for careers in business/accounting or graduate studies. The curriculum requirements specifically designed to develop these skills include Management 214 *Business, Ethics, and Society* and Management 486 *Business Policy and Strategy*. Please see course descriptions that follow for more information.

150-Credit Hour, 4-Year Double Major in Accounting and Finance

The Department of Accounting and Finance offers a program leading to a 150-credit hour double major in Accounting and Finance. The program, which satisfies the CPA licensing requirements of the Commonwealth of Pennsylvania as well as most other states, is designed, through accelerated study and summer/intersession coursework, to be completed in four years. Students entering Grove City College as freshmen with Advanced Placement (AP) credits or other college credits will find this program particularly of interest.

The traditional 128-credit hour Accounting major is available as a degree option and it is the foundation of the 150-hour double major. In addition to completing requirements for the Accounting major as outlined on the previous page, students choosing this double major option will also need to satisfy the following Finance major requirements:

- Finance 341, 432, 436, and 440; International Business 305; and Management 211 (18 hours).

Students interested in this program should complete a “Change of Major” form listing Accounting as their first major and Finance as their second major. Please contact Dr. David Baglia, Department Chair, at dsbaglia@gcc.edu or (724) 458-3361 for more information.

Students who are interested in obtaining 150 credit hours to meet CPA licensing requirements are not limited to the Accounting and Finance double major. Students may select any courses they choose to make up the additional credits beyond 128 hours, including the Forensic Accounting concentration discussed below, or they may choose to double major in another College program.

Course Requirements for a concentration in Forensic Accounting (15 hours)

Students majoring in Accounting can earn a concentration in Forensic Accounting by completing Accounting 305 and 404; Sociology 221; Communication Studies 303; and either Management 304 or Marketing 325. Note: Accounting 305, 404, and either Management 304 or Marketing 325 satisfy the nine credits of major electives required for the Accounting major.

Course Requirements for a minor in Accounting (18 hours)

(Restricted to non-Accounting majors only)

A minor in Accounting will consist of Accounting 201, 202, 301, 321, 405, and one course from Accounting 302, 303, 305, 401, 402, 403, or 406.

Course Requirements for a minor in Finance (18 hours)

(Restricted to non-Finance majors only)

A minor in Finance shall consist of Finance 301, 432, 440, and three courses from Finance 341, 434, 435, 436, 462, or Entrepreneurship 430.

Students are expected to contact their advisors for a detailed schedule of courses recommended to meet requirements for a major.

ACCOUNTING (ACCT)

ACCT 201. PRINCIPLES OF ACCOUNTING I. This introductory course focuses on the preparation and use of accounting information in the financial reporting environment. Emphasis is placed on the understanding and application of steps involved in the accounting cycle as well as on the recognition, measurement, and reporting issues associated with various financial statement accounts for sole proprietorships and partnerships using the accrual basis of accounting. The course also exposes the student to career opportunities in the accounting profession.

Fall semester only, three hours plus lab.

ACCT 202. PRINCIPLES OF ACCOUNTING II. Course topics include accounting for debt and stockholder's equity, financial statement analysis, statement of cash flows, as well as introductions to managerial accounting techniques including cost-volume-profit analysis, budgeting, product costing, standard costs, and decision-making analysis. Prerequisite: Accounting 201.

Spring semester only, three hours plus lab.

ACCT 260. INDEPENDENT STUDY. Individual study of specialized topics in accounting. Sophomore standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

ACCT 270. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in accounting. Sophomore standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

ACCT 301. INTERMEDIATE ACCOUNTING I. A study of the financial statements with an emphasis on the income statement and asset section of the balance sheet. This course also focuses on accounting theory, the interpretation of financial accounting standards associated with the balance sheet, and International Financial Reporting Standards [IFRS]. Prerequisite: Accounting 202.

Fall semester only, three hours plus lab.

ACCT 302. INTERMEDIATE ACCOUNTING II. A continued study of the financial statements with an emphasis on the liabilities and stockholder's equity sections of the balance sheet. Includes topics such as earnings per share (EPS), accounting for income taxes, leases, and pensions, and the statement of cash flows. This course also focuses on accounting theory and the interpretation of current financial accounting standards, including IFRS. Prerequisite: Accounting 301.

Spring semester only, three hours plus lab.

ACCT 303. COST ACCOUNTING. A study of cost flows in a manufacturing environment and the assignment of direct and indirect manufacturing costs to a company's cost of goods sold and inventory accounts by the application of job order, process, and standard costing systems. The course also focuses on the ways in which accounting information is used in operational decision-making. Prerequisites: Accounting 202 and junior standing.

Fall semester only, three hours.

ACCT 305. FORENSIC ACCOUNTING. This course is intended to provide students with an introductory exposure to the field of forensic accounting. Much broader than fraud auditing, forensic accounting involves the use of intelligence-gathering techniques, along with other accounting and business skills, to present trial testimony and to develop information and opinions for use by attorneys in litigation. Specific topics include the roles and responsibilities of the forensic accountant, fraud standards and different types of fraud, ethical considerations, internal controls, business valuation, breach of contract, and damage calculations. Prerequisites: Accounting 202 and junior standing.

Alternate years, fall semester only, three hours.

ACCT 321. ACCOUNTING INFORMATION SYSTEMS. A study of the use of a variety of resources designed to transform financial and other data into financial information for decision-making. Consideration of these systems must deal with issues such as the flow of transactions and related procedures; summarizing the financial data into meaningful formats for both internal and external reporting; documentation for audit trail purposes; data security and backup; and disaster

recovery planning. The course will emphasize transaction cycles, business processes, systems controls, and accounting database applications. Prerequisites: Accounting 202 and junior standing.

Spring semester only, three hours.

ACCT 360. INDEPENDENT STUDY. Individual study of specialized topics in accounting. Prerequisites: Junior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

ACCT 370. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in accounting. Junior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

ACCT 390. STUDIES IN ACCOUNTING. Studies in areas of accounting not fully covered by regular departmental offerings, such as forensic accounting and international issues.

Semester course, three hours.

ACCT 401. ADVANCED ACCOUNTING I. A study of the financial accounting effects on business entities involved in mergers, consolidations, and divestitures with an emphasis on the proper recognition and recording of acquisition, the elimination of inter-company transactions, and the preparation of consolidated financial statements. Prerequisite: Accounting 302.

Fall semester only, three hours.

ACCT 402. ADVANCED ACCOUNTING II. A study of the financial accounting principles used in the preparation of general purpose financial statements for governmental units, not-for-profit corporations and associations including colleges and universities, health care entities, voluntary health and welfare organizations, and partnerships. Foreign exchange transactions and other special topics are also covered. Prerequisite: Accounting 302.

Spring semester only, three hours.

ACCT 403. AUDITING. A study of the duties and responsibilities of professional auditing, including types of audits and audit programs, audit planning, evidence, risk assessment, preparation of audit working papers, and audit reports. Prerequisites: Accounting 302, 321, and senior standing.

Fall semester only, three hours.

ACCT 404. ADVANCED AUDITING. Additional auditing issues are explored, including practical applications involving statistical sampling, IT controls, risk assessment, and audit evidence gathering. Legal issues in auditing and other types of non-attest services are also discussed. Prerequisites: Accounting 403 and senior standing.

Spring semester only, three hours.

ACCT 405. TAX ACCOUNTING. A study of the provisions of the federal tax laws and the proper practices in preparing tax reports with emphasis on tax preparation for individuals. Prerequisites: Accounting 202 and senior standing.

Fall semester only, three hours.

ACCT 406. ADVANCED TAX ACCOUNTING. Theory and practice in the treatment of partnership and corporate taxes with emphasis on the accounting and management planning aspects. Prerequisite: Accounting 405.

Spring semester only, three hours.

ACCT 410. CONTEMPORARY ACCOUNTING THEORY AND PRACTICE. A capstone course that stresses contemporary financial accounting issues and theory and that familiarizes the student with interpretation of current accounting standards. Other non-financial topics are briefly covered. Prerequisites: Accounting 302 and senior standing.

Spring semester only, three hours.

ACCT 460. INDEPENDENT STUDY. Individual study of specialized topics in accounting. Senior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

ACCT 470. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in accounting. Senior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

ACCT 480. INTERNSHIP IN ACCOUNTING. This is an opportunity for accounting majors to participate in a meaningful learning experience under the supervision of both an employer and department faculty member. Most internships take place during the summer months. Students will be graded based on an employer performance evaluation along with a written paper and journal. Prerequisites: Good academic standing and completion of the freshman year of study.

Semester course, one to six hours.

FINANCE (FNCE)

FNCE 105. PERSONAL FINANCE. An introduction to the financial problems of individuals such as managing personal debt (including educational debt); choosing health, life, and property insurance; making investments; and understanding income taxation, retirement, and estate planning.

Semester course, three hours.

FNCE 301. PRINCIPLES OF FINANCE. This course explains important concepts and applications in corporate finance, such as time value of money, security valuation, capital budgeting, portfolio theory, and capital structure. This is a mathematics intensive course designed to develop analytical thinking skills. Prerequisites: Accounting 201 and 202. Corequisite: Management 201. This course should be completed by the end of the junior year.

Semester course, three hours.

FNCE 341. FINANCIAL MODELING. This course equips students with knowledge of fundamental financial models and ability to apply them using Excel. Such models cover time value of money and stock valuation, portfolio management, option pricing, and bond pricing. After this course, students are expected to use these models using Excel to solve financial problems in these areas. Prerequisite: Finance 301.

Semester course, three hours.

FNCE 432. INVESTMENTS. This course examines a variety of topics commonly associated with investment in publicly traded securities and mutual funds. It examines ways in which financial market data is utilized as inputs into models for asset pricing and portfolio management. It also explores topics such as index construction, portfolio performance assessment, and risk management techniques. The course will emphasize the use of spreadsheets for model building and analysis. Prerequisite: Finance 301.

Fall semester only, three hours.

FNCE 434. INVESTMENT VALUATION. This course covers techniques used to assess the investment merit of publicly traded debt and equity instruments. The course focuses on various applications of fundamental and technical analysis. Students will use these techniques to construct research reports and investment recommendations. They will also provide a presentation based upon the results of their analysis. Prerequisite: Finance 432.

Spring semester only, three hours.

FNCE 435. FINANCIAL PLANNING. This course provides a comprehensive exploration of financial planning topics (in conjunction with the recommendation of the Academy of Financial Services and the CFP Board of Standards) including the financial planning process, client interactions, time value of money applications, personal financial statements, cash flow and debt management, asset acquisition, education planning, risk management, investment planning, retirement planning, special circumstances, plan integration, ethics, and the business of financial planning. Prerequisite: Finance 301 and junior standing.

Spring semester only, three hours.

FNCE 436. CAPITAL MARKETS. This course explores the functions and operations of money, capital, and derivatives markets. It addresses topics such as stock market efficiency, financial market integration and globalization, as well as markets for venture and private capital. The characteristics of various financial instruments that trade over-the-counter and on organized exchanges will also be reviewed. Prerequisites: Finance 301.

Semester course, three hours.

FNCE 440. ADVANCED CORPORATE FINANCE. This course focuses on the processes and procedures employed by financial managers to help ensure that actions taken enhance shareholder value. Topics include applications of net present value and options pricing models to capital budgeting decisions, techniques for determining the cost of capital, valuation and performance measurement, mergers and acquisitions, and risk analysis and management. This course will emphasize the use of spreadsheets for model building and analysis. Prerequisites: Finance 301.

Fall semester only, three hours.

FNCE 462. MULTINATIONAL FINANCIAL MANAGEMENT. This course focuses on financial issues facing multinational corporate financial managers. International finance is a quickly evolving field that is complicated by cross-border differences in monetary systems, markets for foreign exchange, exchange exposure, security markets and institutions, and corporate investment analysis. Knowledge of international financial transactions is essential as markets become increasingly integrated due to exploitation of comparative advantages between nations. Prerequisite: International Business 305 and one of Finance 432, 434, or 440.

Semester course, three hours.

FNCE 480. INTERNSHIP IN FINANCE. This is an opportunity for finance majors to participate in a meaningful learning experience under the supervision of both an employer and department faculty member. Most internships take place during the summer months. Students will be graded based on an employer performance evaluation along with a written paper and journal. Prerequisites: Good academic standing and completion of the freshman year of study. *Semester course, one to six hours.*

BUSINESS PROGRAM: DEPARTMENT OF ENTREPRENEURSHIP

Mr. Sweet, Chair; Ms. English, Mr. G. Howley. Additional Instructional Faculty: Mr. English, Mr. Habbershon, Mr. B. Howley, Mr. Lewis. Adjunct: Dr. Hendrickson.

The mission of the Business Program at Grove City College is to prepare our students to become effective and ethical leaders in business as well as in society as a whole. This mission incorporates the following learning outcomes:

1. General Business Knowledge and Analytical Skills - Our students will demonstrate the entry-level knowledge, analytical skills, and information literacy generally necessary in business.
2. Communication Skills - Our students will demonstrate the written and verbal skills needed to communicate effectively within the business environment.
3. Ethics - Our students will demonstrate a Christian understanding of business which reflects their moral and ethical responsibilities to all potential stakeholders.
4. Global Perspective - Our students will demonstrate an understanding of the global and multi-cultural issues in the current business environment.
5. Entrepreneurship Knowledge and Skills - Our students will demonstrate entry-level knowledge and skills necessary to successfully plan, launch, and operate startup commercial and social enterprises, and to develop new business models in corporate contexts. Students will acquire experience and competencies in ideation, lean startup methodologies, competitive research, blended-value business modeling, digital technologies, business planning, and in the financial, legal, ethical and faith-minded dimensions of entrepreneurship.

Course Requirements for a Bachelor of Science Degree in Entrepreneurship (ENTR)—67 hours

Entrepreneurial Core (34 hours):

Entrepreneurship 101 and 102.

Entrepreneurship 301, 302, 303, 306, 307, 309, 312, 430, 466, and 467.

Business Core (15 hours):

Accounting 201 and 202; Finance 301; Management 201; and Marketing 204.

Entrepreneurial Electives (12 hours):

Complete 12 hours choosing from Entrepreneurship 314, 317, 326, 328, 330, 331, 390, 402, 408, 409, 423, 424, 426, 468, 488, or any two courses from any 300- or 400-level Accounting, Entrepreneurship, Finance, International Business, Management, or Marketing offerings not listed. A maximum of three credits of Entrepreneurship 480 Internship may also count as entrepreneurial electives; any remaining internship credits will count as general electives.

Major-Related Courses (6-7 hours):

Economics 101; and Computer Science 141, Mathematics 141, or Mathematics 161.

Courses that count in the ENTR major quality point average (MQPA):

All courses with “ACCT”, “ENTR”, “FNCE”, “INBS”, “MARK”, “MNGT” prefix, excluding MNGT 106 and FNCE 105. A minimum MQPA of 2.00 is required to graduate.

It is essential for students pursuing the Entrepreneurship major to possess strong writing, speaking, and information literacy skills in preparation for future careers in business. Four required courses for the major will equip students with these skills: Entrepreneurship 466 *Business Planning* is designated to enhance Writing Intensive (WI) skills; Entrepreneurship 102 *Technology for the Entrepreneur* for Information Literacy (IL) skills; and Entrepreneurship 101 *The Entrepreneurial Mind: Creativity and Innovation* and Entrepreneurship 467 *Corporate Healthcare Innovation* for Speaking Intensive (SI) skills.

Course Requirements for a minor in Entrepreneurship (22 hours)

(Restricted to non-Entrepreneurship majors only)

A minor in Entrepreneurship will consist of Accounting 201; Entrepreneurship 101, 102, 301; Finance 301; and nine hours from Entrepreneurship 302, 303, 307, 309 or 328, 312, 314, 317, 408, 423, 430, or 467.

Course Requirements for a minor in Internet Entrepreneurship (21 hours)

(Restricted to non-Entrepreneurship majors only)

A minor in Internet Entrepreneurship will consist of Entrepreneurship 101, 328, 330, 409; Design 101, 210; and one of Entrepreneurship 309 or Marketing 315.

Course Requirements for a minor in Social Enterprise (21 hours)

(Restricted to Business Program majors only)

A minor in Social Enterprise will consist of Entrepreneurship 307; International Business 408; Sociology 201, 356; Communication Studies 225 or Global Studies 300; and six hours from Sociology 208, 314; Social Work 101, 305, 382; or Entrepreneurship, Management, or Sociology 390 with department chair approval.

Course Requirements for a minor in Social Entrepreneurship (21 hours)

(Restricted to Sociology majors only)

A minor in Social Entrepreneurship will consist of Entrepreneurship 101, 307; Entrepreneurship 408 or International Business 408; Accounting 201; Finance 301; Management 203; and Marketing 204.

Course Requirements for a minor in Social Innovation (21 hours)

(Restricted to Entrepreneurship majors only)

A minor in Social Innovation will consist of Entrepreneurship 408 or International Business 408; Sociology 201, 356; Communication Studies 225 or Global Studies 300; and nine hours from Sociology 208, 314; Social Work 101, 305, 382; and Entrepreneurship, Management, or Sociology 390 with department chair approval.

Students are expected to contact their advisors for a detailed schedule of courses recommended to meet requirements for a major.

ENTREPRENEURSHIP (ENTR)

ENTR 101. ENTREPRENEURIAL MIND: CREATIVITY AND INNOVATION. This course introduces the student to entrepreneurial thought and the process for innovation and idea generation. Students begin to develop their own entrepreneurial mindset and the business skills essential to the entrepreneurial experience. Students are introduced to the basics of business and challenged to think creatively about forming businesses or designing products to solve customer problems and address unmet needs in the commercial and social arenas. Through experiential learning, case studies, business writing assignments, and creative thinking exercises, students will develop a disciplined thought process for starting and running their own enterprise. This course satisfies the Speaking-Intensive requirement for Entrepreneurship majors. Corequisite: Entrepreneurship 102 for Entrepreneurship majors. All other majors may take the course as an elective without the corequisite.

Fall semester only, three hours.

ENTR 102. TECHNOLOGY FOR THE ENTREPRENEUR. Students learn to use technology commonly used by entrepreneurs in the following areas: presentations, networking, blogging, social media, design, basic websites, eCommerce, and prototyping. This course satisfies the Information Literacy requirement for Entrepreneurship majors. Entrepreneurship majors take this concurrently with Entrepreneurship 101.

Fall semester only, one hour.

ENTR 260. INDEPENDENT STUDY. Individual study of specialized topics in entrepreneurship. Sophomore standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

ENTR 270. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in entrepreneurship. Sophomore standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

ENTR 301. LEAN LAUNCHPAD. The Lean LaunchPad uses the Customer Discovery process and the Business Model Canvas to collapse the infinite possibilities of a startup into a set of solvable problems. Students will be taught how to use the information that they collect from customers to validate and/or invalidate their business model hypotheses. Throughout the course, the teams will modify their business models as they iterate, pivot, and/or restart their ideas. It provides real world, hands-on learning on what it's like to actually start a company. This class is not about how to write a business plan. It is a practical entrepreneurial lab in which the goal is to create an entrepreneurial experience that includes the pressures and demands of the real world in an early-stage startup within the constraints of the classroom and with a limited amount of time. Students will work in teams, learning how to use a business model to brainstorm and test each critical element of a company. Students will also learn how to develop customers in real business scenarios, testing product viability and authentic demand.

Spring semester only, three hours.

ENTR 302. SALES IN THE STARTUP. The purpose of this course is to understand the theory and practice of sales as it is approached in the environment of a startup business. The class will explore strategic selling methodologies, such as partnership development, channel development, and seminar-based sales, as well as specific sales skills and techniques. Students will learn about the particular challenges of selling in the context of a newly launched business, and they will have the opportunity

to meet and interact with sales professionals who have specialized in this sales context. Throughout the course, students will have opportunities to practice sales skills. *Spring semester only, three hours.*

ENTR 303. LAW FOR ENTREPRENEURS. This course provides an awareness and basic understanding of the legal issues frequently encountered by entrepreneurs. The course specifically examines the legal issues surrounding the organization, financing, and operations of a company, including ownership structuring, the raising of capital, federal securities requirements and exemptions, determining valuation, intellectual property, board formation, human resources, and exit strategies. Students may not receive credit for both Entrepreneurship 303 and Management 303.

Spring semester only, three hours.

ENTR 306. ETHICS FOR THE ENTREPRENEUR. Students study the ethical decisions business professionals face in small business, family business, and corporate business settings. Students analyze selected case studies and discuss their analysis with the class. Students will interact with business professionals as they study and analyze “living” cases in which one or more of the parties interacts with the class. Through these discussions students will come to understand what constitutes an ethical issue and the different philosophical, theological, and practical perspectives from which individuals may approach an ethical decision. Students are challenged to begin thinking through and developing their own ethical framework as well as to realize the implications of Christian faith in making ethical business decisions.

Fall semester only, three hours.

ENTR 307. SOCIAL ENTREPRENEURSHIP. How might one “do good while doing well?” Social entrepreneurship is an accelerating field of study and practice in today’s world of shrinking governmental services. Students study highly effective non-profit as well as for-profit social enterprises to learn the unique aspects of entrepreneurship used to facilitate meaningful social change. Practitioners of existing successful social enterprises act as guest lecturers and coaches.

Fall semester only, three hours.

ENTR 309. E-COMMERCE. This course will provide a foundation for understanding the essential components of a successful eCommerce system, including eCommerce strategy, target market analysis, search engine optimization, integrated marketing, web usability, payment processing, current technologies, data management and fulfillment systems. Case studies and actual business scenarios will be examined in detail, and students will have the opportunity to explore practical applications in the marketplace by working in teams to design and operate their own eCommerce ventures during the semester.

Fall semester only, three hours.

ENTR 312. ENTREPRENEURSHIP: MANAGING A GROWING ENTERPRISE. This course focuses on the strategy and operations issues involved with managing an existing company beyond the startup phase using a global business simulation game. While the course is open to non-entrepreneurship, business, and accounting majors, it presupposes a basic understanding of business functions and language. The core feature of the course is a simulation tied to students’ weekly business decisions involving recognizing opportunities, assessing risk, developing resources, and implementing a course of action.

Fall semester only, three hours.

ENTR 314. ENTREPRENEURSHIP AND THE MISSION OF THE CHURCH. This course explores the relationship between entrepreneurial theory and practice and the execution of church ministry and mission work, with a particular focus on the ways in which entrepreneurship can be employed in the service of Kingdom of God. In addition, the development of “kingdom-minded” businesses providing blended value will be explored in detail. Students will learn about need identification, opportunity analysis, ministry model development, strategic planning, and reputation building in the context of faith-based organizational experience. Concepts related to organizational launch, growth, development and sustainability will also be addressed throughout the course. Students will apply diagnostic and problem-solving skills to case studies, while identifying entrepreneurial strategies to address challenges and opportunities. Students will work throughout the semester in project teams with a local church ministry or mission endeavor. *Spring semester only, three hours.*

ENTR 317. STARTUP FOUNDERS' DILEMMAS. The early decisions made by the founders of startup organizations can determine the entire future path of a company. In this course, students will explore the types of decisions that founders face and the potential impact of such decisions. They will examine case studies of actual startup companies in detail in order to understand how to avoid common pitfalls and mistakes. Through the examination of the results of a decade of research, including quantitative data on almost ten thousand founders, students will build a strong understanding of these types of decisions and how their consequences can make or break organizations. The specific areas of study will include pre-founding decisions, founding team dilemmas, hires, and investors.

Fall semester only, three hours.

ENTR 326. INTRODUCTION TO THE BUSINESS OF MUSIC. This course is designed as an introduction to the business of music, providing students with the latest instruction on best practices for music creators, consumers, and facilitators working in this field. Students will have the opportunity to learn the fundamental principles involved in the entrepreneurial and legal dimensions of the music business, exploring the structural and functional components of this ever-changing and rapidly-growing industry. Particular attention will be given to the challenges of starting, growing and managing a music business in the digital era. Students may only receive credit for one of Students may only receive credit for one of Entrepreneurship 326, Management 326, or Music 326.

Semester course, three hours.

ENTR 328. INTERNET CONTENT MARKETING. Students will probe the subject of Internet content marketing as a core discipline for 21st century entrepreneurs. They will learn essential concepts for strategic content development and web-based thought leadership and will acquire skills for use with practical web applications. Students will engage in a semester-long project using WordPress to publish Internet content for their own website idea, or for a company or organization, employing techniques learned in a class. The structure of the class will include two teaching sessions per week and a WordPress lab. Students may not receive credit for both Entrepreneurship 328 and Marketing 328.

Fall semester only, three hours.

ENTR 330. SEARCH ENGINE OPTIMIZATION. Students will explore the fundamental principles and best practices in the field of search engine optimization. They will learn and develop the essential knowledge and skills required to achieve favorable organic rank in the most important search engines and will become familiar with and interact with experts in the industry. Case studies and actual business scenarios will be examined in detail. Students will have opportunity to conduct SEO research for small businesses and non-profit organizations in a semester-long project. Students may not receive credit for both Entrepreneurship 330 and Marketing 330.

Spring semester only, three hours.

ENTR 331. ENTREPRENEURSHIP AND ENTERPRISE. An examination of entrepreneurship and its role in society. The contribution of creativity, foresight, and other attributes of entrepreneurs to the working of both for-profit and not-for profit enterprises will be explored.

Semester course, three hours.

ENTR 360. INDEPENDENT STUDY. Individual study of specialized topics in entrepreneurship. Prerequisites: Junior standing and permission of the department chair.

Semester course, one, two or three hours.

ENTR 370. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in entrepreneurship. Junior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

ENTR 390. STUDIES IN ENTREPRENEURSHIP. Studies in areas of entrepreneurship not fully covered by regular departmental offerings.

Semester course, three hours.

ENTR 402. TECH COMMERCIALIZATION STUDIO. In this course, students will examine what is needed to take an idea to market while exploring business and revenue models, legal considerations, customer validation, and go-to-market strategies through lectures, guest presentations, and working on exercises exploring the commercialization of a specific technology.

Spring semester only, 1 hour.

ENTR 408. SOCIAL ENTREPRENEURSHIP PRACTICUM. Using case studies, lectures, and hands-on exercises, this course clarifies and illustrates the steps necessary to prepare to launch a social enterprise. Topics include the idea generation, business models, organizational structure, staffing, governance, funding, and measurement of social impact. Over the course of the semester, students will prepare business plans for their own social enterprises. Students may only receive credit for one of International Business 408 or Entrepreneurship 408. Prerequisite: Entrepreneurship 307.

Spring semester course, three hours.

ENTR 409. INTERNET ENTREPRENEURSHIP. This course will explore the foundational principles and essential components for launching a successful entrepreneurial endeavor on the Internet. The course will cover important topics related to Internet Entrepreneurship, including key entrepreneurial models, business concept development, opportunity analysis, advanced search marketing techniques, understanding user behavior, and creating a viable Internet model for business endeavors. Case studies and existing businesses will be examined in detail. Students will have the opportunity to study the journeys of successful Internet Entrepreneurs, to hear from experts in the field, and to create an original Internet business model in a team with other students.

Spring semester course, three hours.

ENTR 420. MENTORING. This course will help students learn and practice the skills necessary to establish and leverage valuable mentor relationships. The course consists of two dimensions: classroom study and one-on-one discussions with an experienced business leader. Students learn how to identify, establish and work with a mentor, to develop professional networks, to build relationships, and to determine the purpose and value of relationships in the world of the entrepreneur. Students will be prepared for typical mentorship discussion topics, such as a personal value statement, strengths assessment, a personal development plan, ethical leadership, professionalism, meaningful internships/summer jobs and finding one's calling. The course, designed for junior and senior Entrepreneurship majors, is open to any upper-division non-majors pending space available. Prerequisite: permission of the instructor.

Semester course, three hours.

ENTR 423. FAMILY BUSINESS MANAGEMENT. An upper-level course that will focus on the dynamic of the family-owned and operated business. Appropriate for students of family businesses or students anticipating working for a family business. Students explore the key management issues facing the family business today—interpersonal relations, succession, business functions of marketing, sales, financial management, etc., in the special context of the unique challenges and opportunities of the family-owned business. Students will hear from and interact with small and family business owners who have agreed to visit classes and share their experiences.

Spring semester only, three hours.

ENTR 424. SUPPLY CHAIN MANAGEMENT. The focus of this course is to provide an introduction to supply chain management. It will deal with both the logistical activities of demand fulfillment and the behavioral aspects of supply chain management. Experiential learning will take place within a simulation called, "Fundamentals of Supply Chain Management." This course will provide considerable insight into the management of supply chains. Students will develop disciplines and a knowledge of best practices that will facilitate their success in a world where demand and supply integration is one of the cornerstones of modern business. Students may not receive credit for both Management 424 and Entrepreneurship 424.

Spring semester only, three hours.

ENTR 426. MUSIC MARKETING. This course will provide students with an overview of key music marketing principles, terms, and practices, which together form the foundation for all music marketing plans. Students will dig into the key areas of opportunities for musicians, including publicity, advertising, promotion (online and traditional), digital distribution, touring, licensing/synch, and radio. Students will learn what companies and partners to work with to reach their core fans, how to communicate with them, and the ways to leverage the changes and new opportunities that the internet offers to marketers. In addition, they will learn marketing ideas to help them describe their vision, identify a market need, analyze an artist's fan base, learn from their competitors, set marketing plan goals, and find the perfect mix of new marketing strategies ranging from branding, product, price, place, promotion, and marketing information systems. Students may only receive credit for one of

Entrepreneurship 426, Marketing 426, or Music 426. Prerequisite: Marketing 204.

Fall semester only, three hours.

ENTR 430. ENTREPRENEURIAL FINANCE AND VENTURE CAPITAL. This course covers financial skills used by entrepreneurs and venture capitalists from the startup of a venture through its harvest. This includes a wide variety of topics including the financial elements of a business plan, the evaluation of new business opportunities, financial planning, sources of financing at different stages, valuation methods, essentials of security law, and methods of harvesting an investment. Prerequisite: Finance 301.

Fall semester only, three hours.

ENTR 460. INDEPENDENT STUDY. Individual study of specialized topics in entrepreneurship. Prerequisites: Senior standing and permission of the department chair.

Semester course, one, two or three hours.

ENTR 466. BUSINESS PLANNING. This course provides students from all majors with a vehicle for turning their business and non-profit ideas into concrete viable business plans. Either as individuals or as teams, students research, create, and present a plan for a viable business or non-profit organization. They are coached by the instructor and may also be matched to an appropriate mentor with experience in their area of interest. Successful completion of this course requires students to participate in the campus-wide business plan competition held during the spring semester. This course satisfies the Writing Intensive requirement for the Entrepreneurship major. Prerequisite: Entrepreneurship 430 and a business or non-profit idea.

Spring semester only, three hours.

ENTR 467. CORPORATE HEALTHCARE INNOVATION. In this course, students have a unique opportunity to explore real-world, healthcare-related business concepts in the context of working directly with a major healthcare corporation. A corporate innovation group works directly with Grove City College students each semester, providing students with health-related business and technology concepts that engage the students in terms of research, strategy, innovation and business case development. Students from a variety of disciplines collaborate in groups to explore, define, strategize, and develop the concept. The course utilizes a service learning model, and benefits from the constant support of representatives of the partner company, who regularly attend classes for input and feedback. At the end of the semester, students present their findings and recommendations to corporate design.

Semester course, three hours.

ENTR 468. INNOVATION FOR IMPACT. Innovation and creativity are widely recognized as drivers of success in today's world for both individuals and organizations. Whether entities are nonprofits, startups, small companies, large companies, or governmental units, they are all looking to employ people who understand innovation. This course will provide students with an understanding of how different entities can innovate using design thinking methodology. As we explore how to innovate in concept, we will use that knowledge to attack problems faced by real organizations in our own community to explore how applying design thinking methodologies can have true impact on real-world organizations. Students will emerge from this course with a toolbox of innovation techniques, real project work that they can use as examples of their practice of those techniques, and the confidence that they are creative and innovative people. Students may not receive credit for both Entrepreneurship 468 and Marketing 468.

Fall semester only, three hours.

ENTR 470. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in entrepreneurship. Senior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

ENTR 480. INTERNSHIP IN ENTREPRENEURSHIP. An opportunity for juniors and seniors, with a minimum of fifteen hours in their major, to participate in individual job experiences, domestic and international, under the supervision of an on-site manager and a department faculty member. Internship must be within an entrepreneurial organization. Products of the internship will include an evaluation by the on-site manager, a log of the internship experience, and a paper describing the experience. A comparison-contrast between academic learning and the internship experience will be

conducted. Prerequisite: Minimum grade point average, permission of department coordinator, and an appropriate job site. *Semester course, one to six hours.*

ENTR 488. SEMINAR IN ENTREPRENEURSHIP. An advanced course for junior and senior Entrepreneurship majors to concentrate on specific subject matter to be determined by the instructor. Individual research and extensive oral and written reports are required.

Semester course; one, two, or three hours.

BUSINESS PROGRAM: DEPARTMENT OF MANAGEMENT AND MARKETING

Dr. Carson, Chair; Dr. Biddle, Dr. Crute, Ms. Havrilla, Mr. Kocur, Dr. Markley, Dr. Powell, Mr. Snyder. Additional Instructional Faculty: Mr. Blaine, Mr. Coyne, Dr. DiStasi, Mr. Lewis.

The mission of the Business Program at Grove City College is to prepare our students to become effective and ethical leaders in business as well as in society as a whole. This mission incorporates the following learning outcomes:

1. **Business Knowledge and Analytical Skills-** Our students will possess the knowledge and analytical skills necessary in their professional field.
2. **Communication Skills-**Our students will possess the written and verbal skills needed to communicate effectively in a business environment.
3. **Ethics-**Our students will develop an understanding of business which reflects its moral and ethical responsibilities to all potential stakeholders.
4. **Global Perspective-**Our students will develop an understanding of the global and multi-cultural issues in the current business environment.

Three degree programs are offered in the Department of Management and Marketing: Bachelor of Science in International Business, Bachelor of Science in Management, and Bachelor of Science in Marketing. All three programs integrate the international aspects of business in course content as it applies to appropriate functional areas of study.

In addition to the three majors offered by the Department of Management and Marketing, the college also offers degree programs in Accounting, Business Economics, Economics, Entrepreneurship, Finance, and Computer Information Systems. For more details on these majors, see the listings in this catalog for the Departments of Accounting and Finance, Economics, Entrepreneurship, and Computer Science.

Course Requirements for a Bachelor of Science Degree in International Business (INBS)—82 hours

Business Core (33 hours):

Accounting 201, 202; Finance 301; International Business 305; Management 201, 203, 211, 214, 303, 486; and Marketing 204.

Math/Economics Courses (10 hours):

Economics 101, 102; and Mathematics 141 or 161.

Mathematics 141 prepares students in the business applications of calculus, but Mathematics 161 must be taken as a prerequisite for Mathematics 162 and 261.

International Business Core (9 hours):

Choose three courses from International Business 408, 445 (required for Management and Marketing concentrations); Economics 202, 206, 303; Entrepreneurship 307, 312; or Finance 462 (required for Accounting and Finance concentrations). With advance Department Chair approval, Accounting,

Entrepreneurship, Finance, International Business, Marketing, or Management 390 may count toward this requirement. Note: Students completing the Entrepreneurship Concentration may not count ENTR 312 toward the International Business Core.

Business Concentration (12 hours):

Complete one of the following six concentrations:

Accounting: Accounting 301, 303, 321, and any 300-400- level accounting course.

Economics: Economics 301, 302; and any two Economics courses. Note: Economics 202, 206, and 303 cannot be used to fulfill both the concentration and international business core requirements.

Entrepreneurship: Entrepreneurship 312, 430, and 466; and one course from Entrepreneurship 309, 318, or 423.

Finance: Finance 432, 440; and two courses from Finance 341, 434, 435, or 436.

Management: Management 457; and three courses from Management 302, 304, 307, 311, 433, 450, 458, 459, 464, or 475.

Marketing: Marketing 411, 419; and two courses from International Business 416; Management 424; Marketing 315, 412, 414, 415, 417, or 420.

Global Emphasis (6 hours):

Choose two courses from Communication Studies 225; any Global Studies (GOBL) course; or any non-United States History or Political Science course.

Foreign Language Concentration (12 hours):

Choose one of the following four options (for placement and course sequencing, consult with the Department of Modern Languages):

Chinese: Four Chinese courses, at least six hours of which must consist of Chinese 101, 102, 105, 201, 202, 301, 302, or other Chinese language course with the approval of the Chair of the Department of Modern Languages.

French: One course from French 301, 305, or 340; one course from French 307 or 309; and two 200-300-level French courses.

Spanish: Spanish 303 and three 200-300-level Spanish courses.

Other: Twelve credits in a single modern language with the approval of the Chair of the Department of Modern Language.

Foreign Study Requirement:

At least three hours must be earned outside the United States through an approved study abroad program (ABRD 300), Grove City College travel course, or Grove City College international internship.

Courses that count in the INBS major quality point average (MQPA):

All courses with “ACCT”, “CHIN”, “ENTR”, “FNCE”, “FREN”, “GERM”, “INBS”, “MARK”, “MNGT”, “SPAN” prefix, COMM 225, ECON 303, GOBL 300, excluding MNGT 106 and FNCE 105. A minimum MQPA of 2.00 is required to graduate.

This program focuses on the international context of business and is designed to prepare students for participation in worldwide business activity. This program combines substantial preparation in international business, business, modern languages, and other related international courses. International Business majors are strongly encouraged to take additional advanced courses in culture, literature, and grammar in their chosen language of study and to study an additional foreign language.

Course Requirements for a Bachelor of Science Degree in Management (MNGT)—67 hours

Business Core (33 hours):

Accounting 201, 202; Finance 301; International Business 305; Management 201, 203, 211, 214, 303, 486; and Marketing 204.

Math/Economics Courses (10 hours):

Economics 101, 102; and Mathematics 141 or 161.

Mathematics 141 prepares students in the business applications of calculus, but Mathematics 161 must be taken as a prerequisite for Mathematics 162 and 261.

Management Major Core (9 hours):

Management 457, 475, and one course from Management 307, 458, or 480*.

Management Concentration (15 hours):

Complete one of the following four concentrations:

Entrepreneurship: Entrepreneurship 101, 301; and nine hours from the following: Entrepreneurship 307, 309, 312, 314, 317, 433, 466; or Entrepreneurship or Management 480*.

Human Resources: Management 465 and 12 hours from the following (minimum of nine hours of ACCT and MNGT courses): Management 304, 307, 311, 433, 458, 480*; Accounting 303; Psychology 208, 214, 310; Sociology 208; Social Work 342 or 382.

Operations: Choose fifteen hours from the following (minimum of 12 hours of ACCT, INBS, MARK, and MNGT courses): International Business 445; Management 302, 307, 424, 433, 450, 458, 464, 480*; Marketing 325, 412, 414, 417; Accounting 303; Communication Studies 104, 303, 459; Psychology 214; Social Work 382; Sociology 375; or any Mechanical Engineering course.

Sports Management: Management 312, 313 (2 or 3 hours), 480 (3 hours); and six to seven hours from the following: Exercise Science 201, 220, 235, 305; Management 307, 311, 325, 433; Marketing 414, or 420.

*Note: Students choosing to complete an internship experience for both the Management Major Core elective and management concentration may not use a single internship experience to fulfill both requirements. In order to receive internship credit in both areas, students must complete two 3-credit internships, recommended during the summer following the sophomore and junior years. A maximum of six internship credits can be applied toward the 128 required for graduation.

Courses that count in the MNGT major quality point average (MQPA):

All courses with “ACCT”, “ENTR”, “FNCE”, “INBS”, “MARK”, “MNGT” prefix, excluding MNGT 106 and FNCE 105. A minimum MQPA of 2.00 is required to graduate.

The Management major prepares graduates for the modern challenges facing managers in many types of organizations.

Course Requirements for a Bachelor of Science Degree in Marketing (MARK)—67 hours

Business Core (33 hours):

Accounting 201, 202; Finance 301; International Business 305; Management 201, 203, 211, 214, 303, 486; and Marketing 204.

Math/Economics Courses (10 hours):

Economics 101, 102; Mathematics 141 or 161.

Mathematics 141 prepares students in the business applications of calculus, but Mathematics 161 must be taken as a prerequisite for Mathematics 162 and 261.

Marketing Management Major Core (12 hours):

Marketing 315, 411, 415, and 419.

Marketing Management Major Electives (12 hours):

Choose four courses from International Business 445; Management 424; Marketing 325, 412, 414, 417, 420, 426, 480 (or Marketing 390 with department chair approval).

Courses that count in the MARK major quality point average (MQPA):

All courses with “ACCT”, “ENTR”, “FNCE”, “INBS”, “MARK”, “MNGT” prefix, excluding MNGT 106 and FNCE 105. A minimum MQPA of 2.00 is required to graduate.

Marketing is the link between the organization and the marketplace. Every organization must understand both customers and competitors in order to survive.

Writing, Speaking and Information Literacy Intensive Courses

It is essential for students majoring in the Department of Management and Marketing to possess strong writing, speaking, and information literacy (knowing how to locate, analyze, and use information in decision-making) skills in preparation for careers in business/accounting or graduate studies. The curriculum requirements specifically designed to develop these skills include Management 214, *Business, Ethics, and Society* and Management 486, *Business Policy and Strategy*. Please see course descriptions that follow for more information.

Course Sequencing for the Business Core

For all majors within the Department of Management and Marketing, the following business core courses applicable to the major must be completed before the beginning of the junior year and prior to registering for any 400-level course in the Department: Accounting 201, 202; Management 201, 203, 211, 214; Marketing 204; Economics 101, 102; and Mathematics 141 or 161. International Business 305 and Finance 301 must be taken before the beginning of the senior year.

Course Requirements for a minor in Analytics (25 hours)

A minor in Analytics shall consist of 25 hours, including Computer Science 155 or Management 211; Mathematics 118, 210, or 213; Mathematics 201, 214, 331, or Management 201; Mathematics 141, 161, or 162; Economics 442; Finance 341, Finance 432, Computer Science 422, or Computer Science 445; Entrepreneurship 330 or Marketing 330; and Marketing 325.

Course Requirements for a minor in Business (18 hours)

(Restricted to non-Business Program majors only)

A minor in Business shall consist of Accounting 201, 202; Finance 301; Management 201, 203; and Marketing 204.

Course Requirements for a minor in International Business (18 hours)

(Restricted to non-International Business majors only)

A minor in International Business shall consist of International Business 305, 445; six hours of 200-level or higher foreign language courses; and two courses from International Business 416, Economics 206, 303, 390, or Entrepreneurship 307.

Course Requirements for a minor in Management (18 hours)

(Restricted to non-Management majors only)

A minor in Management shall consist of Management 203, 457, 475; and three courses from Management 302, 304, 307, 424, 433, 450, 458, 464, 465; or Marketing 325.

Course Requirements for a minor in Marketing (18 hours)

(Restricted to non-Marketing majors only)

A minor in Marketing shall consist of Marketing 204, 315, 411, 415, 419; and one course from Marketing 325, 412, 414, 417, 420; or Management 424.

Students are expected to contact their advisors for a detailed schedule of courses recommended to meet requirements for a major.

INTERNATIONAL BUSINESS (INBS)

INBS 260. INDEPENDENT STUDY. Individual study of specialized topics in international business. Sophomore standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

INBS 270. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in international business. Sophomore standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

INBS 305. GLOBAL BUSINESS ISSUES. Designed to acquaint the student with those aspects of international business management not associated with traditional functional areas including international trade; foreign currency transactions; theory and institutions; country analysis; and international business strategy. Prerequisites: Management 203 and Marketing 204.

Semester course, three hours.

INBS 360. INDEPENDENT STUDY. Individual study of specialized topics in international business. Prerequisites: Junior standing and permission of the department chair.

Semester course, one, two or three hours.

INBS 370. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in international business. Junior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

INBS 390. STUDIES IN INTERNATIONAL BUSINESS. Studies in areas of international business not fully covered by regular departmental offerings.

Semester course, three hours.

INBS 408. SOCIAL ENTREPRENEURSHIP PRACTICUM. Using case studies, lectures, and hands-on exercises, this course clarifies and illustrates the steps necessary to prepare to launch a social enterprise. Topics include the idea generation, business models, organizational structure, staffing, governance, funding, and measurement of social impact. Over the course of the semester, students will prepare business plans for their own social enterprises. Students may only receive credit for only one of International Business 408 or Entrepreneurship 408. Prerequisite: Entrepreneurship 307.

Spring semester only, three hours.

INBS 416. INTERNATIONAL MARKETING. An introduction to marketing management on a global scale including social and cultural dimensions of marketing; economic environments; political and financial risks; cross-cultural consumer behavior; and international product and channel decisions. Prerequisite: International Business 305.

Spring semester only, three hours.

INBS 445. INTERNATIONAL TRADE. This course surveys policies and international business practices of international trade, including coverage of international logistics, customs and tariffs,

export control law, international contracts, resolution of trade disputes, and international trade organizations. Prerequisite: International Business 305. *Fall semester only, three hours.*

INBS 460. INDEPENDENT STUDY. Individual study of specialized topics in international business. Prerequisites: Senior standing and permission of the department chair.

Semester course, one, two or three hours.

INBS 470. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in international business. Senior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

INBS 480. INTERNSHIP IN INTERNATIONAL BUSINESS. This is an opportunity for students to participate in a meaningful learning experience under the supervision of both an employer and a Management and Marketing Department faculty member. Most internships take place during the summer months. Students will be graded based on an employer performance evaluation along with a written paper and journal. Prerequisites: Good academic standing and completion of the freshman year of study.

Semester course, one to six hours.

MANAGEMENT (MNGT)

MNGT 106. FUNDAMENTALS OF BUSINESS. A general introduction to the organizational environment and operations of contemporary businesses. The course examines the United States business system and how it interacts with global systems; the basic management functions of planning, organizing, leading, and controlling; entrepreneurship and small businesses; marketing processes and consumer behavior; managing operations and information; and financial management. Integrated into these topics are Christian principles that should guide ethical business practices.

Semester course, three hours.

MNGT 201. BUSINESS STATISTICS. A course designed to familiarize the student with basic statistical techniques used in the management decision-making process, including probability distributions, descriptive statistics, confidence intervals, hypothesis testing, and parametric and nonparametric hypothesis testing. Students may only receive credit for one of Management 201, Mathematics 201, or Psychology 201.

Semester course, three hours.

MNGT 203. PRINCIPLES OF MANAGEMENT. An introductory study of the fundamental elements of management leadership. The course addresses not only the general management functions of decision-making, planning, organizing, leading, and controlling but also the related topics of information systems, the value chain, and organizational politics. The traits and behaviors of effective managers and leaders are emphasized. Management themes are considered with particular focus on the changing business environment and the application of Christian principles.

Semester course, three hours.

MNGT 211. BUSINESS COMPUTER APPLICATIONS. This course provides business majors with instruction and practical exercises using Microsoft Office to solve business problems. It integrates applications of Microsoft Office into the business environment in such a way that students learn to use the software to prepare reports, design oral presentations, collaborate with one another, and utilize spreadsheets to organize information and summarize data. Business, accounting, financial and scientific problems and applications are emphasized. This course must be taken in the freshman or sophomore year.

Semester course, three hours.

MNGT 214. BUSINESS, ETHICS, AND SOCIETY. An examination of various ethical and moral issues arising in contemporary business and its activities which affect our society and the world. This course also examines the nature and purpose of economic life and contemporary business, especially from the Christian perspective. This course satisfies the Writing Intensive (WI) and Information Literacy (IL) requirements for all business majors. Prerequisite: Sophomore standing.

Semester course, three hours.

MNGT 260. INDEPENDENT STUDY. Individual study of specialized management topics. Sophomore standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

MNGT 270. INDEPENDENT RESEARCH. An opportunity to conduct supervised management-related research. Sophomore standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

MNGT 302. LEAN MANAGEMENT. An examination of the general theory of lean management and the twenty keys to workplace improvement. Topics include just-in-time, supplier development, and skill versatility.

Semester course, three hours.

MNGT 303. BUSINESS LAW. A survey of law crucial to the conduct of business, including an introduction to the nature of law, legal reasoning, and dispute resolution as well as to the law of contracts, torts, crimes, agency, business associations, and intellectual property. Students may not receive credit for both Management 303 and Entrepreneurship 303.

Semester course, three hours.

MNGT 304. LEGAL ENVIRONMENT OF BUSINESS. Managers need to be prepared to understand and navigate the complex world of federal and state regulation on topics such as employment law, antitrust law, environmental law, consumer protection law, internet law, intellectual property law, and securities law. This course not only provides a thorough consideration of the applicable law, but also addresses the ethical principles, fundamental values, and policy issues relevant to each topic. Prerequisite: Management 303 or Entrepreneurship 303.

Semester course, three hours.

MNGT 307. TEAMS AND TEAM LEADERSHIP. This course provides the student with team-building skills, team dynamics, and a team-oriented problem-solving methodology within the context of the Deming management philosophy. Prerequisite: Sophomore standing.

Semester course, three hours.

MNGT 308. INTELLECTUAL PROPERTY LAW. This course examines the theory and practice of the law of patents, copyright, trademarks, trade secrets and other forms of intellectual property protections. The course explores the interrelationship between intellectual property law and the First Amendment and also explores issues raised by technological advances, recent changes in the law, and the internationalization of business. The course includes guest lectures by industry experts and is designed for business, entrepreneurship, engineering, science and pre-law students. Recommended preparation: Management 303 or Entrepreneurship 303.

Spring semester only, three hours.

MNGT 311. NEGOTIATION. Negotiation is the art and science of securing agreements between two or more parties who are interdependent and who are seeking to maximize their outcomes. The central issues of this course deal with understanding the behavior of individuals, groups, and organizations in the context of competitive situations. It is designed to complement the technical and diagnostic skills learned in other courses, with a basic premise being that while a manager needs analytical skills to discover optimal solutions to problems, a broad array of negotiation skills are needed for these solutions to be accepted and implemented. Considerable emphasis will be placed on simulations, role-playing, and cases.

Fall semester only, three hours.

MNGT 312 PRINCIPLES OF SPORTS MANAGEMENT AND MARKETING. This course explores the basic concepts and principles of the sport and recreation business. Emphases will be on the principles of management, marketing, finance, and economics applied to sports management and marketing. Topics include event and venue management, legal considerations, sales, promotion, revenue generation, branding, and public relations. Prerequisites: Management 203 and Marketing 204.

Fall semester only, three hours.

MNGT 313 SPORT AND EVENT MANAGEMENT PRACTICUM. This course is designed to introduce students to the logistics of sport event and venue management. Student will obtain hands on experience in planning, organizing, marketing, managing risk, managing facilities, working with

stakeholders, and other related activities in the course of administering an actual sporting event.

Prerequisites: Management 312 and junior standing. *Spring semester only, two to three hours.*

MNGT 323. ADVANCED BUSINESS LAW. Exploration of advanced legal topics important for business and accounting including negotiable instruments; agency; secured transactions and creditors' rights; bankruptcy; forms of business associations; securities law; and real property. Prerequisite: Management 303. *Spring semester only, three hours.*

MNGT 326. INTRODUCTION TO THE BUSINESS OF MUSIC. This course is designed as an introduction to the business of music, providing students with the latest instruction on best practices for music creators, consumers, and facilitators working in this field. Students will have the opportunity to learn the fundamental principles involved in the entrepreneurial and legal dimensions of the music business, exploring the structural and functional components of this ever-changing and rapidly-growing industry. Particular attention will be given to the challenges of starting, growing and managing a music business in the digital era. Students may only receive credit for one of Entrepreneurship 326, Management 326, or Music 326. *Semester course, three hours.*

MNGT 360. INDEPENDENT STUDY. Individual study of specialized management topics. Prerequisites: Junior standing and permission of the department chair.

Semester course, one, two or three hours.

MNGT 370. INDEPENDENT RESEARCH. An opportunity to conduct supervised management-related research. Junior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

MNGT 390. STUDIES IN MANAGEMENT. Studies in areas of management not fully covered by regular departmental offerings.

Semester course, three hours.

MNGT 424. SUPPLY CHAIN MANAGEMENT. The focus of this course is to provide an introduction to supply chain management. It will deal with both the logistical activities of demand fulfillment and the behavioral aspects of supply chain management. Experiential learning will take place within a simulation called, "Fundamentals of Supply Chain Management." This course will provide considerable insight into the management of supply chains. Students will develop disciplines and a knowledge of best practices that will facilitate their success in a world where demand and supply integration is one of the cornerstones of modern business. Students may not receive credit for both Management 424 and Entrepreneurship 424.

Spring semester only, three hours.

MNGT 433. RISK AND INSURANCE. An introduction to and study of risk and liability exposures that face businesses and individuals. Topics include risk management techniques, the insurance industry, and employee benefits packages. Prerequisite: Junior or senior standing.

Spring semester only, three hours.

MNGT 450. QUALITY MANAGEMENT. An examination of the philosophies, principles, and techniques used to study, gain control, and improve processes. Topics include the thought leaders, Six Sigma, tools of QC, designed experiments, and the Baldrige Award criteria. Prerequisite: Management 201 or equivalent.

Spring semester only, three hours.

MNGT 457. HUMAN RESOURCES MANAGEMENT. This course examines the principles, policies and practices of human resources important for being an effective manager in today's organizations. Human resource topics include EEOC and legal guidelines, recruitment, selection, training, compensation, employee appraisal, and discipline systems. Prerequisite: Management 203 and junior or senior standing.

Fall semester only, three hours.

MNGT 458. ORGANIZATIONAL BEHAVIOR. An examination of individual, interpersonal, and organizational processes in contemporary organizations emphasizing motivation, job design, performance management, group and team dynamics, leadership, and decision-making. Also covered are organizational culture, design, and change management. The course emphasizes contemporary

theories and trends in organizational structures and processes. The course includes extensive use of case studies and applications of theories to management practice. Prerequisite: Management 203.

Semester course, three hours.

MNGT 459 ORGANIZATIONAL CHANGE AND CONSULTING. This course focuses on organizational creation, growth, and change. Students learn how to function as an internal change agent or consultant and how to choose and manage external consultants. Using lecture and case discussion, students apply business problem diagnosis and problem-solving skills in the context of small, medium, and large organizations. Students may work in teams. Concluding project is the creation of a "living" case study by studying an existing company and writing a case analysis of a selected problem, complete with recommendations for action. Students conclude the class by presenting their case findings and recommendations to the client company. Prerequisite: Management 203 and junior standing.

Spring semester only, three hours.

MNGT 460. INDEPENDENT STUDY. Individual study of specialized management topics. Prerequisites: Senior standing and permission of the department chair.

Semester course, one, two or three hours.

MNGT 461 PREDICTIVE ANALYTICS. Business Analytics is the art and science of leveraging data across multiple organizations and people to improve business decision making. This case-based course introduces students to the challenges in implementing analytics in a business environment from the perspective of both managers and analysts. In addition to studying and employing relevant data analysis tools and models throughout the semester, students will also identify actions that managers can take based on the measured relationships. Prerequisite: Management 201, Psychology 201, Engineering 274, or Mathematics 201.

Fall semester only, three hours.

MNGT 463 GAME THEORY: MODELS FOR BUSINESS. This course provides the foundations of game theory's analytical framework for studying business decisions which involve two or more firms. Game theory can be an important additional tool for managers in the analysis of business decisions. The course will focus primarily on the application of game theory in decisions regarding strategic pricing, entry-mode decisions, optimal wages, promotion, and innovation. In addition to learning particular models, students will also consider how managers can leverage various information and data sources to apply these models to specific environments. Prerequisite: Mathematics 141, 161, or 162.

Alternate years, fall semester only, three hours.

MNGT 464. SIX SIGMA MANAGEMENT. This course examines the thought leaders, theories, concepts, and principles of the Six Sigma quality management program. Prerequisite: Management 201 or equivalent.

Spring semester only, three hours.

MNGT 465. ADVANCED HUMAN RESOURCES AND BENEFIT ADMINISTRATION. This course provides an in-depth examination of advance topics in human resource management and the principles and practices of employee benefit administration for organizations. Emphasized topics include collective bargaining, labor relations, recruitment and retention strategies, and benefit package design. Prerequisite: Management 457.

Spring semester only, three hours.

MNGT 470. INDEPENDENT RESEARCH. An opportunity to conduct supervised management-related research. Senior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

MNGT 475. LEADERSHIP. A study of historical and current perspectives on leadership with emphasis on leadership theories; Christian principles in leadership; leadership in the new international economy; the attributes of effective contemporary business leaders; development of leadership skills; and case studies of current and past leaders. Prerequisites: Management 203 and junior or senior standing.

Semester course, three hours.

MNGT 480. INTERNSHIP IN MANAGEMENT. This is an opportunity for students to participate in a meaningful learning experience under the supervision of both an employer and a Management and

Marketing Department faculty member. Most internships take place during the summer months. Students will be graded based on an employer performance evaluation along with a written paper and journal. Prerequisites: Good academic standing and completion of the freshman year of study.

Semester course, one to six hours.

MNGT 486. BUSINESS POLICY AND STRATEGY. This business capstone course addresses senior management's development and implementation of an organization's mission and strategy. Emphasis is placed on how enterprises use their strengths to take advantage of opportunities in their competitive marketplace. Global competition and international markets are also addressed. This course satisfies the Speaking Intensive (SI) requirement in the major. Limited to seniors in the Departments of Accounting & Finance and Management & Marketing only.

Semester course, three hours.

MARKETING (MARK)

MARK 204. PRINCIPLES OF MARKETING. An introduction to marketing theory and application. Study focuses on strategic planning and positioning, the marketing mix (product, price, promotion, place) and marketing ethics. Analysis of current marketing efforts is an integral part of the course. The goal is to teach students how to become both effective marketers and more informed consumers.

Semester course, three hours.

MARK 260. INDEPENDENT STUDY. Individual study of specialized marketing topics. Sophomore standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

MARK 270. INDEPENDENT RESEARCH. An opportunity to conduct supervised marketing research. Sophomore standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

MARK 315. DIGITAL MARKETING. This course provides an in-depth study of the rapidly growing and evolving area of digital marketing. In addition to understanding the basic components of digital marketing, students will focus on learning how specific areas of digital marketing, including the Internet, social media, and mobile technology can be utilized as integrated parts of a comprehensive marketing plan. Lecture, case studies, guest speakers, and in-class exercises will be utilized to provide understanding and relevancy of this key component within the marketing discipline. Prerequisite: Marketing 204.

Semester course, three hours.

MARK 325. BUSINESS ANALYTICS AND DECISION MAKING. Businesses today are dealing with an ever-increasing velocity and variety of data. Beyond just crunching numbers, analytics in business today demands an understanding of the strategic role data can play in an organization, the capacity to draw insights from data, and the ability to broadly communicate findings to drive better business decision making. Through the use of lecture, case analysis, and hands-on exercises, this course will prepare business students for a data driven business world by highlighting fundamental analytical tools, outlining how technology enables and empowers business decision making, and by exploring cutting edge trends in business analytics and decision making. Prerequisite: Sophomore standing.

Spring semester only, three hours.

MARK 328. INTERNET CONTENT MARKETING. Students will probe the subject of Internet content marketing as a core discipline for 21st century entrepreneurs. They will learn essential concepts for strategic content development and web-based thought leadership, and will acquire skills for use with practical web applications. Students will engage in a semester-long project using WordPress to publish Internet content for a company or organization, employing techniques learned in a class. The structure of the class will include two teaching sessions per week and a WordPress lab. Students may not receive credit for both Marketing 328 and Entrepreneurship 328. *Fall semester only, three hours.*

MARK 330. SEARCH ENGINE OPTIMIZATION. Students will explore the fundamental principles and best practices in the field of search engine optimization. They will learn and develop the essential knowledge and skills required to achieve favorable organic rank in the most important

search engines and will become familiar with and interact with experts in the industry. Case studies and actual business scenarios will be examined in detail. Students will have opportunity to conduct SEO research for small businesses and non-profit organizations in semester-long team projects with other students. Students may not receive credit for both Marketing 330 and Entrepreneurship 330.

Spring semester only, three hours.

MARK 360. INDEPENDENT STUDY. Individual study of specialized marketing topics. Prerequisites: Junior standing and permission of the department chair.

Semester course, one, two or three hours.

MARK 370. INDEPENDENT RESEARCH. An opportunity to conduct supervised marketing research. Junior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

MARK 390. STUDIES IN MARKETING. Studies in areas of marketing not fully covered by regular departmental offerings.

Semester course, three hours.

MARK 411. MARKETING RESEARCH. An introduction to the major areas of research in marketing with attention given to problem definition, research design, questionnaire development, sampling, interviewing, and analysis to assist marketing management with the decision-making process, using both theoretical and empirical concepts of marketing research. Prerequisites: Management 201 or instructor approval, and Marketing 204.

Fall semester only, three hours.

MARK 412. RETAIL MANAGEMENT. An in-depth look at the dynamic field of retail marketing. A balanced blend of theory and application (using current examples) will help students learn how to analyze and develop effective retailing strategies. Emphasized topics include buying, merchandising, and selling functions; inventory, financial, and employee management; and targeting, location and promotion objectives. Prerequisite: Marketing 204 and junior or senior standing.

Spring semester only, three hours.

MARK 414. SALES. Students study the client-focused, non-manipulative sales process and how high-performing, achievement-oriented sales professionals are managed. Through the use of lecture, case discussion and interaction with practicing sales professionals, students learn and apply the principles of professional salesmanship and the role of sales management in the firm. Non-Marketing majors may take the course with instructor's permission. Prerequisite: Marketing 204.

Fall semester only, three hours.

MARK 415. STRATEGIC MARKETING. An in-depth exploration and application of marketing strategy in the small, medium, and large firm. Students will build upon the theoretical framework of consumer behavior and competitive analysis by developing applied marketing plans. While focused on marketing, the plans will also incorporate financial and management strategies. This is a capstone marketing class and requires the utilization of prior business course work and experience. Prerequisite: Marketing 204 and junior standing.

Spring semester only, three hours.

MARK 417. NEW PRODUCT DEVELOPMENT AND MANAGEMENT. This course encompasses a comprehensive study of the new product development and management process and is intended for students who are interested in learning how new products and services are developed and managed. Since new product development is a cross functional discipline, the content is relevant for students preparing to lead an organization to understand customer needs, to translate those needs to new products and services, and to profitably grow the business. Prerequisite: Marketing 204.

Spring semester only, three hours.

MARK 419. CONSUMER BEHAVIOR. An examination of consumer decision processes in the marketplace, emphasizing the effects of external factors such as culture, subcultures, reference groups, demographics, and social status; the effects of internal factors such as motivation, personality, learning, emotion, and attitudes; the steps in the decision process; and differences between individual and organizational buyers. Prerequisite: Marketing 204 and junior or senior standing.

Spring semester only, three hours.

MARK 420. ADVERTISING. A critical exploration of the purposes and functions of advertising and sales promotion in the growth and development of the global market economy. Included are the study of ethics; corporate responsibility in advertising and promotion; basic principles of researching, creating, and planning campaigns; and concepts of effective sales promotion. Prerequisite: Marketing 204 and junior or senior standing.

Fall semester only, three hours.

MARK 426. MUSIC MARKETING. This course will provide students with an overview of key music marketing principles, terms, and practices, which together form the foundation for all music marketing plans. Students will dig into the key areas of opportunities for musicians, including publicity, advertising, promotion (online and traditional), digital distribution, touring, licensing/synch, and radio. Students will learn what companies and partners to work with to reach their core fans, how to communicate with them, and the ways to leverage the changes and new opportunities that the internet offers to marketers. In addition, they will learn marketing ideas to help them describe their vision, identify a market need, analyze an artist's fan base, learn from their competitors, set marketing plan goals, and find the perfect mix of new marketing strategies ranging from branding, product, price, place, promotion, and marketing information systems. Students may only receive credit for one of Entrepreneurship 426, Marketing 426, or Music 426. Prerequisite: Marketing 204.

Fall semester only, three hours.

MARK 460. INDEPENDENT STUDY. Individual study of specialized marketing topics. Prerequisites: Senior standing and permission of the department chair.

Semester course, one, two or three hours.

MARK 468. INNOVATION FOR IMPACT. Innovation and creativity are widely recognized as drivers of success in today's world for both individuals and organizations. Whether entities are nonprofits, startups, small companies, large companies, or governmental units, they are all looking to employ people who understand innovation. This course will provide students with an understanding of how different entities can innovate using design thinking methodology. As we explore how to innovate in concept, we will use that knowledge to attack problems faced by real organizations in our own community to explore how applying design thinking methodologies can have true impact on real-world organizations. Students will emerge from this course with a toolbox of innovation techniques, real project work that they can use as examples of their practice of those techniques, and the confidence that they are creative and innovative people. Students may not receive credit for both Marketing 468 and Entrepreneurship 468.

Fall semester only, three hours.

MARK 470. INDEPENDENT RESEARCH. An opportunity to conduct supervised marketing research. Senior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

MARK 480. INTERNSHIP IN MARKETING. This is an opportunity for students to participate in a meaningful learning experience under the supervision of both an employer and a Management and Marketing Department faculty member. Most internships take place during the summer months. Students will be graded based on an employer performance evaluation along with a written paper and journal. Prerequisites: Good academic standing and completion of the freshman year of study.

Semester course, one to six hours.

DEPARTMENT OF CHEMISTRY

Dr. Augspurger, Chair; Dr. Cramer, Dr. DiStasi, Dr. Falcetta, Dr. Guevara, Dr. T. Homan, Dr. Kriley, Dr. Shaw, Dr. Wong.

CHEMISTRY DEPARTMENT MISSION STATEMENT, OBJECTIVES, AND OUTCOMES

The Department of Chemistry is traditional in its approach to the discipline of chemistry and offers a rigorous and well-balanced curriculum. This provides the student with a strong preparation for graduate studies and/or a career in chemistry. The department faculty expertise covers all major areas of chemistry. A variety of research experiences are available to majors through ongoing faculty research programs. In addition, the department attempts to instill in its students an awareness of the beauty and design in nature that reflects the creative hand of God.

There are four separate majors offered within the department:

- **Chemistry:** The traditional chemistry major provides a strong preparation for graduate school or employment in the chemical industry.
- **Biochemistry:** This major provides a strong preparation for graduate or professional schools or for employment in biochemical, molecular biology or genetics industry.
- **Chemistry Secondary Education Certification:** This major prepares the student for teaching chemistry at the secondary school level. It is a program that combines a traditional chemistry curriculum with a number of education courses.
- **Chemistry and General Science Secondary Education Certification:** This is essentially the same as Chemistry Secondary Education major. These students, however, in addition to all the chemistry and education courses will take Astronomy and either Geology or Environmental Science. This will qualify them for General Science certification.

Success in the chemical profession requires the ability to search the chemical literature and chemical databases and to effectively communicate that information in written and oral form. Chemists need to be proficient with software designed to operate instruments, analyze data and present results. The Writing Intensive (WI), Speaking Intensive (SI) and Information Literacy (IL) courses in the Chemistry Department are designed to fulfill these academic and professional requirements.

Chemistry Department Program Objectives

Graduates will be prepared with the knowledge and technical skills to successfully pursue career paths in the chemical industry, secondary education, chemistry graduate studies or other professional programs.

Graduates will be prepared to display critical thinking and problem-solving skills to enable them to learn, grow and be effective throughout their professional careers.

Graduates will gain knowledge and develop skills within the context of a Christian worldview, including the Christian foundations of science and the practice of chemistry, both ethical and in conduct, according to Christian principles.

Chemistry Department Program Outcomes

Graduates of the Chemistry Department will demonstrate:

1. Knowledge in the areas of general, analytical, organic, physical, inorganic chemistry and biochemistry according to ACS standards.

2. An ability to apply chemical principles and knowledge to solving chemical problems.
3. Knowledge of the mathematical and physical basis of chemical theories.
4. An ability to use laboratory techniques and skills to effectively conduct experiments and interpret results.
5. An ability to accurately maintain a laboratory notebook.
6. Proficiency in the operation of modern instrumentation and the ability to analyze and interpret instrumental data.
7. An ability to search the chemical literature as well as read and comprehend content in professional chemistry journals.
8. An ability to effectively communicate chemical information in written and oral forms according to ACS guidelines.
9. Knowledge of the foundations and the practice of science from a Christian perspective.

Departmental policy limits students to one major within the Department of Chemistry.

Course Requirements for Bachelor of Science Degree in Chemistry (CHEM)—75 hours

Chemistry Core (42 hours):

Chemistry 101, 102, 227, 231, 235, 241, 242, 245, 345, 346, 406, 422, 431, and 488.

Chemistry Concentration (10 hours):

Choose one of the following four options:

- **No concentration:** choose any 10 hours of Chemistry electives from the choices below.
- **ACS Certified:** Chemistry 351, 463; and four hours of Chemistry electives from the choices below.
- **Biochemistry:** Chemistry 351, 352 and two hours of Chemistry electives from the choices below.
- **Computational Modeling:** Computer Science 220, 222; Chemistry 445, 471 and eight hours of Chemistry electives from the choices below. Note: This concentration requires 18 hours of study.
- **Physical Chemistry:** Chemistry 441, 445 and six hours of Chemistry electives from the choices below.
- **Synthetic Chemistry:** Chemistry 453, 458 and six hours of Chemistry electives from the choices below.

Chemistry Electives: Chemistry 351, 352, 441, 445, 453, 458, 463, and 466.

Major-Related requirements (23 hours):

Computer Science 141 or 155; Mathematics 161, 162, and 261; and Physics 101-102 or 121-122.

Courses that count in the CHEM major quality point average (MQPA):

All courses with “CHEM” prefix. A minimum MQPA of 2.00 is required to graduate.

Course Requirements for a Bachelor of Science Degree in Chemistry Secondary Education Certification (CSED)—102 hours

Chemistry Core (38 hours):

Chemistry 101, 102, 227, 231, 235, 241, 242, 345, 346, 351, 402, and 488.

Major-Related requirements (24 hours):

Mathematics 161, 162, and 261; Physics 101-102 or 121-122; and Science 202.

Education requirements (40 hours):

Education 202, 203, 204, 305, 309, 371, 431, 488; Psychology 102; and Special Education 101.

Courses that count in the CSED major quality point average (MQPA):

All courses with “CHEM” and “EDUC” prefixes, PSYC 102, and SEDU 101. A minimum MQPA of 2.00 is required to graduate.

Course Requirements for a Bachelor of Science Degree in Chemistry and General Science Secondary Education Certification (CGSE)—108-109 hours**Chemistry Core (38 hours):**

Chemistry 101, 102, 227, 231, 235, 241, 242, 345, 346, 351, 402, and 488.

Major-Related requirements (30-31 hours):

Astronomy 206 or 207; Geology 201 or Science 204; Mathematics 161, 162, and 261; Physics 101-102 or 121-122; and Science 202.

Education requirements (40 hours):

Education 202, 203, 204, 305, 309, 371, 431, 488; Psychology 102; and Special Education 101.

Courses that count in the CGSE major quality point average (MQPA):

All courses with “CHEM” and “EDUC” prefixes; ASTR 206 and 207; GEOL 201; SCIC 202, 204; PSYC 102; and SEDU 101. A minimum MQPA of 2.00 is required to graduate.

Course Requirements for Bachelor of Science Degree in Biochemistry (BIOC)—74 hours**Biochemistry Core (55 hours):**

Chemistry 101, 102, 227, 231, 235, 241, 242, 342, 351, 352, 451, 487; Biology 101, 102, 233, and 234.

Major-Related requirements (19 hours):

Mathematics 161, 162; Physics 121-122 or 101-102; and Psychology 201.

Courses that count in the BIOC major quality point average (MQPA):

All courses with “CHEM” and “BIOL” prefixes. A minimum MQPA of 2.00 is required to graduate.

Course Requirements for a concentration in Chemical Synthesis (8 hours)

Students majoring in Biochemistry can earn a concentration in Chemical Synthesis by completing Chemistry 422, 431, 453, and 458.

Course Requirements for a concentration in Health (11-12 hours)

Students majoring in Biochemistry can earn a concentration in Health by completing Biology 341 or 346; Biology 407; and one of Biology 313, 314, 325, 341, or 346.

Course Requirements for a minor in Chemistry (24 hours)

A minor in Chemistry will consist of Chemistry 101 or 105; Chemistry 102, 227, and 241; and eight hours from Chemistry 231, 242, 245, 342, 345, 346, 406, or 431.

Course Requirements for a minor in Chemical Engineering (19-20 hours)

A minor in Chemical Engineering will consist of Engineering 220, 320, 420; Mechanical Engineering 325, 326, 352; and one of Mechanical Engineering 214, Chemistry 346, or Physics 340.

Students are expected to contact their advisors for a detailed schedule of courses recommended to meet requirements for a major.

CHEMISTRY (CHEM)

CHEM 101. GENERAL CHEMISTRY I. An introductory survey of the fundamental principles of chemistry including chemical reactions and stoichiometry, chemical formulas, nomenclature of compounds, gas laws, redox reactions, thermochemistry of physical change, crystal structures and the enthalpy of chemical change. Three lectures and one lab per week. No credit will be given to students who have already received credit for Chemistry 105. *Fall semester only, four hours.*

CHEM 102. GENERAL CHEMISTRY II. An introductory survey of the fundamental principles of chemistry including concepts and theories of rates of reaction, chemical equilibrium, Aqueous equilibria, electrochemistry, coordination chemistry, nuclear chemistry, main group chemistry, and an introduction to organic chemistry. A working knowledge of the following instruments: bench top GC, IC Metrohm, UV-Vis diode array pH meter, and Spectronic 20 will also be expected by the end of the semester. Three lectures and one lab per week. Prerequisite: Chemistry 101 or 105. *Spring semester only, four hours.*

CHEM 105. CHEMISTRY FOR ENGINEERS. An introductory survey in the fundamental principles of chemistry, including chemical reactions and equations; behavior of gases; chemical thermodynamics; basics of electrochemistry; crystal structure; and nuclear, organic, and environmental chemical fundamentals. Three lectures and one lab per week. *Fall semester only, four hours.*

CHEM 227. ANALYTICAL CHEMISTRY. A study of the theoretical basis and laboratory techniques necessary for the solution of problems in quantitative chemical analysis. Three lectures and one lab per week. Prerequisite: Chemistry 102. *Fall semester only, four hours.*

CHEM 231. DESCRIPTIVE INORGANIC/BIOINORGANIC CHEMISTRY. A survey of descriptive inorganic and bioinorganic chemistry. The course is designed to give students an introduction to main group inorganic chemistry, bioinorganic chemistry, and molecular symmetry/group theory. Two lectures per week. Prerequisite: Chemistry 102 or 105. *Spring semester only, two hours.*

CHEM 235. CHEMISTRY IN CONTEXT. Building on the foundation of General Chemistry, topics include current issues in chemistry, research and career opportunities, ethics and the integration of the Christian faith, researching the chemical literature and an introduction to modern instrumentation. This course fulfills the Information Literacy (IL) requirement for majors in the Department of Chemistry. Prerequisite: Chemistry 102. *Fall semester only, one hour.*

CHEM 422 INORGANIC SYNTHESIS LABORATORY. This course involves the synthesis and physical characterization of inorganic and organometallic compounds of main group and transition metal compounds. Two labs per week. Prerequisites: Chemistry 231 and 242. *Fall semester only, two hours.*

CHEM 242. ORGANIC CHEMISTRY II. A continued study in the chemistry of organic compounds including conjugated systems, aromatic compounds, aldehydes and ketones, carboxylic acids and their derivatives, amines and biological molecules. Structure determination by spectroscopic methods is emphasized. Three lectures and one lab per week. Prerequisite: Chemistry 241. *Spring semester only, four hours.*

CHEM 245. INTRODUCTION TO MOLECULAR MODELING. An introduction to the application of molecular modeling to the structure, reactivity and spectra of molecules. The focus will be on what can be accomplished using presently available computational chemistry programs and how to use the programs to accomplish these tasks. The theoretical background of the techniques and algorithms is treated from a user's perspective, emphasizing practical impacts of various choices the user can make in choosing methodology. Students apply the techniques covered in class to small chemical systems and compare results of various approximations. Two lectures per week. Prerequisites: Chemistry 241 and Mathematics 161. *Spring semester only, two hours.*

CHEM 260. INDEPENDENT STUDY. Individual study of specialized topics in chemistry. Sophomore standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

CHEM 270. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in chemistry. Sophomore standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

CHEM 342. PHYSICAL CHEMISTRY OF BIOLOGICAL SYSTEMS. An overview of physical chemistry with particular application to life sciences. Topics include thermodynamics, equilibrium, kinetics, molecular motion, molecular spectroscopy, molecular structure and modeling. Three lectures and one lab per week. Prerequisites: Chemistry 241 and Mathematics 162. *Spring semester only, four hours.*

CHEM 345. MICROSCOPIC PHYSICAL CHEMISTRY: QUANTUM MECHANICS AND SPECTROSCOPY. An introduction to the principles of quantum mechanics and their application in describing molecular properties. An emphasis is placed on developing a solid understanding of the principles of spectroscopy. Three lectures and one lab per week. Prerequisites: Chemistry 102 or 105; Chemistry 231; and Mathematics 261. *Fall semester only, four hours.*

CHEM 346. MACROSCOPIC PHYSICAL CHEMISTRY: STATISTICAL MECHANICS, THERMODYNAMICS, AND KINETICS. The relationships between the properties of macroscopic systems are developed to gain an understanding of chemical equilibrium. The principles of statistical mechanics are introduced to show how thermodynamic properties can be predicted from molecular properties described by quantum mechanics. Connections are developed between chemical kinetics and reaction mechanisms. Three lectures and one lab per week. Prerequisites: Chemistry 102 or 105, and Mathematics 261. *Spring semester only, four hours.*

CHEM 351. BIOCHEMISTRY I. An introduction to the molecular forces, equilibria and macromolecules that comprise living organisms. Emphasis is placed on proteins as the enzymatic catalysts of metabolism and the central role of carbohydrates in intermediary metabolism. Three lectures and one lab per week. Prerequisite: Chemistry 242. *Fall semester only, four hours.*

CHEM 352. BIOCHEMISTRY II. A continued study of the molecular forces, equilibria and macromolecules that comprise living organisms. Emphasis is on the structures and biological roles of lipids, proteins and nucleic acids. There is also a focus on experimental methods and related molecular technologies. Three lectures and one lab per week. Prerequisite: Chemistry 351. *Spring semester only, four hours.*

CHEM 360. INDEPENDENT STUDY. Individual study of specialized topics in chemistry. Junior standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

CHEM 370. INDEPENDENT RESEARCH. Juniors who have displayed aptitude in chemistry perform assigned research problems. This course may not be taken concurrently with Chemistry 499. Three hours of laboratory work per week per credit hour. Junior standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one or two hours.*

CHEM 390. STUDIES IN CHEMISTRY. This course is used to present various advanced topics in chemistry. *Semester course, one to three hours.*

CHEM 402. TECHNIQUES IN CHEMISTRY CLASSROOM AND LABORATORY INSTRUCTION. A course limited to Chemistry Secondary Education (CSED) and General Science Secondary Education (CGSE) majors involving instruction and experience in setting up and conducting effective educational chemistry demonstrations and laboratories. Students will also gain experience in scientific lecture preparation, including multiple lecture opportunities both in the classroom and laboratory settings. Prerequisites: Chemistry 227 and 241.

Alternate years, fall semester only, two hours.

CHEM 406. INSTRUMENTAL ANALYSIS. A course focused on instrumental theory, methods and design, and the application of modern instrumentation in chemical analysis. Two lectures and two labs per week. Prerequisite: Chemistry 227; Recommended: Chemistry 346.

Spring semester only, four hours.

CHEM 421. INORGANIC/BIOINORGANIC CHEMISTRY. This course is a short survey of inorganic chemistry with an in-depth treatment of transition metal chemistry and its application to biological systems and molecules. It is important for the student to become aware that many important biological molecules have transition metal atoms at their active sites and the definitive role that these metal centers play in their chemistries. Prerequisites: Chemistry 231 and 242.

Fall semester only, two hours.

CHEM 422 INORGANIC SYNTHESIS LABORATORY. This course involves the synthesis and physical characterization of inorganic and organometallic compounds of main group and transition metal compounds. Two labs per week. Prerequisites: Chemistry 231 and 242; Corequisite: Chemistry 421.

Fall semester only, two hours.

CHEM 428. ORGANOMETALLIC CHEMISTRY. A study of the synthesis and properties of organometallic compounds and their role in modern catalytic processes. The rapidly growing areas of bioinorganic and bioorganometallic chemistry is discussed. Three lectures per week. Prerequisite: Chemistry 421.

Spring semester only, three hours.

CHEM 431. ADVANCED INORGANIC/ORGANOMETALLIC CHEMISTRY. An in-depth study of transition metal chemistry. The relationships between the symmetry of molecules and their physical and chemical properties will be explored, as well as the role that organometallic compounds play in modern catalytic processes. Two lectures per week. Prerequisites: Chemistry 231; and Chemistry 342 or 345.

Fall semester only, two hours.

CHEM 441. CRYSTAL STRUCTURE ANALYSIS. An introduction to the principles of x-ray crystallography. Theory of x-ray diffraction will be covered in addition to instruction on selecting, mounting, analyzing, refining and determining structures of various crystals. Students will learn to operate a bench-top x-ray instrument and become proficient with the operational and analysis software. Prerequisite: Chemistry 231.

Alternate years, fall semester only, two hours.

CHEM 445. ADVANCED COMPUTATIONAL CHEMISTRY. Computational chemistry methods are used today in such diverse fields as neuroscience, pharmaceuticals, interstellar chemistry, and catalysis. This course will build upon the introduction to molecular modeling presented in Chemistry 245 and focus on *ab initio* methods of calculating properties and interactions of small molecules to solve chemical problems. Practical use of commercial software will constitute a major component of the students' assessment. Two lectures per week. Prerequisite: Chemistry 245 and 345; or Chemistry 245, 342, and Mathematics 162.

Alternate years, spring semester only, two hours.

CHEM 451. BIOCHEMISTRY: DATA AND ANALYSIS. A continued study of the macromolecules of living systems, their structures and the methods used to elucidate those structures. Emphasis is placed on the generation, analysis and presentation of data from a variety of experimental

approaches with special consideration given to the unifying theme of computer aided data analysis. Three lectures per week. Prerequisite: Chemistry 352. *Fall semester only, three hours.*

CHEM 453. ADVANCED MOLECULAR SPECTROSCOPY. A study in modern spectral analysis for the determination of molecular structure, including advanced topics involving multiple pulse NMR techniques such as 2-dimensional NMR. Two lectures per week. Prerequisite: Chemistry 242.

Semester course, two hours.

CHEM 458. ADVANCED SYNTHESIS LABORATORY. This course is designed to give the student a broad range of advanced synthetic laboratory experiences. The course covers the synthesis of a wide range of organic, inorganic, and organometallic compounds involving specialized techniques typical of a research environment. Two labs per week. Prerequisite: Chemistry 242.

Spring semester only, two hours.

CHEM 460. INDEPENDENT STUDY. Individual study of specialized topics in chemistry. Senior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

CHEM 463. POLYMER CHEMISTRY. An introduction to the structure, synthesis, and physical properties of the major organic polymers. Two lectures per week. Prerequisite: Chemistry 242.

Semester course, two hours.

CHEM 466. ADVANCED ORGANIC CHEMISTRY. A detailed study of organic reactive intermediates and organic reaction mechanisms. Two lectures per week. Prerequisite: Chemistry 242.

Fall semester only, two hours.

CHEM 470. INDEPENDENT RESEARCH. Seniors who have displayed aptitude in chemistry perform assigned research problems. This course may not be taken concurrently with Chemistry 499. Three hours of laboratory work per week per credit hour. Prerequisite: Chemistry 370, permission of the department chair, and a faculty sponsor are required.

Semester course, one or two hours.

CHEM 471. COMPUTATIONAL CHEMISTRY PROJECT. This course serves as the capstone to the computational modeling concentration in the chemistry major. A student will design and complete a computational chemistry project under the supervision of a faculty member. Prerequisites: Chemistry 245, 345, and Computer Science 141.

Offered periodically as needed, one or two hours.

CHEM 480. INTERNSHIP IN CHEMISTRY. Selected students participate in an individual field experiences in a research laboratory under the supervision of professional staff. Minimum two weeks work required per intern credit hour. The grade is determined on the basis of a written evaluation by the cooperating institution mentor and a written report by the student submitted to the Chemistry Department. Prerequisites: Minimum 24 hours in chemistry and permission of the department.

Semester course, one to six hours.

CHEM 487. BIOCHEMISTRY SEMINAR. This course includes faculty directed reading, analysis, and discussion of the biochemical literature. The course also involves in-depth research, written paper, and oral presentation of an approved topic selected by the student. Senior status in the department required for enrollment. This course fulfills the Writing Intensive (WI) and Speaking Intensive (SI) requirements for the Biochemistry major.

Semester course, one hour.

CHEM 488. CHEMISTRY SEMINAR. This course includes faculty directed reading, analysis, and discussion of the chemical literature. The course also involves in-depth research, written paper, and oral presentation of an approved topic selected by the student. Senior status in the department required for enrollment. This course fulfills the Writing Intensive (WI) and Speaking Intensive (SI) requirements for majors in the Department of Chemistry.

Fall semester only, one hour.

CHEM 499. HONORS IN CHEMICAL RESEARCH. Seniors who have shown special aptitude in chemistry may, with consent of the Department of Chemistry, undertake supervised chemistry research. Not to exceed two hours each semester. *Semester course, one or two hours.*

DEPARTMENT OF COMMUNICATION AND VISUAL ARTS

Dr. Miller, Chair; Mr. Mucha, Director of Design and Visual Arts; Mr. Bandy, Dr. Brown, Dr. Mobley, Mrs. Rhoades. Additional Instructional Faculty: Mr. DiSpirito, Mr. Hammond, Mrs. Pritchard, Mr. Sanders, Ms. Westra.

Course Requirements for Bachelor of Arts Degree in Communication Studies (COMA)—36 hours

Communication Studies Core (24 hours):

Communication Studies 104 or 109 (total of three hours).

Communication Studies 110, 135, 207, 212, 225, 305, and 427.

Communication Studies Electives (12 hours):

Message Production (3 hours):

One course from: Communication Studies 235, 277, 359, 378, 388; Design 101, 110, 220; or Theatre 251.

Media and Culture (3 hours):

One course from: Communication Studies 222, 240, 250, 352, or 362.

Social Networks (3 hours):

One course from: Communication Studies 300, 303, or 459.

Capstone Elective (3 hours):

Choose three hours from: Communication Studies 470, 480, 488, or 499.

Courses that count in the COMA major quality point average (MQPA):

All courses with “COMM” prefix. A minimum MQPA of 2.00 is required to graduate.

Recommended Electives:

The required courses and electives provide the graduating student a strong foundation for a career in professional communication, graduate study in communication, or more effective performance in the career of his/her choice. Additional recommendations include two-years of language study at the college level and a minor in an area of interest including Applied Sociology, Design, English, Entrepreneurship, International Business, International Studies, Management, Marketing, Psychology, or Theatre. Students are encouraged to discuss their vocational interests with their advisors so they can design a tailored plan for their program of study.

The faculty in the Department of Communication and Visual Arts is committed to providing the opportunities Communication Studies majors and other students need to excel in oral, written, and visual communication. For success in today’s society, information literacy is also a critical skill. To these ends, Communication 104 is designated as a Speaking Intensive (SI) course; Communication 212 and Communication 427 are designed as Writing Intensive (WI) courses; and Communication 212 address the key issues involved with Information Literacy (IL) and are designated as such. These courses include learning experiences that are designed to prepare Communication Studies majors to be effective and ethical producers and consumers of knowledge.

SUPPORTING ACTIVITIES

The Department of Communication Studies offers students significant co-curricular activities, including:

- The Speech and Debate Team, which participates in both individual events and group debate.
- Lambda Pi Eta, the undergraduate honor society for Communication Studies students, sponsors special programs and speakers.
- Involvement with *The Collegian* (campus newspaper), WSAJ (radio station), *The Echo* (literary magazine), *The Quad* (quarterly magazine), *The Bridge* (yearbook), or the College's Office of Marketing and Communications.
- Internships, whereby students earn academic credit for work done in conjunction with a professional organization related to communication (e.g., local newspaper, radio, or television station). See the course description for Communication Studies 480.

Course Requirements for a minor in Communication Studies (18 hours)

A minor in Communication Studies will consist of Communication Studies 104 or 109 (total of 3 hours); one theory course from Communication Studies 110, 207, 222, or 305; and 12 additional hours from any courses with COMM prefix. The one credit course, Theatre 259, may be repeated, and a maximum of three hours may count toward the minor. A Communication Internship (Communication Studies 480) may not count as an elective course toward the minor.

Course Requirements for a minor in Design (21 hours)

A minor in Design will consist of Design 101, 102, 201, 202; Design 220 or Art 202; and two courses from Art 101, 102, 121, Design 110, 210, Communication Studies 212, 245, 277, or 378.

Course Requirements for a minor in Studio Art (21 hours)

A minor in Studio Art will consist of one 2D Art course from Art 101, 105 or 121; one 3D Art course from Art 103, 104 or 111; one Art History course from Art 201 or 202; and 12 additional hours from Art 101, 103, 104, 105, 111, 121, 201, 202, 207, 208, 290, 390, Design 101, 102, or 210.

Course Requirements for a minor in Theatre (24 hours)

Consult the Department of English for the requirements.

Course Requirements for a minor in International Studies (24 hours)

The International Studies Minor contributes to both the professional development and intellectual enrichment of undergraduate students at Grove City College, enabling them to develop a broad understanding of the rapidly changing global environment for which they will be equipped to function during their professional careers. This minor is interdisciplinary, comprised of a small cluster of courses in foreign language and culture, with a contemporary focus. The International Studies Minor provides for mid-level competency in a modern language other than the student's native tongue, broad knowledge of other cultures, and understanding of the complexity and interconnectedness of the modern world.

General Requirements:

Students must possess modern language competency as demonstrated by completing at least the second-year course sequence (201-202) or equivalent in a widely spoken modern language other than the student's native language. Students must complete an approved international academic experience (Study Abroad) at the college level for a semester or year, or 3 credits of international internship experience

Core Requirements (6 hours):

Two courses from: Communication Studies 225, Global Studies 300, Psychology 200, or Sociology 103.

Elective Requirements (15 hours):

Five courses from the following, with no more than three courses from any one of the four emphases areas.

International Politics, History, Religion

History 141, 212, 224, 231, 263, 265; Political Science 301, 333, 341, 342, 344; Religion 248, or Religion 342.

Global Economies

Economics 202, 206; International Business 305, 416, or 445.

Global Society & Culture

Chinese 321; French 305, 312, 321, 326, 340; Global Studies 310; Sociology 241, 375; Spanish 320, 333; Spanish 322 or 323; or Spanish 326 or 327.

International Art, Music, English

English 205, 206, 250, 324, 325; or Music 330.

Global Capstone (3 credits):

All students are required to complete a capstone experience which involves enrolling in *Internship, Independent Research, or Honors* for 3 credits. The exact parameters of this capstone requirement are determined in consultation with the student and their capstone advisor.

The capstone project must synthesize the student's course of study by incorporating at least two of the four emphases in design and/or content and must demonstrate their understanding of how to communicate their research in a global context to an audience of their own choosing. Examples may include an international internship, service-learning program, or field work that results in a substantive paper, grant, or project. The following courses satisfy this requirement: Communication 470 Independent Research; Communication 480 Internship; or Communication 499 Honors in Communication. If the student chooses the internship option, this must be a different internship from the one conducted for the general requirements.

Students are expected to contact their advisors for a detailed schedule of courses recommended to meet requirements for a major.

COMMUNICATION STUDIES (COMM)

COMM 104. PUBLIC SPEAKING AND RHETORIC. Introduces students to the preparation and presentation of material for a variety of public speaking situations. This performance-oriented class offers instruction in the theory of rhetoric, material development, and delivery techniques. Students will review the historical importance of oral communication and the role it plays in society. This course fulfills the Speaking Intensive (SI) requirement for Communication Studies majors.

Semester course, three hours.

COMM 109. FORENSICS. A skills-based course designed to improve students' ability to analyze ideas, advocate ideas in individual debate, and to prepare and deliver oral communications. Students will develop and refine their ability to research, organize, and present orally ideas in the form of informative, critical, and persuasive speeches, Lincoln-Douglas style debates, or individual performances of literature in the form of oral interpretation of literature. Corequisite: Participation with the intercollegiate forensics (speech & debate) team, or consent of the instructor. May be taken up to three times.

Semester course, one hour.

COMM 110. PRINCIPLES OF MEDIA. This course offers an introduction of the historical and conceptual foundations of media, including oral, print, photographic, broadcast, cinematic, and digital

cultural forms and practices. Drawing upon a comparative approach, students will examine the nature of mediated communication, the functions of media, and the history of transformations in media and the institutions that help define media's place in society. *Semester course, three hours.*

COMM 135. WRITING FOR THE MEDIA. Provides an introduction to the substance, structure, and style of multiple forms of non-narrative mass media including print, broadcast, film, and the Internet. *Semester course, three hours.*

COMM 207. THEORIES OF COMMUNICATION. Focuses on the history of communication, including rhetorical and communication theory from the classics to modern times. The interpretivist and objectivist roots of the communication discipline are explored. Students study the theoretical underpinnings of the practice of communication in its various settings: public, relationships, small groups, organizations, mass media, and intercultural. The course examines the functions, structures, and processes of communication in a variety of contexts. *Semester course, three hours.*

COMM 212. RESEARCH METHODS IN COMMUNICATION. Examines the fundamentals of research approaches and methods in communication studies, both qualitative and quantitative. The course also examines a variety of actual communication research studies across the breadth of the field from interpersonal to mass communication. Students will learn questionnaire design and interviewing techniques. This course, along with Communication 427, fulfills the Writing Intensive (WI) requirement, fulfills the Information Literacy (IL) requirement for Communication Studies majors. Prerequisite: Communication Studies 207. *Semester course, three hours.*

COMM 222. FILM HISTORY AND THEORY. Encompasses the history of the motion picture from its invention in 1895 to the present day, focusing on American film. Introduction to film theories and criticism including principles of aesthetics and the art of how a film is created, from concept to completion. *Fall semester only, three hours.*

COMM 224. MEDIA, RELIGION AND DEMOCRACY. Explores a variety of questions and problems related to the mass media in a democracy. Questions related to media control, government regulation of media, political economy, journalistic "objectivity", and the advertising-editorial dichotomy are included. Christian reactions and religious activism related to the media are discussed. Chomsky, Herman, McChesney, Postman and other critical theorists are studied. *Alternate years, fall semester only, three hours.*

COMM 225. INTERCULTURAL COMMUNICATION. Provides an overview of the study of communication and culture. Course content focuses primarily on the theory and practice of communication in intercultural contexts. Students will examine cross-cultural communication (communication across cultures) and intercultural communication (communication between members of different cultures). This course is especially suited to students whose future careers may involve travel overseas or business with non-native Americans. *Semester course, three hours.*

COMM 235. JOURNALISM. Reviews a variety of print and broadcast media, exploring editorial style and slant. Fundamental newsgathering and news writing skills will be studied and practiced. Students will gather information from campus, community, and research sources in order to develop hard news, feature, and in-depth stories. Ethical and legal issues will be explored as well as the role of print media in shaping current events. *Semester course, three hours.*

COMM 240. MEDIA CRITICISM. An introduction to theoretical approaches and practices used to analyze the content, structure, and context of media in society. Primary attention will be paid to how the fundamental elements of media combine to create meaning and tell stories, the forms media texts make, and the way these structures influence viewers/listeners/users. The course will also explore what media is and why various media forms have developed in certain ways through history and across nations. Students will understand, analyze, and apply a working knowledge of terms and concepts underlying contemporary media studies, the economic, social, and political impact of the media industries, and the aesthetic and ethical implications of the media. Prerequisite: Communication Studies 110. *Alternate years, spring semester only, three hours.*

COMM 245. PHOTOGRAPHY. Emphasizes use of the 35mm single-lens reflex (SLR) camera, the aesthetics of photography, black and white film development, and darkroom techniques. Students are required to have a 35mm camera with internal metering and a manual control override mode. *An additional fee is charged for this course.* Semester course, three hours.

COMM 250. DIGITAL CITIZENSHIP. To be a digital citizen in today's global village one must know how to navigate the various online venues and be tuned into the ethical behavior governing their use. This course will use hands-on learning, discussion and reading to explore this digital world. Students will create blogs, wikis, avatars, podcasts, upload photos to Flickr and learn about tagging in sites like De.li.cious. Students will ponder the sociological impact of this Internet world and explore their own reactions to it by being actively involved in it. Prerequisite: Communication Studies 110. Semester course, three hours.

COMM 260. INDEPENDENT STUDY. Individual study of specialized topics in communication studies. Sophomore standing, permission of the department chair, and a faculty sponsor are required. Semester course, one, two or three hours.

COMM 270. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in communication studies. Sophomore standing, permission of the department chair, and a faculty sponsor are required. Semester course, one, two or three hours.

COMM 277. AUDIO PRODUCTION. Reviews the basics of audio production for recording. A particular emphasis is placed on the medium of radio including web casting. Consideration will be given to the history of radio broadcasting; properties of sound; microphone types; recording and control room techniques; and computerized editing of audio materials. Students will undertake a variety of practical projects in public affairs, news, sports, remote, music, and drama programming with opportunity for airing quality work on the College radio station. *Fall semester only, three hours.*

COMM 290. STUDIES IN COMMUNICATION. Intensive examination of an area of communication not fully covered by regular departmental offerings. Subject matter varies each semester. Offered periodically, semester course, one, two or three hours.

COMM 300. PUBLIC RELATIONS. Focuses on public relations theory, strategy, and techniques. The course emphasizes writing and developing public relations campaigns; theories of public persuasion; legal and ethical considerations; and crisis management and related issues. Students will develop a portfolio for a campus or community organization which will include: an overall campaign plan, news releases, a brochure, a speech, a print advertisement, a radio advertisement, and a final campaign presentation. Prerequisite: Communication Studies 135 or 235 recommended. Semester course, three hours.

COMM 303. PROFESSIONAL COMMUNICATION. Focuses on speaking and writing tools most often used by business professionals. Presentational speaking, personal communicative development, professional communication, and interviewing will be emphasized. Issues that relate to professional success will be explored. Must have junior or senior standing. Semester course, three hours.

COMM 305. PERSUASION THEORY. Explores a variety of media to ascertain the persuasive messages inherent in each genre. The course will familiarize the students with the processes of persuasion, methods of studying persuasion, the theories of persuasion, and ethical concerns about persuasion. The perspectives and tools developed should enable the student to develop effective message strategies in both professional and personal life. An excellent course for pre-professional majors and students involved in speech and debate. This course, along with Communication 104, 207, 212, and 427, fulfills the Information Literacy (IL) requirement for Communication Studies majors. Prerequisite: Communication Studies 207 or consent of the instructor. *Fall semester only, three hours.*

COMM 352. CHRISTIAN FAITH AND CINEMA. A survey of films, both the decidedly Christian and decidedly secular. The student will consider the importance of a film's theme in deciding its worth,

criteria by which they can choose valuable films to watch, and will evaluate secular films through a Christian perspective. The student will also learn what it means to possess a Biblical worldview and how “other” worldviews permeate popular cinema. *Alternate years, spring semester only, three hours.*

COMM 359. SCREENWRITING. This course is an introductory course for screenwriters. Topics of study will include character development, plot structure, storytelling techniques in film, as well as the narrative structure. Students will study films and screenplays as they learn to recognize various elements mentioned previously in feature films. Additionally, students will learn to craft their own stories for the screen. Students may only receive credit for one of Communication Studies 359 or Writing 359. *Spring semester only, three hours.*

COMM 360. INDEPENDENT STUDY. Opportunities for students with extensive background in communication studies to do intensive independent study or research on specialized topics. Sophomore or higher standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

COMM 362. MEDIA LAW AND ETHICS. Reviews relevant communication and media law and addresses a variety of communication-related ethical issues such as: libel, privacy, copyright, newsgathering rights, etc. *Alternate years, spring semester only, three hours.*

COMM 370. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in communication studies. Junior standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

COMM 378. VIDEO PRODUCTION. An introduction to broadcasting history, media aesthetics, and the technology and practice of multimedia production. Lectures, tutorials, and hands-on experience with cameras, microphones, lighting, and computer-based video editing will provide the basis for further study and internships in this influential medium of mass communication. *Spring semester only, three hours.*

COMM 388. DOCUMENTARY FILM. Encompasses the history and theory of the documentary film genre in motion pictures and television, from the earliest cinematic experiments to the present. The course examines various roles the documentary plays, such as explorer, reporter, painter, advocate, poet, catalyst, and guerrilla. Students will learn basics of visual literacy and will storyboard and shoot their own documentary using computerized video editing systems. *Fall semester only, three hours.*

COMM 390. STUDIES IN COMMUNICATION. Intensive examination of areas of communication not fully covered by regular departmental offerings. Subject matter varies each semester. *Offered periodically, semester course, one, two, or three hours.*

COMM 427. RHETORICAL CRITICISM. This course is required for Communication Studies majors. Students study a variety of rhetorical-critical methodologies including metaphorical, pentadic, cluster, narrative, fantasy theme, and ideological approaches. Students engage in rhetorical criticism throughout the term. The final project is an original rhetorical critique of a significant text for submission to a professional conference or publication. This course, along with Communication 212, fulfills the Writing Intensive (WI) requirement, for Communication Studies majors. Prerequisites: Communication Studies 207 and 212; and senior status or permission of the instructor. *Semester course, three hours.*

COMM 444. ADVANCED FILM THEORY. A deeper look at the medium of motion pictures from the point of view of film theorists including semiotics; realism; expressionism; *auteur* theory; cinema as art; montage; film as narrative; literature and adaptations to the screen; documentary and propaganda approaches; genre conventions; psychology; sociology; mythology; and ideology. Prerequisite: Communication Studies 222. *Alternate years, semester course, three hours.*

COMM 459. ORGANIZATIONAL COMMUNICATION. Provides a critical exploration of organizational communication theory, research, and application. This course examines the factors

involved in the functioning and analysis of complex organizations, particularly the direct and indirect ways in which communication processes and social dynamics affect organizations and employee interaction. *Semester course, three hours.*

COMM 460. INDEPENDENT STUDY. Opportunities for students with extensive background in communication studies to do intensive independent study or research on specialized topics. Sophomore or higher standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

COMM 470. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in communication studies. Senior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

COMM 480. INTERNSHIP IN COMMUNICATION. Students may, with consent of the department, earn academic credit for work done in a communication-related organization (e.g., newspaper; radio or television station; public relations office; business; etc.). Students must arrange for a faculty advisor, contact the organization where work will be done, keep a daily log of activities, and write a final paper summarizing the internship. Students must work 60 contact hours for each academic credit earned. Sophomore or higher standing and permission of the department internship coordinator are required.

Semester course, one to six hours.

COMM 488. SEMINAR. An advanced course for junior and senior Communication Studies majors to concentrate on specific subject matter to be determined by the instructor. Individual research and extensive oral and written reports are required.

Semester course, three hours.

COMM 499. HONORS IN COMMUNICATION. The student who chooses to pursue work beyond the basic requirements may do extensive reading in one of the following areas: media studies; organizational communication; public relations; audio and video production; filmmaking; oral interpretation; public address; group communication; and rhetorical or communication theory. Extensive research paper and independent reading required. Prerequisites: Senior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

DESIGN (DESI)

DESI 101. INTRO TO VISUAL COMMUNICATION DESIGN. This course is an in-depth analysis of design principles and formal concepts that builds fundamental knowledge of design as a visual language and communication tool. Students will learn through practical application using industry-standard software.

Semester course, three hours.

DESI 102. DESIGN THINKING. Students will investigate essential processes that form the basis for all types of design disciplines including the ability to think divergently, problem solve, and empathize.

Semester course, three hours.

DESI 110. DESIGN SOFTWARE FOR BEGINNERS. Adobe Creative Suite is the industry-standard tool set for virtually every design practitioner. In this class, students learn about Adobe Creative Cloud and how to use Photoshop, Illustrator, and InDesign while integrating them in a logical workflow.

Semester course, three hours.

DESI 201. VISUAL COMMUNICATION DESIGN I. In this course, students are challenged with complex design problems for both print and digital environments with a particular emphasis on typography and layout. Prerequisite: Design 101.

Fall semester only, three hours.

DESI 202. VISUAL COMMUNICATION DESIGN II. This course continues to cultivate skill in applying design principles and tools as students manipulate form and image to create conceptually strong designs and visual systems. Prerequisite: Design 201.

Spring semester only, three hours.

DESI 210. INTERACTIVE DESIGN. This course introduces students to strategy-based process for planning and designing digital user experiences as well as the essentials of web design using industry-standard software. Prerequisite: Design 101. *Spring semester only, three hours.*

DESI 220. DESIGN HISTORY. In this course, students will explore the origins of visual communication and its evolution into the professional discipline commonly referred to as “Design”. This is an introductory course that provides students with cultural and contextual understanding of various professional design disciplines. Students will spend time studying art and design movements, trends, and key individuals associated with each. *Semester course, three hours.*

DESI 390. STUDIES IN DESIGN. Intensive examination of areas of design not fully covered by regular departmental offerings. Subject matter varies each semester.

Offered periodically, semester course, one, two, or three hours.

VISUAL ARTS (ART)

ART 101. DRAWING. Drawing introduces students to essential 2D art concepts and techniques using a variety of drawing tools to produce black and white renderings on paper. *An additional fee is charged for this course.* *Fall semester only, three hours.*

ART 103. BEGINNING HAND BUILDING. This is an introductory studio class designed to expose students to a variety of ceramic processes used to produce sculpture and vessel. The goal is to broaden students’ understanding of clay as a viable medium for personal visual expression. *An additional fee is charged for this course.* *Semester course, three hours.*

ART 104. BEGINNING WHEEL THROWING. This is an introductory studio class designed to expose students to the potter’s wheel and throwing techniques used to produce hand-thrown vessels. The goal is to broaden students’ understanding of clay as a viable medium for personal visual expression as they create unique, finished clay. *An additional fee is charged for this course.* *Semester course, three hours.*

ART 105 PAINTING. This course is an introduction to basic painting techniques and tools including acrylic, oil, and watercolor on a variety of substrates. *An additional fee is charged for this course.* *Spring semester only, three hours.*

ART 111. SCULPTURE. This is an introductory studio class designed to expose students to a variety of sculptural processes and materials used to produce 3D art. *An additional fee is charged for this course.* *Fall semester only, three hours.*

ART 121. BEGINNING PRINTMAKING. This course is an introduction to printmaking methods typically used by artists and designers. In addition to understanding techniques, students will be challenged to think practically as they balance the affordances and constraints of various printmaking processes. *An additional fee is charged for this course.* *Fall semester only, three hours.*

ART 201. HISTORY AND APPRECIATION OF ART I. A survey of the visual arts (including painting, architecture, and sculpture) from prehistory through the High Renaissance, studied through illustrated lectures, readings, and class discussions. Students may take either Art 201 or 202 or both, and may take them in any order. Prerequisite: Humanities 301. *Fall semester only, three hours.*

ART 202. HISTORY AND APPRECIATION OF ART II. A survey of the visual arts (including painting, architecture, and sculpture) from Mannerism through the Twentieth Century, studied through illustrated lectures, readings, and class discussions. Students may take either Art 201 or 202 or both, and may take them in any order. Prerequisite: Humanities 301. *Spring semester only, three hours.*

ART 207. ADVANCED CERAMICS. This course is a continuation of the beginning ceramics class where students refine their understanding of the medium. Students are challenged to build a body of

work and develop a personal style. *An additional fee is charged for this course.* Prerequisite: Art 103 or 104. *Spring semester only, three hours.*

ART 208. PUEBLO POTTERY. The primary focus of this course is to increase understanding and appreciation for the Pueblo Indians of the Southwest and their pottery. Students use traditional Pueblo techniques to make tools, process clay, and produce artwork. *Semester course, three hours.*

ART 260. INDEPENDENT STUDY. Individual study of specialized topics in art. Sophomore standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

ART 270. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in art. Sophomore standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

ART 290. STUDIES IN VISUAL ARTS. Typically offered during May Intersession, this travel course features the culture, music, and art of selected areas of Western Europe and is given as credit for those taking the travel interim who have already received credit for Humanities 301: Civilization and the Arts. Course content includes viewing assigned pre-trip documentaries, attending all trip lectures and visits, completing assigned readings, and keeping a directed journal. Trip fees apply.

Intersession course, three hours.

ART 321. TEACHING ELEMENTARY ART. A study of materials and methods of instruction in art for the elementary and preschool including topics in the theory and practice of teaching art. Prerequisite: Sophomore standing and completion of Education 327. *Semester course, one hour.*

ART 360. INDEPENDENT STUDY. Advanced study in an area of art not available through regular course offerings. An independent study form is required to register for this class. An additional fee is charged for this course. Sophomore or higher standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

ART 370. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in art. Junior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

ART 390. STUDIES IN VISUAL ARTS. A course that covers special topics in the field of arts.

Offered periodically, semester course, one, two or three hours.

ART 460. INDEPENDENT STUDY. Advanced study in an area of art not available through regular course offerings. An independent study form is required to register for this class. An additional fee is charged for this course. Junior or higher standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

ART 470. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in art. Senior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

ART 488. SEMINAR IN ART. Available only by pre-approved permission of the department chair and the instructor involved. *An additional fee is charged for this course.*

Semester course, one, two or three hours.

DEPARTMENT OF COMPUTER SCIENCE

Dr. Wolfe, Chair; Dr. Al Moakar, Dr. M. W. Bright, Dr. Dellinger, Dr. Hutchins, Dr. Valentine. Additional Instructional Faculty: Mr. Brown.

The Computer Science Department seeks to provide its students with a solid foundation in the field of computing in order to prepare them for employment in an exciting industry,

or for advanced studies in top-ranked graduate schools. This foundation is built on knowledge of mathematics, programming languages, algorithms and data structures, and theory. In addition, students explore advanced topics, research projects, and technology projects.

The Department believes that it must transmit more than technical expertise to its students: whenever possible, the curriculum emphasizes the need for students to understand their responsibilities to society and to behave ethically, as well as to strengthen and live their Christian faith and witness to the professional community.

Students who complete one of the Department's three Bachelor of Science majors - Computer Science, Computer Information Systems, or Applied Physics/Computer - are prepared to use their skills in computing in application areas. Broadly educated persons with computing skills are in great demand.

No matter what career is pursued, computing professionals must possess the ability to locate, evaluate, and use information. In addition, they must be able to communicate their ideas and conclusions clearly and coherently through the written and spoken word. Instruction in these core communication skills is provided in Computer Science 205, 350, 451, and 452, which cover the Writing Intensive (WI) and Speaking Intensive (SI) requirements and provide partial coverage of the Information Literacy requirement. As a related concern, one of the significant problems in the computer field today is the proper application of ethics. For this reason, all computer majors are required to take Computer Science 205 *Ethics, Faith, and the Conscious Mind*.

The Computer Science Department has formulated the following objectives and specific outcomes to guide us in directing and evaluating our program.

Program Educational Objectives

1. Graduates will be active in the computer science profession, or an alternative field based on their professional interests. Graduates will be successful because of their strong technical, communication, and team skills.
2. Graduates will understand, through a Christian worldview, their ethical and professional obligations to society.
3. Graduates will grow in their careers through initiative, creative thinking, and lifelong learning.

Student Outcomes

- a. An ability to apply knowledge of computing and mathematics appropriate to the program's student outcomes and to the discipline;
- b. An ability to analyze a problem and identify and define the computing requirements appropriate to its solution;
- c. An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs;
- d. An ability to function effectively on teams to accomplish a common goal;
- e. An understanding of professional, ethical, legal, security, and social issues and responsibilities that is integrally bound to the understanding of professional and ethical responsibility in a Christian context;
- f. An ability to communicate effectively with a range of audiences, such as professional colleagues and the scientific community;
- g. An ability to analyze the local and global impact of computing on individuals, organizations, and society that builds on the following liberal-arts areas important in giving the Christian student a background for making judgments concerning computing solutions: history of civilization, Biblical revelation, philosophy, literature, visual art, and music;

- h. Recognition of the need for, and an ability to engage in, continuing professional development;
- i. An ability to use current techniques, skills, and tools necessary for computing practice (CSCI degree only);
- j. An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices (CSCI degree only);
- k. An ability to apply design and development principles in the construction of software systems of varying complexity (CSCI degree only).

Computing Facility

The Computer Science department is located in the Science, Technology, Engineering, and Math (STEM) building. Students have exclusive use of two labs designed specifically to help students work collaboratively by utilizing horseshoe-shaped table and display configurations called “pods.” Each of the eight pods in a room has a large monitor; students can connect their school-issued laptops to the monitor in order to display to their table or, with faculty permission, to show their work to the rest of class. Students also use the labs outside of class to work on group projects.

In addition, the Department has console-game development stations (e.g. Sony PS4), Apple MacBook computers, iPads, and Android tablets for mobile application development. All of this equipment is available for both class and research use. Microsoft software is available for all department majors, and includes many software products (e.g., professional versions of Visual Studio and the Office Suite). The Department also has dedicated equipment for work in Computer Security

Course Requirements for Bachelor of Science Degree in Computer Science (CSCI)—95 hours

Computer Science Core Requirements (27 hours):

Computer Science 141, 155, 220, 222, 244, 252, 314, 322, 342.

Advanced Core Requirements (23 hours):

Computer Science 205, 340, 350, 422, 443, 448, 451, and 452.

Computer Science Electives (15 hours):

Choose five courses from Computer Science 344, 361, 390, 401, 402, 435, 441, 442, 445, 446, 447, and 475.

Math/Science Core Requirements: (30 hours):

Mathematics 161, 162, 213, and 261.

Mathematics 214 and four hours from Physics 102, Chemistry 101, 102, 105, Biology 101, 102, any 200-level or higher Mathematics course; or Mathematics 222 and 331.

Physics 101.

Choose one of the following courses:

Physics 102; Chemistry 101, 102, 105; Biology 101, 102.

Courses that count in the CSCI major quality point average (MQPA):

All courses with “COMP” prefix and MATH 213. A minimum MQPA of 2.00 is required to graduate.

COMPUTER SCIENCE (CSCI) MAJOR FOUR-YEAR PLAN

FRESHMAN YEAR

	Fall	Spring
MATH 161 – MATH 162	4	4
COMP 155 – COMP 141	3	3
HUMA 102 – HUMA 200	3	3
WRIT 101 – Science Elective	3	4
PHYE 101-102 or 111-112	<u>1</u>	<u>1</u>
	14	15

SOPHOMORE YEAR

	Fall	Spring
MATH 261 – COMP 205	4	3
MATH 213 – MATH 214	3	3
Science/Math Elec - COMP 222	4	3
COMP 220 – COMP 252	3	3
HUMA 202 – PHYS 101	<u>3</u>	<u>4</u>
	17	16

JUNIOR YEAR

COMP 244 - COMP 314	3	3
COMP 322 – COMP 340	3	3
COMP 342 - COMP 350	3	3
Found Soc Sci – General Elec	3	5
Computer Science Electives	<u>3</u>	<u>3</u>
	15	17

SENIOR YEAR

COMP 422 – COMP 443	3	3
COMP 448	3	-
COMP 451 – COMP 452	2	3
Computer Science Electives	3	6
HUMA 303 – General Elec	3	5
HUMA 301	<u>3</u>	<u>-</u>
	17	17

Note: Students who wish to take all three game courses (Comp 441, Comp 446, and Comp 447) must take Comp 441 in their fall, junior term. This course sequence is required for the Computer Game Design and Development minor.

Course Requirements for Bachelor of Science Degree in Computer Information Systems (CIS)—69 hours

This interdisciplinary program is to prepare the student to facilitate the development of computer utilization, databases and information systems to satisfy the requirements and needs of organizational management.

Computer Core Requirements (44 hours):

Computer Science 141, 155, 205, 220, 222, 244, 252, 322, 340, 342, 350, 451, 452; and two 300 or 400-level Computer Science courses.

Business Core Requirements (15 hours):

Accounting 201 and 202; Finance 301; Management 201, and 203.

Business/Computer electives (3 hours):

Select one course from Computer Science 390; Entrepreneurship 309; Management 302; Marketing 204; or 400-level Computer Science elective.

Major-Related Requirements (7 hours):

Economics 101; and Mathematics 141 or 161.

Courses that count in the CIS major quality point average (MQPA):

All courses with “ACCT”, “COMP”, “FNCE”, “MNGT”, and “MARK” prefixes, excluding MNGT 106 and FNCE 105. A minimum MQPA of 2.00 is required to graduate.

Course Requirements for Physics/Computer Major

Consult the Department of Physics for the requirements.

Course Requirements for a minor in Computer Science (18 hours)

A minor in Computer Science will consist of Computer Science 141, 220, and 222; and nine hours of Computer Science courses 200-level and above. Note: *Students pursuing International Business, Management, Marketing, or Physics as a first major might prefer*

Computer Information Systems or Physics/Computer as the first major rather than this minor.

Course Requirements for a minor in Computer Game Design and Development (21 hours)

A minor in Computer Game Design and Development will consist of Psychology 101 or Sociology 103; Communication Studies 110 and 212; Communication Studies 135 or 303; and Computer Science 441, 446, and 447.

Course Requirements for a minor in Cybersecurity (18 hours)

A minor in Cybersecurity will consist of Computer Science 205, 340, 448, 475; Mathematics 210; and one course from Political Science 302, Sociology 221, or Sociology 314.

Course Requirements for a minor in Data Science (19 hours)

A minor in Data Science will consist of Computer Science 344, 435, 445; Marketing 325; Mathematics 222; and Psychology 201.

Course Requirements for a minor in High-Tech Entrepreneurship (24 hours)

A minor in High-Tech Entrepreneurship will consist of Computer Science 401 or 402; Computer Science 442, 451, and 452; Economics 120; Entrepreneurship 101, 301, and 402; and Entrepreneurship 317 or 409.

Course Requirements for a minor in Mobile Development (18 hours)

A minor in Mobile Development will consist of Computer Science 401, 402, 441; and three courses from Design 101, 210, Entrepreneurship 309, or Entrepreneurship 330.

Students are expected to contact their advisors for a detailed schedule of courses recommended to meet requirements for a major.

COMPUTER SCIENCE (COMP)

COMP 141. COMPUTER PROGRAMMING I. This course provides the student with an understanding of hardware and software concepts, structured program design, and programming using Java in an integrated development environment. Topics include Boolean expressions, iteration, standard library classes and methods, arrays, searching and sorting, multidimensional arrays, strings, dynamic memory allocation, programmer-defined classes and methods, and deep copying. This course, along with Math 161 and 488, fulfills the Information Literacy (IL) requirement for the Mathematics major. *Semester course, three hours.*

COMP 155. INTRODUCTION TO COMPUTER SCIENCE. This course provides an introduction to the field of Computer Science. Topics include data representation, gates and circuits, algorithm design, programming languages, abstract data types, operating systems, information systems, artificial intelligence, networks, and the World Wide Web. The course is intended to prepare students for further study in the field and is also appropriate for non-major students who wish to become familiar with computer science. *Fall semester only, three hours.*

COMP 205. ETHICS, FAITH, AND THE CONSCIOUS MIND. This course focuses on three components of ethics, faith, and philosophy from a computer science perspective. First, it examines the Christian theological and philosophical foundations of science and the ethical role of computer science in areas such as globalization, autonomous systems, and intellectual property. Second, it considers perspectives on the origins, nature, and future of human cognition and consciousness, including intersections of artificial intelligence and consciousness. Third, it reviews ethical systems, cyberethical professional codes, ethical problem-solving techniques, and specific ethical cases, again

from a computer science perspective and building on an informed Christian response to technology. This course, along with Computer Science 350, fulfills the Information Literacy (IL) requirement for Computer Science and Computer Information Systems majors. Students may only receive credit for one of Computer Science 205 or Science, Faith, & Technology 205. Prerequisites: Humanities 102 (or Religion 211 and 212) and a lab science. The lab science may be taken concurrently with this course. This course satisfies the SSFT General Education requirement. *Spring semester only, three hours.*

COMP 220. COMPUTER PROGRAMMING II. This is a second course in the Java language: a review of essential language concepts, structured programming, and top-down design. Object oriented program design principles including inheritance, abstract base classes, interfaces, virtual methods, and polymorphism are covered. Other topics include generics, linked data structures, and exception handling. Prerequisite: Computer Science 141. *Semester course, three hours.*

COMP 222. INTRODUCTION TO DATA STRUCTURES AND ALGORITHMS. An advanced course in programming using an object-oriented language, with an emphasis on analyzing the run-time behavior of programs; the design and structure of programs; linear data structures; recursion; binary search trees; sorting; and hash techniques for searching. Prerequisite: Computer Science 220. *Spring semester only, three hours.*

COMP 244. DATABASE MANAGEMENT SYSTEMS. An introduction to database management systems emphasizing the relational model. Topics include data manipulation languages (SQL, QBE); database design (intuitive design, normalization, and E-R design model); three-tier and multi-tier architecture; database security; and database integrity. Prerequisite: Computer Science 141 or knowledge of its content. *Fall semester only, three hours.*

COMP 252. COMPUTER ARCHITECTURE AND ORGANIZATION. Organization, elementary architectural design and computer instruction sets are examined and used via programming in an assembly language. Students are given an introduction to the manner in which digital computers actually work. Prerequisite: Computer Science 220. *Spring semester only, three hours.*

COMP 260. INDEPENDENT STUDY. Individual study of specialized topics in computer science. Sophomore standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

COMP 270. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in computer science. Sophomore standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

COMP 314. AUTOMATA THEORY. This course is an introduction to computation theory including the topics: finite automata, regular languages, pushdown automata, context-free languages, Turing machines, recursive languages and functions, and computational complexity. Prerequisites: Computer Science 141 and Mathematics 213. *Spring semester only, three hours.*

COMP 322. OBJECT ORIENTED AND ADVANCED PROGRAMMING. This course introduces students to the C++ language for advanced programming while reinforcing object-oriented concepts from previous courses. Topics include programming techniques in an object-oriented language for large-scale, complex, or high-performance software; encapsulation; memory management; exceptions; standard library algorithms and containers; using single and multiple inheritance and polymorphism for code reuse and extensibility; and basic design idioms, patterns, and notation. Prerequisite: Computer Science 222. *Fall semester only, three hours.*

COMP 340. OPERATING SYSTEMS. A study of the basic principles of operating system design and implementation including types of computer systems, general architecture of several representative computer systems, security, run-time systems, and performance measurement and evaluation. Prerequisites: Computer Science 222 and 252; or Electrical Engineering 204. *Semester course, three hours.*

COMP 342. DATA COMMUNICATION AND NETWORKING. This class introduces the concepts of data communications used in information networks. Topics include: equipment utilization in information networks; techniques utilized to transmit signals (e.g., modulation, multiplexing, error detection, and correction); methods of message handling; network configuration; and software utilized in implementing networks. Prerequisite: Computer Science 220. *Fall semester only, three hours.*

COMP 344. INTRODUCTION TO BIG DATA. The objective of this course is to introduce key concepts and technologies of big data management. This course covers big data characteristics, storage, and processing. Students learn how to use multiple big data technologies, such as stream processing, in-memory databases, Hadoop MapReduce, NoSQL, and NewSQL systems. Prerequisites: Computer Science 220 and 244. *Alternate years, spring semester only, three hours.*

COMP 350. SOFTWARE ENGINEERING. This course introduces software-engineering methodology, covering topics such as development cycles, testing, design, requirements gathering and analysis, and project management. Students work in teams on a semester-long project. Software Engineering is designed to fulfill the Writing Intensive (WI), Speaking Intensive (SI), and Information Literacy (IL) requirements for both the Computer Science and the Computer Information Systems majors. Prerequisite: Computer 220 and junior standing. *Spring semester only, three hours.*

COMP 360. INDEPENDENT STUDY. An advanced course for qualified students that provides an opportunity for further computer programming and analysis experience on an individual basis. Junior standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two, or three hours.*

COMP 361. INTRODUCTION TO COMPUTER GRAPHICS. A comprehensive introduction to the field of computer graphics. Extensive programming in C++ facilitates knowledge development in the core areas, which include human perception, illumination and shading models, object representation and modeling, classical and current rendering algorithms, and the physical and mathematical foundations of the dominant models and methods. Efficient implementations of these techniques are developed from scratch in parallel with an exploration of application programming interfaces for manipulating dedicated graphics hardware. Prerequisites: Computer Science 222; Mathematics 213; and one of Mathematics 214, Mathematics 222, or Engineering 274. *Alternate years, spring semester only, three hours.*

COMP 370. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in computer science. Junior standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two, or three hours.*

COMP 390. SELECTED TOPICS IN COMPUTER SCIENCE. An examination of areas of computer systems not fully covered by regular departmental offerings. Subject matter varies each offering based on topic. Prerequisites: Computer Science 220 and permission of the department. *Semester course, two or three hours.*

COMP 401. PRINCIPLES OF iOS PROGRAMMING. The objective of this course is to introduce mobile computing with an emphasis on projects and programming iOS devices (e.g. iPad). Smartphones, and other Internet-based, highly mobile computing devices, are an increasingly important computing platform and driver of software design. This course covers Swift and the iOS SDK. Important software design issues, such as input modalities, UI design, and location-aware web applications are covered. Students will be provided with development systems. Prerequisite: Computer Science 222. *Alternate years, fall semester only, three hours.*

COMP 402. PRINCIPLES OF ANDROID PROGRAMMING. The objective of this course is to introduce Android with an emphasis on projects. Android mobile computing devices are an increasingly important computing platform. This course covers the Android SDK and teaches students how to develop basic Android applications. Students will be provided with development systems. Prerequisite: Computer Science 222. *Alternate years, fall semester only, three hours.*

COMP 422. INTRODUCTION TO ALGORITHMS. Topics include: fundamental techniques for designing efficient algorithms and basic mathematical methods for analyzing their performance; paradigms for algorithm design; divide-and-conquer, greedy methods, graph search techniques, dynamic programming; design of efficient data structures, and analysis of the running time and space requirements of algorithms in the worst and average cases. Prerequisite: Computer Science 222.

Fall semester only, three hours.

COMP 435. INTRODUCTION TO MACHINE LEARNING. Machine learning is an essential part of technologies such as image recognition, social network analysis, and autonomous vehicles. This course introduces concepts and algorithms that enable computers to learn from experience. Emphasis is on the practical application of the algorithms, with some discussion of the underlying mathematics. Techniques covered include supervised learning (linear and logistic regression, decision trees, support vector machines, and neural networks), unsupervised learning (clustering and dimensionality reduction), and time-series data (e.g., hidden Markov models or reinforcement learning). Prerequisites: Computer Science 222; and either Mathematics 214 or both Mathematics 222 and one of Mathematics 331, Psychology 201 or Mathematics 201.

Alternate years, spring semester only, three hours.

COMP 441. COMPUTER GAME DESIGN AND DEVELOPMENT. This course covers concepts and methods for the design and development of 2D computer games. Topics include: graphics and animation, sprites, software design, game design, game implementation, and game development environments. Prerequisite: Computer Science 222.

Fall semester only, three hours.

COMP 442. WEB PROGRAMMING TECHNOLOGIES. This course prepares students with the fundamentals needed to program on the Internet. It offers a survey of programming concepts that yield visible or audible results in Web pages and Web-based applications. The course covers effective Web-page design, various markup languages, several scripting languages, Web servers, and databases to provide all the skills and tools needed to create dynamic Web-based applications. Prerequisite: Computer Science 244.

Fall semester only, three hours.

COMP 443. PROGRAMMING LANGUAGES. This course investigates basic concepts of programming languages, including functions, types, and scoping. Functional programming is an emphasis of the course, including first-order functions, lambda expressions, and referential transparency. Prerequisite: Computer Science 222.

Spring semester only, three hours.

COMP 445. INTRODUCTION TO ARTIFICIAL INTELLIGENCE. Artificial intelligence topics included in this class are: predicate calculus, state space search, knowledge representation, expert systems, reasoning in uncertain situations, and machine learning. Prerequisites: Computer Science 222; and one of Mathematics 214, Mathematics 331, or Engineering 274.

Spring semester only, three hours.

COMP 446. ADVANCED COMPUTER GAME DESIGN AND DEVELOPMENT. This course is a continuation of Computer Science 441 and is focused on the development of 3D games and other advanced game programming techniques. Prerequisite: Computer Science 441.

Spring semester only, three hours.

COMP 447. CONSOLE GAME DESIGN AND DEVELOPMENT. This course is a continuation of Computer Science 441 and Computer Science 446, and is focused on the development of networked, multiplayer console games, with emphasis on both hardware and software design issues. The course will explore sophisticated programming techniques and advanced algorithms. Prerequisites: Computer science 441 and 446, and permission of instructor.

Fall semester only, three hours.

COMP 448. COMPUTER SECURITY. An overview of software security flaws a programmer should be careful to avoid. Students will learn how to avoid these flaws, as well as practice finding them in existing code. Additionally, better alternatives will be explored which will allow students to make better programs that are less vulnerable to security exploits. Prerequisite: Computer Science 322.

Fall semester only, three hours.

COMP 451. SENIOR PROJECT I. This course is part of the capstone design experience and is based on applying software engineering to a two-semester long project. This course focuses on design. Students will write reports and make presentations. This course partially fulfills the Information Literacy (IL) requirements for both the Computer Science and the Computer Information Systems majors. Prerequisite: Computer Science 350. *Fall semester only, two hours.*

COMP 452. SENIOR PROJECT II. This course is a continuation of Computer 451 and is focused on the development of a working, tested system delivered to a user community. Students will write reports, make presentations, and deliver a working software system. This course fulfills the Writing Intensive (WI), Speaking Intensive (SI), and Information Literacy (IL) requirements for both the Computer Science and the Computer Information Systems majors. Prerequisite: Computer Science 451. *Spring semester only, three hours.*

COMP 460. INDEPENDENT STUDY. An advanced course for qualified students that provides an opportunity for further computer programming and analysis experience on an individual basis. Senior standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two, or three hours.*

COMP 470. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in computer science. Senior standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two, or three hours.*

COMP 475. ADVANCED SECURITY. A more comprehensive study of computer security, including the goals of secure computing; elementary cryptography; and system and network security. Practical applications of these ideas are provided by an investigation of secure systems administration by means of team-based security projects. Various legal and ethical issues in the field are also considered. Prerequisites: Computer Science 205, 340, 342, and 448. *Alternate years, spring semester only, three hours.*

COMP 480. INTERNSHIP IN COMPUTER SCIENCE. Students earn academic credit for field experience that allows them to use their computer skills under the supervision of a cooperating entity. A maximum of six credit hours may be applied toward the major. Junior standing and permission of the department chair are required. *Semester course, one to six hours.*

COMP 499. HONORS IN COMPUTER SCIENCE. A course for qualified junior or senior students who are interested in an advanced computer-science experience. The course has a significant research component, including system development, review of literature, and writing. Topics change with each offering depending on the interests of the faculty member teaching the course. Prerequisite: Permission of the instructor and department chair. *Semester course, one, two, or three hours.*

DEPARTMENT OF ECONOMICS AND SOCIOLOGY

Dr. Herbener, Chair; Dr. W. Anderson, Dr. Ayers, Dr. Fuller, Dr. Ritenour. Adjunct: Dr. Bradley. Additional Instructional Faculty: Dr. Klenowski.

Course Requirements for a Bachelor of Arts Degree in Economics (ECON)—58 hours

Core Requirements (27 hours):

Economics 101, 102, 120, 301, 302, 342, 407, 408, and 420.

Economics Electives (15 hours):

Fifteen hours from the following:

Economics 202, 204, 206, 207, 213, 214, 215, 216, 260, 270, 290, 303, 306, 309, 310, 360, 370, 390, 401, 402, 404, 456, 460, 470, and 499.

Major-Related Requirement (16 hours):

Philosophy 161, 211; Management 201; Mathematics 141 or 161*; and Sociology 101.

Courses that count in the ECON major quality point average (MQPA):

All courses with “ECON” prefix. A minimum of 2.00 MQPA is required to graduate.

Course Requirements for a Bachelor of Science Degree in Business Economics (BECO)—70 hours

Business Core Requirements (36 hours)

Accounting 201, 202; Finance 301; International Business 305; Management 201, 203, 211, 214, 303, 304, 486; and Marketing 204

Economics Core (30 hours):

Economics 101, 102, 120, 216, 301, 302, 310, 401, 402, and 456.

Major-Related Course (4 hours):

Mathematics 141 or 161*.

**Mathematics 141 prepares students in the business applications of calculus, but Mathematics 161 must be taken as a prerequisite for Mathematics 162 and 261.*

Courses that count in the BECO major quality point average (MQPA):

All courses with “ACCT”, “ECON”, “FNCE”, “INBS”, “MARK”, “MNGT” prefix, excluding FNCE 105 and MNGT 106. A minimum MQPA of 2.00 is required to graduate.

Students who have completed a major in Economics or Business Economics should be able to perform and present economic analysis and understand and critique the economic analysis of others. To attain these ends, they need to develop skills in locating, evaluating, and using information and proficiency in writing and speaking. To give students a forum to demonstrate their mastery of these skills, the Department of Economics requires Economics 420 as a Writing Intensive (WI), Speaking Intensive (SI) and Information Literacy (IL) course for Economics majors, and Management 214 as WI and IL and Management 486 as SI for Business Economics majors.

Course requirements for Bachelor of Arts Degree in Applied Sociology (APSO)—46 hours

Core Requirements (22 hours):

Sociology 101, 201, 377, 378, 452, 471, 472, and 480.

Elective Requirements (15 hours):

Fifteen hours from the following:

Sociology 103, 203, 208, 210, 211, 221, 233, 241, 251, 260, 270, 290, 308, 312, 314, 315, 321, 331, 356, 360, 370, 375, 390, 460, 470, and 499.

Major-Related Courses (9 Hours):

Economics 120; Psychology 201, 208.

Courses that count in the APSO major quality point average (MQPA):

All courses with “SOCT” prefix; ECON 120; PSYC 201 and 208. A minimum MQPA of 2.00 is required to graduate.

Applied Sociology majors are provided with focused, discipline-specific instruction in professional writing by taking the Writing Intensive (WI) course Sociology 377 *Applied Quantitative Methods*, and in professional speaking by taking the Speaking Intensive (SI) course Sociology 452 *Applied Sociology Colloquium*. Information Literacy (IL) instruction is also incorporated in Sociology 377, focusing on knowledge and use of electronic information technology and resources, critically assessing this information, and teaching

skills that explore scholarly research and publishing processes within the field of Applied Sociology.

Course requirements for a concentration in Criminal Justice Studies (21 hours)

Students majoring in Applied Sociology can earn a concentration in Criminal Justice Studies by completing Sociology 203, 221, 233, 314, and 315 in the place of the Major Elective Requirements, as well as Sociology 331 and Economics 402. In addition, the Internship in Applied Sociology (SOCI 480) required for the major should correspond in focus to the concentration.

Course requirements for a concentration in Environment and Community Studies (21 hours)

Students majoring in Applied Sociology can earn a concentration in Environment and Community Studies by completing Sociology 210, 211, 356, and 375 toward as Major Elective Requirements, as well as Economics 204, 215, and Political Science 209. In addition, the Internship in Applied Sociology (SOCI 480) required for the major should correspond in focus to the concentration.

Course requirements for a minor in Applied Sociology (18 hours)

A minor in Applied Sociology will consist of 18 hours of Sociology courses, including Sociology 101, 377 or 378, and 471.

Course Requirements for a minor in Economics (21 hours)

A minor in Economics will consist of Economics 101, 102, 120, and twelve additional hours in economics.

Course requirements for a minor in Family Studies (19 hours)

A minor in Family Studies will consist of Psychology 201; Sociology 312; one course from Psychology 204, Political Science 277, or Sociology 377; and three courses from Psychology 209, 211, 322, or Sociology 251.

Students are expected to contact their advisors for a detailed schedule of courses recommended to meet requirements for a major.

ECONOMICS (ECON)

ECON 101. PRINCIPLES OF ECONOMICS (MICRO) I. An examination of the fundamental principles of human action and the laws of the market economy. Focus will be on exchange, prices, production, costs, entrepreneurship, and government intervention. *Semester course, three hours.*

ECON 102. PRINCIPLES OF ECONOMICS (MACRO) II. An examination of the fundamental principles of human action and the laws of the market economy. Focus will be on money, inflation, credit, interest, capital, economic progress, and business cycles. *Semester course, three hours.*

ECON 120. FOUNDATIONS OF ECONOMICS. An investigation of the theological, philosophical and epistemological foundations of economics. The nature of man and the created world, laws of action and interaction, and the good society will be explored. *Semester course, three hours.*

ECON 202. ECONOMIC EXPANSION AND DEVELOPMENT. A study of economic progress with emphasis on the developing world. Topics include wealth, poverty, capital accumulation, and foreign aid. *Alternate years, spring semester only, three hours.*

ECON 204. ENVIRONMENTAL ECONOMICS. An investigation of environmental, conservation, and population issues. Pollution, natural resource use, demographic changes, and technology will be studied.
Alternate years, spring semester only, three hours.

ECON 206. COMPARATIVE ECONOMIC SYSTEMS. An analysis of different economic systems. The command economy, various forms of the mixed economy, different types of interventionism, and the market economy will be compared and contrasted.
Offered periodically, semester course, three hours.

ECON 207. LABOR ECONOMICS. An analysis of the working of labor markets. Labor unions and labor legislation and regulation will be examined. *Offered periodically, semester course, three hours.*

ECON 213. AMERICAN ECONOMIC HISTORY TO 1860. A survey of the American economy from colonial days to the Civil War. Economic progress and business cycles will be examined with emphasis on how the market economy was developed by entrepreneurs and hampered by politicians.
Alternate years, fall semester only, three hours.

ECON 214. AMERICAN ECONOMIC HISTORY SINCE 1860. A survey of the American economy from the Civil War to the present. Economic growth and business cycles will be examined with emphasis on how the market economy was developed by entrepreneurs and hampered by politicians.
Alternate years, spring semester only, three hours.

ECON 215. URBAN AND RURAL ECONOMICS. An examination of the spatial aspects of economic activity. Location decisions of production facilities by entrepreneurs and households by families will be examined with an emphasis on the changes in cities and rural areas as an aspect of economic development.
Alternate years, spring semester only, three hours.

ECON 216. ECONOMICS OF ENTREPRENEURSHIP. An examination of entrepreneurship both theoretically and in applied issues including innovation, growth, financing, strategy, institutional environment, and policy.
Alternate years, spring semester only, three hours.

ECON 260. INDEPENDENT STUDY. Individual study of specialized topics in economics. Sophomore standing, permission of the department chair, and a faculty sponsor are required.
Semester course, one, two or three hours.

ECON 270. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in economics. Sophomore standing, permission of the department chair, and a faculty sponsor are required.
Semester course, one, two or three hours.

ECON 290. STUDIES IN ECONOMICS. Studies in areas of economics not covered by regular departmental offerings.
Semester course, three hours.

ECON 301. INTERMEDIATE MICROECONOMICS. A study of prices and production. Utility, costs, competition, and equilibrium will be examined. Prerequisites: Economics 101 and 102.
Fall semester only, three hours.

ECON 302. INTERMEDIATE MACROECONOMICS. A study of economic progress and business cycles. Keynesian, Monetarist, Austrian, and other views will be examined. Prerequisites: Economics 101 and 102.
Spring semester only, three hours.

ECON 303. INTERNATIONAL ECONOMICS. An examination of the worldwide market economy. The movement of goods, people, capital, and money across political borders and political interference with the market will be investigated. Prerequisites: Economics 101 and 102.
Offered periodically, semester course, three hours.

ECON 306. AUSTRIAN ECONOMICS. An examination of the lives and thoughts of Austrian school economists. Contributions in monetary, capital, and business cycle theory, methodology, economic calculation, entrepreneurship, and other areas will be highlighted.

Offered periodically, semester course, three hours.

ECON 309. PUBLIC POLICY. An analysis of current public policy. Topics include labor and anti-trust regulations, education and energy policies, welfare programs, and price and wage controls.

Alternate years, fall semester only, three hours.

ECON 310. INDUSTRIAL ORGANIZATION. A study of how producers seek to satisfy demand in different market environments they face. The structure and activities of industries and the effects of these on competition, prices, and resource allocation in the economy will be examined. Prerequisite: Economics 101.

Alternate years, fall semester only, three hours.

ECON 342. INTRODUCTION TO ECONOMETRICS. This course explores probability theory, hypothesis testing, simple and multiple regression analysis, specification of econometric models, and introduces quasi-experimental techniques. Emphasis is placed on application of econometric techniques in estimating economic relationships. Prerequisites: Management 201 and Mathematics 141.

Spring semester only, three hours.

ECON 360. INDEPENDENT STUDY. Individual study of special topics in economics. Junior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

ECON 370. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in economics. Junior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

ECON 390. STUDIES IN ECONOMICS. Studies in areas of economics not covered by regular departmental offerings.

Semester course, three hours.

ECON 401. MONEY AND BANKING. A study of money and credit. Inflation, interest rates, and various monetary and banking regimes will be investigated. Prerequisites: Economics 101 and 102.

Fall semester only, three hours.

ECON 402. LAW AND ECONOMICS. An economic analysis of law's traditional categories: property, tort, contract, and criminal. This course will follow the outline of traditional courses in law and economics but will also devote time to the critiques that have been leveled against law and economics. Prerequisite: Economics 101 or 120.

Alternate years, spring semester only, three hours.

ECON 404. PUBLIC FINANCE. An examination of the types of and justifications for government activity. Taxation, expenditures, debt, and monetary inflation will be explored. Prerequisites: Economics 101 and 102.

Alternate years, fall semester only, three hours.

ECON 407. HISTORY OF ECONOMIC THOUGHT TO 1870. A study of the prominent figures in the development of economic thought and the major schools of economic thought from the ancient Greeks through the British classical school. Insights into current debates about economic theory will be highlighted.

Alternate years, fall semester only, three hours.

ECON 408. HISTORY OF ECONOMIC THOUGHT SINCE 1870. A study of the prominent figures in the development of economic thought and the major schools of economic thought from the beginning of the marginalist revolution to the present. Insights into current debates about economic theory will be highlighted.

Alternate years, spring semester only, three hours.

ECON 420. ECONOMICS COLLOQUIUM. An immersion into the activities of scholars: writing, presenting, critiquing, and debating. Students will lead and participate in discussions of articles and books, write and present their own research, and critique the research of other students. This course

satisfies the Writing Intensive (WI), Speaking Intensive (SI), and Information Literacy (IL) requirements for the Economics major. Prerequisites: Senior standing or permission of the department chair.
Fall semester only, three hours.

ECON 456. FINANCIAL MARKETS AND INSTITUTIONS. A study of the nature, origin, working and development of financial markets and institutions. Topics include the markets for and institutions offering credit, equities, and derivatives. Prerequisite: Economics 101 and 102.

Spring semester only, three hours.

ECON 460. INDEPENDENT STUDY. Individual study of special topics in economics. Senior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

ECON 470. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in economics. Senior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

ECON 480. INTERNSHIP IN ECONOMICS. Practical experience in applied economics. Prerequisite: Permission of the department chair.

Semester course, one to six hours.

ECON 488. SEMINAR IN ECONOMICS. An advanced course for juniors and seniors who desire in-depth exploration of a specific topic in economics using research, discussion, oral reports and written essays. Prerequisite: Permission of the department chair.

Semester course, one, two or three hours.

ECON 499. HONORS IN ECONOMICS. Advanced research in economics by seniors who have shown unusual aptitude in economics. Prerequisite: Permission of the department chair.

Semester course, three hours.

SOCIOLOGY (SOCI)

SOCI 101. FOUNDATIONS OF APPLIED SOCIOLOGY. An introductory study of the major and enduring theoretical ideas, concepts, methods, and debates that have shaped and informed the discipline of sociology from its inception to the current day. Topics include the origins of the discipline, the social conditions under which humans may thrive, social order, religion, and inequality. Attention is also paid to the ways in which the Christian tradition perceives and, in some cases, may challenge contemporary social conditions. Recommended to precede all other sociology courses.

Semester course, three hours.

SOCI 103. FOUNDATIONS OF CULTURAL ANTHROPOLOGY. An introduction to the study of culture, its meaning and significance for human beings, and the ways in which man organizes his activities to meet universal human needs, especially in simpler societies.

Fall semester only, three hours.

SOCI 105. PERSPECTIVES ON SOCIOLOGY. A one-credit course for students wishing to meet the College's "Foundations of Social Sciences" general education requirement by transferring in a standard introduction to sociology course taken elsewhere, that provides the unique content within Grove City College's Sociology 101 Foundations of Applied Sociology course. The following themes are covered: epistemological foundations of sociology, sociological views of human beings and their actions, foundations of social order, engines of social progress, and sociological understandings of the divine. Prerequisite: A Sociology 101 comparable class transferred from another institution.

Alternate years, spring semester only, one hour.

SOCI 201. SOCIAL PROBLEMS. An analysis of American social problems such as family, sexuality, drugs, crime, health, poverty, race, and global problems such as population, the environment, religion, war and terrorism.

Fall semester only, three hours.

SOCI 203. SOCIOLOGY OF DEVIANT BEHAVIOR. A study of the social aspects of personal deviation including consideration of the alcoholic, the drug addict, the suicidal and the sexually maladjusted from the perspective of social background, causative factors, and possible therapy. Prerequisite: Sociology 101 or 201. *Alternate years, fall semester only, three hours.*

SOCI 208. GERONTOLOGY. A general introduction to gerontology, with emphasis on the normative aspects of aging and adaptation to old age. Topics include the role of senior citizens in the family and a youth-oriented culture, theories of disengagement, role activity in retirement and aging from a cross-cultural perspective. *Alternate years, fall semester only, three hours.*

SOCI 210. CITY AND URBAN LIFE. This course provides a general introduction into the sociological study of cities and urban life. Its focus will be upon both the rise of the city and its present manifestation, especially globally, as well as: the historical development of the city and sociologist's reactions to it; contemporary ways sociologists "theorize the city"; urban problems such as poverty, ghettos, housing, enclaves, globalization, and urban sprawl; global cities and urbanization; the rapid expansion of global slums; the rise of urban social movements. Prerequisite: Sociology 101 or 201. *Alternate years, spring semester only, three hours.*

SOCI 211. SMALL TOWN AND RURAL LIFE. An examination of the sociological dynamics of rural communities and their contrast with cities and urban areas. Among the topics covered are rural demography, the social organization of rural communities including migration, religion, political structures, farming and agriculture, poverty, crime, and housing. In addition, classical sociological studies in rural communities will be covered. *Alternate years, spring semester only, three hours.*

SOCI 221. WHITE COLLAR CRIME. An in-depth examination of important concepts, theories, and facts related to white collar crime, using case studies, academic lectures, guest lecturers and films. The degree to which such crimes occur, as well as their economic and social costs, will be considered. Victims and offenders will be described. Legal issues and problems in dealing with white collar crime will also be considered, with a special consideration of the typical legal, political, and cultural barriers encountered in trying to create and enforce relevant laws, including detection and punishments. *Spring semester only, three hours.*

SOCI 233. INTRODUCTION TO CRIMINAL JUSTICE. An overview of every element of the criminal justice system, looking at the process of handling offenders from crime detection through arrest, adjudication, prosecution/defense, sentencing, incarceration, probation, and parole. Issues of criminal law (ethics, philosophy, and basic structure and rules) and policy, defendants, victims, and the roles of different criminal justice agents will also be considered. Biblical perspectives will be examined throughout, as will, where appropriate, private alternatives to response to crime. *Alternate years, fall semester only, three hours.*

SOCI 241. MEDICAL ANTHROPOLOGY. A study of the social and cultural aspects of medicine and health, strongly emphasizing the results of cross-cultural and comparative research. Topics include health professionals and services around the world, alternative healers, the demography of health and illness, and privatized versus government-sponsored health care systems. *Offered periodically, semester course, three hours.*

SOCI 251. COURTSHIP AND MARRIAGE. A general introduction to marriage and the family that emphasizes practical living. Topics include dating, courtship, engagement, marriage, romantic love, and marital adjustment across the lifespan. Also included are discussions of singleness, parenting, and divorce. *Semester course, three hours.*

SOCI 260. INDEPENDENT STUDY. Individual study of specialized topics in sociology. Sophomore standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

SOCI 270. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in sociology. Sophomore standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

SOCI 290. STUDIES IN APPLIED SOCIOLOGY. This course, which varies each semester, involves the examination of different areas of applied sociology with a focus on new areas not covered in regular coursework. *Semester course, three hours.*

SOCI 308. SOCIOLOGY OF RELIGION. This course will examine religion from a sociological perspective, including such topics as sociological theories about religion, how religion affects individuals and societies, secularization and worldwide religious resurgence, effects of globalization upon religion, America's contemporary religious climate, contemporary American Evangelicalism, and the future of religion. *Alternate years, spring semester only, three hours.*

SOCI 312. THE FAMILY AS A SOCIAL INSTITUTION. A course that focuses upon the status, development, and future of the modern American family from historical, cross-cultural, and sociological perspectives. Examines contemporary debates over legal definitions of "family", patterns of family structure, families and the elderly, family policy, and reviews non-governmental approaches to strengthening the family. Recommended for those students contemplating careers in teaching, the helping professions, ministry, public policy, and research. *Alternate years, spring semester only, three hours.*

SOCI 314. CRIMINOLOGY. An introduction to the scientific study of crime. This includes classical and modern criminological theories and methods, various types of criminal behavior and what triggers them, social and environmental factors that affect levels of crime, comparisons of crime rates across place and time. Prerequisite: Sociology 101 or 201. *Alternate years, fall semester only, three hours.*

SOCI 315. JUVENILE DELINQUENCY. An examination of the meaning of juvenile delinquency and the social institutions and psychological phenomena that shape juveniles. Significant trends in delinquency will be highlighted. *Alternate years, fall semester only, three hours.*

SOCI 321. SOCIAL CHANGE. An analysis of patterns, mechanisms and strategies of past and future social change in a rapidly changing world. Social and political movement theory, revolutions, the force of religion in social movement activism, and recent changes in American society are considered. Prerequisite: Sociology 101. *Offered periodically, semester course, three hours.*

SOCI 331. LAW AND SOCIETY. An exploration of the relationship among law, legal systems, and social structure. Topics include the origin and development of law, sociological theories of law, the relationship of Christianity and the law in the West, analysis and cross-cultural comparisons of dispute resolutions and other judicial processes (includes legal anthropology), comparisons of modern legal systems, the social psychology of legal decision-making including jury studies, and the legal profession. *Alternate years, spring semester only, three hours.*

SOCI 356. POVERTY AND STRATIFICATION. An overview of the nature and extent of poverty and stratification in the United States and the world, including consideration of empirical data, sociological theory, and Christian perspectives. Special attention will be given to private, faith-based solutions to chronic poverty. Prerequisite: Sociology 101 or 201. *Alternate years, spring semester only, three hours.*

SOCI 360. INDEPENDENT STUDY. Available to students with a minimum of twelve hours in sociology. Junior standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

SOCI 370. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in sociology. Junior standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

SOCI 375. GLOBAL SOCIETY. An investigation of how the dynamics of social order are impacted by the development of a global social order, including Christian perspectives on global order. *Alternate years, spring semester only, three hours.*

SOCI 377. APPLIED QUANTITATIVE METHODS. Research methods in the major phases of sociology investigation: the logic of research, its design and analysis, and specific methods of data collection. Includes training in locating, assessing, importing, modifying and analyzing secondary data; general knowledge of key sociological information sources; basic MicroCase and SPSS statistical software training; and hands-on instruction in all stages of writing professional research reports. This course fulfills the discipline-specific Writing Intensive (WI) and Information Literacy (IL) requirements for Sociology majors. Three lectures and two lab hours per week. Prerequisite: Sociology 101 and Psychology 201. *Fall semester only, three hours.*

SOCI 378. APPLIED QUALITATIVE METHODS. A review of “qualitative” research methodologies used in sociology. Particular attention is given to fieldwork/observational techniques, focus groups, content analysis, and visual/online data. Prerequisite: Six hours of Sociology including 101. *Spring semester only, three hours.*

SOCI 390. STUDIES IN APPLIED SOCIOLOGY. This course, which varies each semester, involves the examination of different areas of sociology with a focus on new areas not covered in regular coursework. *Semester course, three hours.*

SOCI 452. APPLIED SOCIOLOGY COLLOQUIUM. Guided intensive study of a specific sociological problem or topic under the guidance of one Sociology faculty member, and training in the art of professional speaking in the field. Students will orally present and defend their study proposals and completed final projects before the Sociology faculty and other students in the class. This course fulfills the discipline-specific Speaking Intensive (SI) requirement for Sociology majors. Prerequisite: junior status. *Spring semester only, one hour.*

SOCI 460. INDEPENDENT STUDY. Available to students with a minimum of twelve hours in sociology. Senior standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

SOCI 470. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in sociology. Senior standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

SOCI 471. WORLDVIEWS IN CONFLICT I: SOCIAL THINKERS FROM THE REFORMATION TO THE EARLY 20TH CENTURY. A survey of the classical era of sociological theorizing and the 20th Century development of those models. Includes Tocqueville, Comte, Marx, Freud, Weber, Simmel, Durkheim and major schools of thought such as conflict theory and functionalism. Attention is also paid to major themes of sociological theory, including community, authority, secularization, stratification, and alienation. Prerequisite: Junior standing or instructor’s permission. *Spring semester only, three hours.*

SOCI 472. WORLDVIEWS IN CONFLICT II: MODERN SOCIAL THOUGHT. An examination of the competing approaches to social theorizing that have come to prominence since World War II, with particular attention to American social theory. Topics include symbolic interactionism, the Chicago School, rational choice, globalization, ethnography, ethnomethodology, phenomenology, world systems, and post-modernity. Prerequisite: Sociology 471. *Fall semester only, three hours.*

SOCI 480. INTERNSHIP IN APPLIED SOCIOLOGY. This course offers practical experience appropriate for the sociology field. Prerequisite: Permission of the department chair. *Semester course, one to six hours.*

SOCI 499. HONORS IN APPLIED SOCIOLOGY. Open only to seniors who have honors grades and who have completed a minimum of fifteen hours in the department. Application must be made to the department and a proposal for the study must be approved before registering. The student studies under the guidance of department staff. Prerequisite: Fifteen hours in sociology including Sociology 377. *Semester course, one, two or three hours.*

DEPARTMENT OF EDUCATION

Dr. Nichols, Chair; Dr. Genareo, Associate Chair; Dr. Blackburn, Dr. Chapman, Dr. Culbertson, Mrs. Dreves, Dr. Fecich, Dr. Johnson, Dr. Johnson-Osho, Mrs. Munson, Dr. Scheffler, Dr. Stephens. Adjunct: Mrs. Martin. Additional Instructional Faculty: Mrs. Bodamer, Mrs. Herald, Mr. Omasits, Mr. Snyder.

The Education Department of Grove City College embraces the mission, goals, and objectives of the College while implementing standards established for teacher education by the state of Pennsylvania and as recommended by research in the field of education. The faculty of the Education Department supports these objectives and standards and seeks to provide the specialized knowledge required by the education profession. Department faculty and staff members dedicate themselves to assist Grove City College pre-service teachers gain an understanding of the craft while supplying them with ample field experiences to practice the art of teaching.

Pedagogical, intellectual, and professional knowledge represent the tools of the teaching craft. These tools are selected so that our pre-service teachers possess the skills they need to plan, assess, and adapt instruction to various ethnicities, socio-economic groups, learning styles, and learning capabilities. We are united in our commitment to supply our pre-service teachers with the necessary capabilities to be successful in teaching to the whole person when they leave our mentoring and enter their own classrooms.

Education majors who are planning to become teachers or to pursue graduate studies following graduation should strive to be good writers and speakers and to know how to find, analyze, and use information. To that end, Education 488 is a Writing Intensive (WI) and Speaking Intensive (SI) course. Education 203 and 488 are Information Literacy (IL) courses designed to provide the necessary skills for Education majors to use electronic information technology and resources and explore scholarly research within the field of education.

CERTIFICATION OF TEACHERS

Grove City College is approved by the Pennsylvania Department of Education to offer certification programs in the areas of PreK-4, 4th-8th grade Middle Level, Pre-K-4 with 4th-8th grade Middle Level, PreK-4 with Special Education K-8, K-12, and secondary school education. Teachers are prepared for careers in public and private education across a wide variety of roles including secular and Christian education. Secondary certification fields include Biology, Chemistry, English (also with communications), Foreign Language (French and Spanish), Mathematics, Music, Physics, Social Sciences, and interdisciplinary fields of General Science - Biology, Chemistry, and Physics. Middle-level certification includes a broad range of teaching preparation along with two content area studies: Science and Math, Science and English, Science and History, Math and English, Math and History. Students are expected to contact their advisors for a detailed schedule of courses recommended to meet requirements for a major and also the professional education course requirement.

The Instructional I Certificate is issued by the Pennsylvania Department of Education to those Grove City College graduates who have completed an approved college program, successfully fulfilled Pennsylvania Teacher Certification requirements (including required testing, Act 33, Act 34, Act 114 clearances and other state requirements), and have been recommended by the College for certification.

It should be noted that graduation and certification are not synonymous terms. All students seeking certification must apply to the Department of Education for admission to the certification program. Admission, retention, and recommendation for certification are contingent upon the approval of the Department of Education and the faculty of the student's

area of certification. Education Majors must meet the entry testing requirements articulated by the Pennsylvania Department of Education prior to formal admission into the certification program.

Changes in state licensure requirements may necessitate changes in course requirements for students, particularly for those students who extend their studies beyond the typical four-year sequence. Careful attention to Education Department recommendations for course scheduling is important for staying current with certification requirements.

SCHOLASTIC REQUIREMENTS, ADMISSION AND RETENTION

All students wishing to enter the teacher education program must make formal application for admittance and receive acceptance in accordance with admission requirements. **Students seeking admission as credential candidates should make formal application by November 1 of the sophomore year.** Non-traditional (returning) students are advised on an individual basis (*see Student Life section*).

All students will be required to have a 3.00 Career Quality Point Average (CQPA) to be certified by the Commonwealth of Pennsylvania. This requirement reflects provisions as stated by Chapter 354, passed by the Pennsylvania State Board of Education in May 2000.

In order that students may meet the above standard, the Education Department monitors progress. Students must maintain a minimal CQPA and MQPA as they advance through each academic year. These QPA requirements are detailed in the *Education Department Handbook*. Students are, therefore, advised to reference this source for further information.

POLICY GOVERNING COURSE REQUIREMENTS FOR CERTIFICATION ONLY TEACHER CANDIDATES

For those teacher candidates who are already certified in some area and seek certification at Grove City College in an additional area, the following guidelines are to be followed contingent upon Grove City College and Pennsylvania Department of Education guidelines:

- Candidates who have already taken courses in the area in which they seek certification must take at least 50% of the courses required for this certification at Grove City College.
- Candidates who start with no hours in the additional area of certification may only transfer six hours to Grove City College without special advance permission from the department head in their new area of certification.
- Candidates seeking certification must have a minimum career QPA of 3.00 and a minimum major QPA of 2.75 to enter the Grove City College program.

For candidates who have no certification but have a degree from a regionally accredited college or university, these guidelines are to be followed, contingent upon Grove City College and Pennsylvania Department of Education guidelines:

- Candidates who have had the required hours in their major (as shown on their status sheet) but require education courses for certification must take all of their education courses at Grove City College. (Under certain conditions up to six hours may be taken elsewhere with prior approval.) Candidates who have the required hours in their major may, however, be required to take up to fifteen additional hours in their subject area at the discretion of their subject area advisor.
- Candidates who have had their hours in education (as shown on their status sheet) but have not had the required subject area courses must take all of their subject area courses at Grove City College. (Under certain conditions up to six hours may be taken elsewhere with prior approval.)

- Candidates who have not had the required education and subject area courses will follow both of the above guidelines.
- Candidates must have completed the teacher education core curriculum courses.
- Candidates who have already earned an undergraduate degree must have a minimum career QPA of 3.00 and a minimum major QPA of 2.75 to enter the Grove City College program.
- Additional requirements for certification may include passing scores on the Praxis exam.

REQUIREMENTS FOR TEACHING IN OTHER STATES

Students seeking certification in states other than Pennsylvania should consult the credential officer in the Department of Education and research licensure requirements through specific state departments, offices, and/or bureaus of education.

INTERNATIONAL STUDENTS

International Students, who are not US citizens and who are interested in certification to teach, are advised to consult with the credential officer in the Department of Education for further information. The Pennsylvania Department of Education currently requires that candidates for certification be US Citizens or those who have signed a “declaration of intent” to become a US Citizen.

TEACHER'S EXAMINATIONS

Credential candidates must successfully complete the appropriate sections of the National Teachers Examination for certification in Pennsylvania or other states. Test information is available via the Department of Education Career Services website.

PREK-4 (ELEMENARY), SPECIAL EDUCATION (K-8), and MIDDLE LEVEL PROGRAMS (4-8)

Students completing programs of study that lead to certification for teaching may be required to complete more than the standard 128 hours required to graduate from Grove City College and may also incur additional tuition charges. Program requirements and other specific details are available in the Education Department Office.

Course Requirements for Bachelor of Science Degree in PreK-4 Elementary Education (PKEE)—79 hours

Liberal Arts Core (21 hours):

Art 321; Exercise Science 228; History 251, 252; Mathematics 151, 152; Music 315; Psychology 102 and 209.

Education Core Requirements (58 hours):

Education 202, 203, 204, 281, 323, 324, 325, 326, 327, 328, 342, 343, 381, 382, 383, 441, 443, 488; and Special Education 101.

Courses that count in the PKEE major quality point average (MQPA):

All courses with “EDUC” prefix, PSYC 102, 209, and SEDU 101. A minimum MQPA of 2.00 is required to graduate. A minimum CQPA of 3.00 and MQPA of 2.75 are required for certification.

Course Requirements for Bachelor of Science Degree in PreK-8 Special Education and PreK-4 Elementary Education (PKSE)—98 hours

Liberal Arts Core (21 hours):

Art 321; Exercise Science 228; History 251, 252; Mathematics 151, 152; Music 315; Psychology 102 and 209.

Education Core Requirements (53 hours):

Education 202, 203, 204, 281, 323, 324, 325, 326, 327, 328, 342, 343, 441, 488; Special Education 411 and 412.

Dual Certification in Special Education Requirements (24 hours):

Special Education 101, 202, 203, 204, 205, 306, 307, 308, 309, and 310.

Courses that count in the PKSE major quality point average (MQPA):

All courses with “EDUC” and “SEDU” prefixes; PSYC 102 and 209. A minimum MQPA of 2.00 is required to graduate. The minimum QPAs to be certified are 3.00 for the cumulative CQPA and 2.75 for the MQPA.

Course Requirements for Bachelor of Science Degree in Middle Level (4-8) Math/English Education (MLME)—99 hours

Liberal Arts Core (27 hours):

History 251, 252; Mathematics 151, 152; Psychology 102; Science 201 or Physics lab course; Science 202 or Biology lab course; and Science 203 or Chemistry lab course.

Math/English Content (18 hours):

Three MATH prefix courses (9 hours); and three COMM/ENGL prefix courses (9 hours) choosing from the following: English 203, 204, 222, 230, 261, 271, 302, 351, 352, 402, Communication Studies 104, 225, 235, or 378.

Education Core Requirements (54 hours):

Education 202, 203, 204, 228, 323, 324, 325, 326, 327, 329, 381, 382, 383, 442, 444, 488; Special Education 101.

Courses that count in the MLME major quality point average (MQPA):

All courses with “EDUC” prefix and SEDU 101. A minimum MQPA of 2.00 is required to graduate. A minimum CQPA of 3.00 and MQPA of 2.75 are required for certification.

Course Requirements for Bachelor of Science Degree in Middle Level (4-8) Math/History Education (MLMH)—90 hours

Liberal Arts Core (27 hours):

History 251, 252; Mathematics 151, 152; Psychology 102; Science 201 or Physics lab course; Science 202 or Biology lab course; and Science 203 or Chemistry lab course.

Math Content (9 hours):

Three MATH prefix courses.

Education Core Requirements (54 hours):

Education 202, 203, 204, 228, 323, 324, 325, 326, 327, 329, 381, 382, 383, 442, 444, 488; and Special Education 101.

Courses that count in the MLMH major quality point average (MQPA):

All courses with “EDUC” prefix and SEDU 101. A minimum MQPA of 2.00 is required to graduate. A minimum CQPA of 3.00 and MQPA of 2.75 are required for certification.

Course Requirements for Bachelor of Science Degree in Middle Level (4-8) Science/English Education (MLSE)—94 hours

Liberal Arts Core (15 hours):

History 251, 252; Mathematics 151, 152; and Psychology 102.

Science/English Content (25 hours):

Science 201 or Physics lab course; Science 202 or Biology lab course; Science 203 or Chemistry lab course; one additional four-credit science course; and three COMM/ENGL prefix courses (9 hours) choosing from the following: English 203, 204, 222, 230, 261, 271, 302, 351, 352, 402, Communication Studies 104, 225, 235, or 378.

Education Core Requirements (54 hours):

Education 202, 203, 204, 228, 323, 324, 325, 326, 327, 329, 381, 382, 383, 442, 444, 488; Special Education 101.

Courses that count in the MLSE major quality point average (MQPA):

All courses with “EDUC” prefix and SEDU 101. A minimum MQPA of 2.00 is required to graduate. A minimum CQPA of 3.00 and MQPA of 2.75 are required for certification.

Course Requirements for Bachelor of Science Degree in Middle Level (4-8) Science/History Education (MLSH)—85 hours

Liberal Arts Core (9 hours):

Math 151, 152; and Psychology 102.

Science/History Content (22 hours):

History 251 and 252; Science 201 or Physics lab course; Science 202 or Biology lab course; Science 203 or Chemistry lab course; one additional four-credit science course.

Education Core Requirements (54 hours):

Education 202, 203, 204, 228, 323, 324, 325, 326, 327, 329, 381, 382, 383, 442, 444, 488; Special Education 101.

Courses that count in the MLSH major quality point average (MQPA):

All courses with “EDUC” prefix and SEDU 101. A minimum MQPA of 2.00 is required to graduate. A minimum CQPA of 3.00 and MQPA of 2.75 are required for certification.

Course Requirements for Bachelor of Science Degree in Middle Level (4-8) Science/Math Education (MLSM)—94 hours

Liberal Arts Core (15 hours):

History 251, 252; Mathematics 151, 152; and Psychology 102.

Science/Math Content (25 hours):

Three MATH prefix courses (9 hours); Science 201 or Physics lab course; Science 202 or Biology lab course; Science 203 or Chemistry lab course; and one additional four-credit science course.

Education Core Requirements (54 hours):

Education 202, 203, 204, 228, 323, 324, 325, 326, 327, 329, 381, 382, 383, 442, 444, 488; Special Education 101.

Courses that count in the MLSM major quality point average (MQPA):

All courses with “EDUC” prefix and SEDU 101. A minimum MQPA of 2.00 is required to graduate. A minimum CQPA of 3.00 and MQPA of 2.75 are required for certification.

Course Requirements for Bachelor of Science Degree in Middle Level (4-8) Math/English Education and PreK-4 Elementary Education (MMEE)—113 hours

Liberal Arts Core (27 hours):

History 251, 252; Mathematics 151, 152; Psychology 102; Science 201 or Physics lab course; Science 202 or Biology lab course; and Science 203 or Chemistry lab course.

Math/English Content (18 hours):

Three MATH prefix courses (9 hours); and three COMM/ENGL prefix courses (9 hours) choosing from the following: English 203, 204, 222, 230, 261, 271, 302, 351, 352, 402, Communication Studies 104, 225, 235, or 378.

Education Core Requirements (53 hours):

Education 202, 203, 204, 228, 323, 324, 325, 326, 327, 329, 381, 382, 441, 444, 488; Special Education 101.

Dual Certification in PreK-4 Elementary Education Requirements (15 hours):

Art 321; Exercise Science 228; Music 315; Psychology 209; Education 281, 328, 342, 343.

Courses that count in the MMEE major quality point average (MQPA):

All courses with “EDUC” prefix and SEDU 101. A minimum MQPA of 2.00 is required to graduate. A minimum CQPA of 3.00 and MQPA of 2.75 are required for certification.

Course Requirements for Bachelor of Science Degree in Middle Level (4-8) Math/History Education and PreK-4 Elementary Education (MMHE)—114 hours

Liberal Arts Core (27 hours):

History 251, 252; Mathematics 151, 152; Psychology 102; Science 201 or Physics lab course; Science 202 or Biology lab course; and Science 203 or Chemistry lab course.

Math Content (9 hours):

Three MATH prefix courses.

Education Core Requirements (53 hours):

Education 202, 203, 204, 228, 323, 324, 325, 326, 327, 329, 381, 382, 441, 444, 488; and Special Education 101.

Dual Certification in PreK-4 Elementary Education Requirements (15 hours):

Art 321; Exercise Science 228; Music 315; Psychology 209; Education 281, 328, 342, 343.

Courses that count in the MMHE major quality point average (MQPA):

All courses with “EDUC” prefix and SEDU 101. A minimum MQPA of 2.00 is required to graduate. A minimum CQPA of 3.00 and MQPA of 2.75 are required for certification.

Course Requirements for Bachelor of Science Degree in Middle Level (4-8) Science/English Education and PreK-4 Elementary Education (MSEE)—108 hours

Liberal Arts Core (15 hours):

History 251, 252; Mathematics 151, 152; and Psychology 102.

Science/English Content (25 hours):

Science 201 or Physics lab course; Science 202 or Biology lab course; Science 203 or Chemistry lab course; one additional four-credit science course; and three COMM/ENGL prefix courses (9 hours) choosing from the following: English 203, 204, 222, 230, 261, 271, 302, 351, 352, 402, Communication Studies 104, 225, 235, or 378.

Education Core Requirements (53 hours):

Education 202, 203, 204, 228, 323, 324, 325, 326, 327, 329, 381, 382, 441, 444, 488; Special Education 101.

Dual Certification in PreK-4 Elementary Education Requirements (15 hours):

Art 321; Exercise Science 228; Music 315; Psychology 209; Education 281, 328, 342, 343.

Courses that count in the MSEE major quality point average (MQPA):

All courses with “EDUC” prefix and SEDU 101. A minimum MQPA of 2.00 is required to graduate. A minimum CQPA of 3.00 and MQPA of 2.75 are required for certification.

Course Requirements for Bachelor of Science Degree in Middle Level (4-8) Science/History Education and PreK-4 Elementary Education (MSHE)—99 hours

Liberal Arts Core (9 hours):

Math 151, 152; and Psychology 102.

Science/History Content (22 hours):

History 251, 252; Science 201 or Physics lab course; Science 202 or Biology lab course; Science 203 or Chemistry lab course; and one additional four-credit science course.

Education Core Requirements (53 hours):

Education 202, 203, 204, 228, 323, 324, 325, 326, 327, 329, 381, 382, 441, 444, 488; Special Education 101.

Dual Certification in PreK-4 Elementary Education Requirements (15 hours):

Art 321; Exercise Science 228; Music 315; Psychology 209; Education 281, 328, 342, 343.

Courses that count in the MSHE major quality point average (MQPA):

All courses with “EDUC” prefix and SEDU 101. A minimum MQPA of 2.00 is required to graduate. A minimum CQPA of 3.00 and MQPA of 2.75 are required for certification.

Course Requirements for Bachelor of Science Degree in Middle Level (4-8) Science/Math Education and PreK-4 Elementary Education (MSME)—108 hours

Liberal Arts Core (15 hours):

History 251, 252; Mathematics 151, 152; and Psychology 102.

Science/Math Content (25 hours):

Three MATH prefix courses (9 hours); Science 201 or Physics lab course; Science 202 or Biology lab course; Science 203 or Chemistry lab course; and one additional four-credit science course.

Education Core Requirements (53 hours):

Education 202, 203, 204, 228, 323, 324, 325, 326, 327, 329, 381, 382, 441, 444, 488; Special Education 101.

Dual Certification in PreK-4 Elementary Education Requirements (15 hours):

Art 321; Exercise Science 228; Music 315; Psychology 209; Education 281, 328, 342, 343.

Courses that count in the MSME major quality point average (MQPA):

All courses with “EDUC” prefix and SEDU 101. A minimum MQPA of 2.00 is required to graduate. A minimum CQPA of 3.00 and MQPA of 2.75 are required for certification.

Students are expected to contact their advisors for a detailed schedule of courses recommended to meet requirements for a major.

EDUCATION (EDUC)

EDUC 202. FOUNDATIONS OF TEACHING. A study of the pedagogical framework of education with emphasis on the legal and organizational issues related to American institutions of education. This includes an analysis of the current reform movements and the impact upon the role of the professional educator. *Semester course, three hours.*

EDUC 203. CULTURALLY RELEVANT PEDAGOGY. A study of the characteristics and educational needs of learners from diverse cultural backgrounds. The course is designed to equip educators with methods to address the educational needs of culturally diverse groups and students from limited English backgrounds. This course satisfies the Information Literacy (IL) requirement for PreK-4 Elementary and Middle Level Education majors. Prerequisites: Education 202 and Psychology 102. For education majors only. *Semester course, three hours.*

EDUC 204. TECHNOLOGIES OF INSTRUCTION. An introduction to educational media with an emphasis on applications of computer technology in education; general models for computer usage in education and educational institutions; and case studies of specific projects in terms of approach, effectiveness, and implications for the future. Emphasis will be on the application of educational media and technology within the K-12 school curriculum. For education majors only. *Semester course, three hours.*

EDUC 213. PREK-4 ELEMENTARY MUSIC PEDAGOGY. A study of music methods, pedagogy, materials, and applications for the PreK-4 elementary music teacher. Directed field experience in the PreK-4 schools is required. *Fall semester only, two hours.*

EDUC 214. MIDDLE LEVEL MUSIC PEDAGOGY. A study of music methods, pedagogy, materials, and applications for the middle level (grades 5-8) music teacher. Directed field experience in the middle level schools is required. *Spring semester only, two hours.*

EDUC 228. SURVEY OF ADOLESCENT LITERATURE. A survey of young adult literature for educators teaching in upper elementary, middle grades (4-8) with an extensive representation of books from classic and contemporary authors. Major literary genres are studied, trends in adolescent literature are discussed, and issues in selecting and using literature in the 4-8 classrooms are explored. Priority given to Middle Level and English Secondary Education Certification majors. *Spring semester only, two hours.*

EDUC 260. INDEPENDENT STUDY. Individual study of specialized topics in education. Sophomore standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

EDUC 270. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in education. Sophomore standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

EDUC 281. EARLY CHILDHOOD FIELD EXPERIENCE (FIRST LEVEL). This one-credit field experience is an internship course designed to permit beginning level early education students to engage in a semester-long field experience in the Early Education Center. This course is required for Early Childhood certification. Freshman or sophomore level course. *Semester course, one hour.*

EDUC 305. BASIC PRINCIPLES OF CURRICULUM AND INSTRUCTION. This course is divided into sections by specific secondary certification areas. The course is designed to prepare secondary credential candidates with the ability to apply basic concepts of curriculum and instruction in their specific discipline and to use a wide variety of strategies for planning, conducting, and evaluating units of instruction. The course places emphasis on the materials being used in the secondary classrooms and includes classroom management; instructional materials selection; reading in the content areas; lesson presentation and critique; and conferencing techniques. This course is limited to students who have been admitted to and are in good standing in the credentials program. This course is to be taken the semester before the actual student teaching experience and taken concurrently with specific methods courses (Education 306-310). *Semester course, three hours.*

EDUC 306. FIELD EXPERIENCE/METHODS OF TEACHING MATHEMATICS. A study of the methods, materials, organization of subject matter, and professional perspective of mathematics instruction in the secondary schools. Designed to complement and expand upon the skills developed in curriculum and instruction. An extensive clinical field experience is a required part of this course. Prerequisite: Junior or senior standing. Corequisite: Education 305. *Semester course, two hours.*

EDUC 307. METHODS OF TEACHING MODERN LANGUAGES. A course designed to familiarize students with both theoretical and practical aspects of teaching foreign languages: listening, speaking, reading, writing, and culture. Designed to complement and expand upon skills developed in curriculum and instruction. Corequisite: Education 305. *Fall semester only, three hours.*

EDUC 308. FIELD EXPERIENCE/METHODS OF TEACHING ENGLISH AND COMMUNICATION. A study of the methods, materials, organization of subject matter, and professional perspective of English and communication instruction in the secondary schools. Designed to complement and expand upon the skills developed in curriculum and instruction. An extensive clinical field experience is a required part of this course. Corequisite: Education 305. *Semester course, two hours.*

EDUC 309. FIELD EXPERIENCE/METHODS OF TEACHING SCIENCE. A study of the methods, materials, organization of subject matter, and professional perspective of science instruction in the secondary schools. Designed to complement and expand upon skills developed in curriculum and instruction. An extensive clinical field experience is a required part of this course. Corequisite: Education 305. *Spring semester only, two hours.*

EDUC 310. FIELD EXPERIENCE/METHODS OF TEACHING THE SOCIAL SCIENCES. A study of the methods, materials, organization of subject matter, and professional perspective of social science instruction in the secondary schools. Designed to complement and expand upon skills developed in curriculum and instruction. An extensive clinical field experience is a required part of this course. Corequisite: Education 305. *Semester course, two hours.*

EDUC 313. SECONDARY CHORAL AND GENERAL MUSIC PEDAGOGY. A study of music methods, pedagogy, materials, and applications for the secondary (grades 9-12) general and vocal music teacher. Directed field experience in the secondary choral classroom/school is required. *Fall semester only, two hours.*

EDUC 314. SECONDARY INSTRUMENTAL MUSIC PEDAGOGY. A study of music methods, pedagogy, materials, and applications for the secondary (grades 9-12) instrumental music teacher. Directed field experience in the secondary schools is required. *Spring semester only, two hours.*

EDUC 323. TEACHING PRIMARY AND ELEMENTARY LITERACY. A course designed to acquaint future elementary and early childhood teachers with strategies for developing emergent literacy in reading and the integrated language arts. Topics include methods to develop print awareness, decoding ability, and reading extended text. The course will also explore the developmental continuum of language and literacy, including writing, speaking, listening, visualizing and viewing. Direct field experience is required in the elementary school where students will utilize assessment techniques, plan lessons, and use a variety of approaches and materials in instructing students. Prerequisites: Sophomore

standing elementary and special education majors, junior elementary education and middle level majors, or with special permission from the course instructor and completion of Education 202, Psychology 102, and one other methods course. Elementary Education, Middle Level Education, and Special Education majors only. Corequisite: Education 382. *Fall semester only, three hours.*

EDUC 324. TEACHING ELEMENTARY SOCIAL SCIENCES. A study of resources and methods of teaching PreK-8 social studies including history, geography, civics, and economics. This course also emphasizes the development of competencies associated with the use of audio-visual equipment and materials. Directed field experience in the elementary and middle schools is required. Prerequisite: Sophomore standing. *Semester course, three hours.*

EDUC 325. TEACHING ELEMENTARY SCIENCE AND HEALTH. A course of instruction in methods of teaching PreK-8 science, health, and physical education. Includes classroom development of competencies in the planning and use of hands-on materials and application in classroom instruction. Directed field experience in the elementary and middle schools is required. Prerequisite: sophomore standing. *Semester course, three hours.*

EDUC 326. TEACHING UPPER ELEMENTARY/MIDDLE LITERACY. A course designed to acquaint elementary, early childhood, and English education majors about methods to teach literacy (reading and the integrated language arts) to upper elementary and middle school level students. Topics include methods to develop vocabulary knowledge, comprehension, expressive writing, and content area reading. Direct field experience in elementary or middle schools is required. Prerequisites: Junior or senior standing for PreK-4 majors, or special permission from course instructor; elementary majors must have completed Education 202, 323, 327; and Psychology 102; English majors must have sophomore standing and must have completed Education 202, and Psychology 102. Corequisite: Education 383. Restricted to elementary education, English Secondary Education Certification, and Middle Level majors only. *Spring semester only, three hours.*

EDUC 327. TEACHING ELEMENTARY MATHEMATICS. Elementary mathematics concepts and pedagogy will be introduced within the framework of the curriculum and evaluation standards recommended by the National Council of Teachers of Mathematics. Mathematical strands to be explored include: geometry; measurement; number sense; whole number operations; patterns and functions; fraction and decimal operations; graphing; statistics; and probability. A strong emphasis will be placed on problem solving as a skill needed to make informed decisions about life. All concepts will be taught with a dependence on manipulative activities. The scope of the course goes from early childhood to adolescence. A structured field experience is embedded within the course. It is strongly recommended that this course be completed before taking additional three-credit elementary methods courses. Prerequisite: Sophomore standing. *Semester course, three hours.*

EDUC 328. CHILDREN'S LITERATURE AND LANGUAGE. A survey of children's literature for early childhood, intermediate, and middle grades with an extensive representation of books from classic and contemporary authors and illustrators. Major literary genres are studied, story-telling techniques are discussed, and issues in literature for children are explored. Additionally, the course discusses the linguistic development in children that is fostered through exposure to literature. Open to PreK-4 and middle certification majors only. Priority given to PreK-4 majors. Prerequisite: Psychology 102. *Semester course, two hours.*

EDUC 329. MIDDLE LEVEL CURRICULUM AND INSTRUCTION. This course provides middle level certification candidates with an in-depth study of middle level education that focuses on meeting the needs of adolescent learners. Topics will include the role of collaboration in departmentalized middle level programs, adolescent guidance, management of the learning environment, and school governance in middle and junior high settings. Prerequisite: Psychology 102. *Fall semester only, three hours.*

EDUC 330. LITERATURE AND WRITING FOR THE SECONDARY CLASSROOM. A course designed to familiarize the student with both theoretical and practical aspects of teaching literature and writing used at the secondary level. Included will be a discussion of literature selection, treatment of

the material, and writing assessment procedures. Traditional works will be emphasized. Prerequisites: Education 202 and Psychology 102. *Fall semester only, three hours.*

EDUC 342. EARLY CHILDHOOD CURRICULUM AND INSTRUCTION. This course provides an overview of all curriculum components essential for operating an early childhood classroom with a focus on preschool and primary environments. Major curriculum approaches explored and implemented in early childhood settings include a traditional structured approach, a thematic approach, and the project approach. An awareness of learning styles, diversity, and special needs are integral to effective planning. The role of assessment in the curriculum sequence is included. Students are required to implement curriculum approaches in selected sites. Sophomore or junior level course. Prerequisites: Education 281 and Psychology 102. *Semester course, three hours.*

EDUC 343. TRENDS AND ISSUES IN EARLY CHILDHOOD EDUCATION. This course examines contemporary trends and issues surrounding early childhood education discussing sociological, psychological, political, and economic forces shaping contemporary families, children, and schooling. Current educational practices, curriculum, and administration of programs are integral topics included in this study. Senior level course. Prerequisites: Education 281 or Special Education 203, and Education 342. *Semester course, three hours.*

EDUC 350. EDUCATION FOR THE MISSION FIELD. This course seeks to provide students with the opportunity to learn more about the philosophy and structure of international, missional, and national schools. A strong focus will be provided on how to partner with nationals to advance their own teaching abilities. Students will have the opportunity to interact with several alumni who are currently teaching on the mission field. The final component of the course will be a service-learning project for a mission school. *Alternate years, spring semester only, one hour.*

EDUC 360. INDEPENDENT STUDY. A course designed to permit students to do advanced study or to participate in educational experiences that provide an opportunity for professional and/or educational self-improvement. Junior standing, permission of the department chair and a faculty sponsor are required. *Semester course, one, two or seven hours.*

EDUC 370. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in education. Junior standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

EDUC 371. SECONDARY FIELD EXPERIENCE (FIRST LEVEL). An internship course designed to permit students to engage in five full days of observational field experience in a public secondary school as approved by the instructor. Prerequisite: Psychology 102. *Semester course, one hour.*

EDUC 372. SECONDARY FIELD EXPERIENCE (SECOND LEVEL). An internship course designed to permit secondary language majors and K-12 Music majors to engage in an observational and participatory field experience as approved by the instructor. Prerequisite: Education 371. *Semester course, one hour.*

EDUC 373. SECONDARY FIELD EXPERIENCE (THIRD LEVEL). An internship course designed to permit secondary language majors and K-12 Music majors to engage in pre-student teaching. Participatory field experience approved by the instructor. Prerequisite: Education 371. *Semester course, one hour.*

EDUC 381. ELEMENTARY FIELD EXPERIENCE (FIRST LEVEL). An internship course designed to permit students to engage in a thirty to forty-hour entry-level field experience in an elementary school. Field experience interns observe experienced teachers in classroom settings noting organizational structures, curriculum issues, and students' development. Diverse educational settings are strongly encouraged. Prerequisite: Psychology 102. *Semester course, one hour.*

EDUC 382. ELEMENTARY FIELD EXPERIENCE (SECOND LEVEL). An internship course designed to permit students to engage in thirty to forty hours of observational and participatory field experience in an elementary school. Field experience interns observe teachers in classroom settings **and** assume some level of teaching responsibility. Diverse educational settings are strongly recommended. Prerequisite: Education 381. Corequisite: Education 323. *Semester course, one hour.*

EDUC 383. ELEMENTARY FIELD EXPERIENCE (THIRD LEVEL). An internship course designed to permit students to engage in thirty to forty hours of observational and participatory field experience in an elementary school. Field experience interns observe teachers in classroom settings **and** assume some level of teaching responsibility. Diverse educational settings are strongly recommended. Prerequisite: Education 382. *Semester course, one hour.*

EDUC 385. EARLY CHILDHOOD FIELD EXPERIENCE (SECOND LEVEL). This one-credit **second** field experience is an internship course designed to permit students who desire to gain additional experience working with young children to engage in a semester-long field experience in the Early Education Center. Sophomore or junior level course. Prerequisite: Education 281. *Semester course, one hour.*

EDUC 386. EARLY CHILDHOOD FIELD EXPERIENCE (THIRD LEVEL). This two-credit **third** field experience is an internship course designed to permit students more in-depth experience in studying and teaching young children. Students may choose between Education 385 and 386 for a second field experience in early childhood. Sophomore or junior level course. Prerequisites: Education 281 and 385. *Semester course, two hours.*

EDUC 390. STUDIES: SPECIAL TOPICS COURSE. This course is taught by a visiting scholar from the field of education. The topic for each course will vary from year to year. The course will consist of a minimum of two two-hour lectures on the topic plus a paper of specified length related to the topic. Prerequisite: Junior or senior education majors. *Semester course, one, two or three hours.*

EDUC 431. STUDENT TEACHING, SECONDARY. Secondary credential candidates (seniors) student teach at the junior/middle school and/or high school levels in the public secondary schools five days per week for one semester and attend one practicum session per week. *Semester course, sixteen hours.*

EDUC 432. STUDENT TEACHING, SECONDARY. Secondary credential candidates (seniors) student teach at the junior/middle school and/or high school levels in the public secondary schools five days per week for one half of a semester and attend one practicum session per week. Departmental permission required. *One-half semester course, eight hours.*

EDUC 435. STUDENT TEACHING, ELEMENTARY MUSIC. Senior level Music Education credential candidates student teach in elementary public schools an equivalency of five days per week for seven weeks and attend one practicum session per week. Corequisite: Education 437. *One-half semester course, eight hours.*

EDUC 437. STUDENT TEACHING, SECONDARY MUSIC. Senior level Music Education credential candidates student teach at the junior/middle school and/or high school levels in the public secondary schools, an equivalency of five days per week for seven weeks and attend one practicum session per week. Corequisite: Education 435. *One-half semester course, eight hours.*

EDUC 441. ELEMENTARY STUDENT TEACHING, PRIMARY GRADES. Senior level Elementary Education candidates student teach full time in PreK and elementary public schools for seven weeks in a primary classroom (pre-kindergarten, kindergarten, first, second, or third grade) and attend one practicum session per week. *One-half semester course, eight hours.*

EDUC 442. STUDENT TEACHING MIDDLE LEVEL I. Senior level Middle Education candidates student teach full-time in an upper elementary/middle public school for seven weeks in a classroom serving upper/elementary or early middle school learners (grades 4, 5, 6). In addition to

student teaching responsibilities, Middle Education candidates also attend one practicum session per week. Prerequisites: Senior standing and completion of all methodology courses required for middle level certification. *One-half semester course, eight hours.*

EDUC 443. ELEMENTARY STUDENT TEACHING, INTERMEDIATE GRADES. Senior level Elementary Education credential candidates student teach full time in the elementary public schools for seven weeks in an intermediate classroom (fourth, fifth, or sixth grade) and attend one practicum session per week. *One-half semester course, eight hours.*

EDUC 444. STUDENT TEACHING MIDDLE LEVEL II. Senior level Middle Education candidates student teach full-time in a middle/junior high public school for seven weeks in a classroom serving upper/elementary or early middle school learners (grades 6, 7, 8). In addition to student teaching responsibilities, Middle Education candidates also attend one practicum session per week. Prerequisites include senior level standing and completion of all methodology courses required in middle level certification. *One-half semester course, eight hours.*

EDUC 460. INDEPENDENT STUDY. A course designed to permit students to do advanced study or to participate in educational experiences that provide an opportunity for professional and/or educational self-improvement. Senior standing, permission of the department chair and a faculty sponsor are required. *Semester course, one, two or seven hours.*

EDUC 470. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in education. Senior standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

EDUC 480. INTERNSHIP IN EDUCATION. An opportunity for junior or senior level education majors to participate in approved experiences that provide extraordinary leadership roles in applying educational theory to practice, under the supervision of an on-site manager and a department faculty member. Products of the internship include a log, evaluation by the on-site manager, and all other requirements established within the faculty approved Contract of Expected Responsibilities and Outcomes. Prerequisites: Acceptable standing within the Education Department and permission of the Chair or Associate Chair of the Education Department. *Semester course, one to six hours.*

EDUC 488. SEMINAR: ISSUES IN EDUCATION/COMPARATIVE EDUCATION. A capstone course for senior credential candidates that re-examines the major philosophical, historical, social, political, and psychological issues as they impact the teaching profession. Successful educational practices from various countries of the world will be studied as the student considers possible solutions to the crisis facing American education today. This course satisfies the Writing Intensive (WI), Speaking Intensive (SI) and Information Literacy (IL) requirement for all education majors. *Semester course, three hours.*

SPECIAL EDUCATION (SEDU)

SEDU 101. EXCEPTIONAL LEARNERS. This course is a foundational study of the characteristics, etiology, and psychological and educational needs of individuals eligible for special education services, focusing on the implication of such needs on the educator and meeting of individual needs in a standards-aligned system. The course also introduces students to the processes, professionals, and strategies for identifying individual needs and the establishment and delivery of required special education services. An embedded special education field experience is part of this course. Prerequisites: Psychology 102 and appropriate clearances. *Semester course, three hours.*

SEDU 202. BEHAVIORAL INTERVENTIONS. Topics include assessment and intervention with a focus on ethics and methods to increase and decrease behaviors. Students will carry out behavioral analyses and intervention to design and implement individual and group behavior plans for special education populations while gaining proficiency in developing pro-social behaviors and in direct instruction to explicitly teach appropriate social skills and communication. Furthermore, students will implement intervention strategies appropriately in compliance with IEP goals with respect for student

safety and individual needs. Prerequisites: Psychology 102, Special Education 101, and appropriate clearances and standing in the certification program at Grove City College. Corequisite: Special Education 203. *Fall semester only, three hours.*

SEDU 203. SPECIAL EDUCATION SYSTEMS AND PROCESSES/FIELD EXPERIENCE LEVEL I. This field experience based course will provide the prospective teacher with opportunities to interact and instruct students with Special Education labels as they work with both Regular Education and Special Education teachers. Student-interns enrolled in this field will function as skilled observers/explorers and pre-student teacher tutors as they collect information and prepare and deliver lessons to small groups and individual students while spending at least 35 hours in the field, focusing on the special education process, LRE, Participation in a Standards Aligned Curriculum, and Behavioral Interventions. Prerequisites: Psychology 102, Special Education 101, and appropriate clearances and standing in the certification program at Grove City College. Corequisite: Special Education 202, as assignments from that course will be tied to this field experience. *Fall semester only, one hour.*

SEDU 204. EDUCATIONAL ASSESSMENT IN SPECIAL EDUCATION. This is an in-depth study of the tools and processes used in identification of and programming for the Exceptional Population. Expertise will be developed in the implementation of unbiased multiple-layered assessment tools and their subsequent application in IEP programming. Students will become proficient in providing and evaluating in-depth authentic, benchmark, diagnostic, formative, screening, and summative assessment data related to meeting the needs of those being considered for or identified within the special education population. Prerequisites: Psychology 102, Special Education 101, and appropriate clearances and standing in the certification program at Grove City College. *Spring semester only, three hours.*

SEDU 205. CONSULTATION, LITIGATION, AND TRANSITION. Students will prepare skills for building productive professional interactions with parents, educators, service providers, and community professionals. Additionally, historical cases and current litigation will be studied to enable students to design and implement programs that provide full procedural safeguards to all constituents while gaining expertise in aligning resources, securing providers, and mediating forces to provide for the full spectrum of support services both legally and ethically. Prerequisites: Psychology 102, Special Education 101, and clearances and standing in the certification program at Grove City College. *Spring semester only, three hours.*

SEDU 306. SUPPORTIVE SERVICES AND TECHNOLOGY / FIELD EXPERIENCE LEVEL II. This field experience based course will provide the student-intern with opportunities to interact and instruct students with Special Education Labels as they work with both Regular Education and Special Education teachers. Specifically, this experience will be selected to provide a 25-hour experience with students receiving special education services under the labels of moderate to severely handicapped. Prerequisites: Psychology 102; Special Education 101, 202, 203, 204, 205; and appropriate clearances and standing in the certification program at Grove City College. Corequisite: Special Education 307, as assignments from that course will be tied to this field experience. *Fall semester only, one hour.*

SEDU 307. EVIDENCE BASED INSTRUCTION OF LOW INCIDENCE DISABILITIES Students will develop advanced skills in meeting the needs of special education students with labels of Autistic, Visually Impaired/Blind, Hearing Impaired/Deaf, Multiple Handicapped, Severe Disabilities, Orthopedic Impairments, and Traumatic Brain Injury. Students will demonstrate knowledge of facilitating inclusion, managing the environment, and the use of available technology to design and implement programs, while continuously monitoring progress, providing remediation and compensation techniques, and providing alternative routes to achievement across all areas of the continuum of services. Prerequisites: Psychology 102; Special Education 101, 202, 203, 204, 205; and appropriate clearances and standing in the certification program at Grove City College. Corequisite: Special Education 306. *Fall semester only, three hours.*

SEDU 308. READING DISABILITIES. This is an advanced level course in literacy methods aimed at preparing students to meet the needs of the special education population who experience difficulty

in literacy development. Students will study research-based findings related to the causes and research-based strategies on ameliorating such difficulties. Key components of the course focus on the appropriate use of materials, assessment instruments, teaching strategies, and a variety of service delivery models to optimize the success of individual students. This course also includes an ongoing clinical field experience throughout the semester in which students will collaborate with a practicing special educator of reading specialist to work with a student with literacy needs. Prerequisites: Psychology 102; Special Education 101, 202, 203, 204, 205; Education 323, 326; and appropriate clearances and standing in the certification program at Grove City College.

Fall semester only, three hours.

SEDU 309. EVIDENCE BASED INSTRUCTION OF HIGH INCIDENCE DISABILITIES.

Students will develop advanced skills in meeting the needs of special education students with labels of Learning Disabled, Speech and Language Impaired, Mentally Retarded/Cognitively Impaired, Seriously Emotionally Disturbed, and Attention Deficit Disorder (Other Health Impaired). Students will demonstrate knowledge of facilitating inclusion, managing the environment, and the use of available technology to design and implement programs. As appropriate, students will provide integrated learning experiences, multiple instructional approaches, and evidence-based decisions. Prerequisites: Psychology 102; Special Education 306, 307; Education 323, 326; and appropriate clearances and standing in the certification program at Grove City College. Corequisite: Special Education 310.

Spring semester only, three credits.

SEDU 310. EFFECTIVE PRACTICES AND DELIVERY/ FIELD EXPERIENCE LEVEL III.

This field experience based course will provide students with opportunities to interact and instruct students with Special Education Labels as they work with both Regular Education and Special Education teachers. Specifically, this 25-hour experience will be selected to provide experience with Special Education students with labels considered as High Incidence Disabilities. Prerequisites: Psychology 102; Special Education 306, 307; Education 323, 326; and appropriate clearances and standing in the certification program at Grove City College. Corequisite: Special Education 309.

Spring semester only, one hour.

SEDU 411. SPECIAL EDUCATION STUDENT TEACHING.

Student teaching is a capstone rigorous experience that provides the opportunity to practice and demonstrate the practices of a competent Special Education teacher under the supervision of a certified Special Educator. At the completion of the student teaching experiences, student teachers are expected to demonstrate mastery in implementing the competencies that have been developed from coursework. Student teachers who achieve the necessary competencies will be recommended for special education certification. Issuance of certification will hinge on the completion of all graduation and certification requirements, including student teaching, and must be initiated by the teaching candidate through the office of the College Certifying Officer. Pre-requisites: All special education coursework (other than SEDU 412) must be successfully completed and the teacher candidate must have the approval of the Department Chair. Other prerequisites include appropriate clearances and standing in the certification program at Grove City College. Corequisites: Special Education 412 and Education 441. Students will spend one half of the semester in the special education student teaching assignment and one half of the semester completing PreK-4 student teaching.

Semester course, eight hours.

SEDU 412. PRACTICUM OF PROFESSIONAL DEVELOPMENT.

As an extension of the student teaching experience, student teachers will participate in a practicum experience including course work, assignments, and interaction with the college supervisor while exploring topics that are important to the development of the Professional Special Educator. Thus, the course will support the student teacher in applying theory to practice during the student teaching experience. Additionally, topics of professional responsibilities, confidentiality issues, and current issues in special education will be discussed. Corequisite: Special Education 411.

Semester course, one hour.

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

Dr. M. W. Bright, Chair; Dr. Christman, Dr. Chu, Dr. Mohr, Dr. Walker.

Electrical and Computer Engineering Department Mission Statement, Objectives, and Outcomes

Electrical and Computer Engineering (ECE) is the analysis, design, and application of devices and systems for conversion, processing, and transmission of electrical energy and information. Electrical and Computer Engineering at Grove City College now covers such basic topics as electric circuits, electronics, electrical machines, signal analysis, and digital systems; as well as advanced topics in communication systems, computer systems, and control systems. Electrical and computer engineers practice in a variety of professional duties including research, design and development, management, sales, field service, testing, manufacturing, and education.

The Electrical and Computer Engineering Department at Grove City College offers a program leading to the Bachelor of Science in Electrical Engineering (BSEE) degree. The electrical engineering program is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>.

Proficiency in writing and speaking skills is essential to a productive career in any branch of Electrical and Computer Engineering. To that end, all majors take Electrical Engineering 401 (Introduction to Design), as a Writing Intensive (WI) and Speaking Intensive (SI) course. In addition, all graduates need to know how to obtain, evaluate, and use technical information related to the field of Electrical and Computer Engineering. Instruction and practice in these Information Literacy (IL) skills is provided in the combination of the following required courses: Electrical Engineering 202, 251, and 351.

Electrical Engineering Program Educational Objectives

1. Graduates will be active in the electrical engineering profession or an alternative field consistent with their God-given calling. Many of our graduates will assume leadership roles as a result of having demonstrated strong technical abilities as well as communication and team skills.
2. Graduates will set career goals and engage in life-long learning through self-study, continuing education courses, and/or formal graduate education in order to reach those goals.
3. Graduates will demonstrate ethical behavior in the workplace and will carry out their professional duties in a manner that is consistent with a Christian life perspective.

Student Outcomes

To ensure fulfillment of the ECE Department objectives, graduates of the EE program shall demonstrate:

- a. An ability to apply knowledge of mathematics, science, and engineering.
- b. An ability to design and conduct experiments as well as to analyze and interpret data.
- c. An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- d. An ability to function on multi-disciplinary teams.
- e. An ability to identify, formulate, and solve engineering problems.
- f. An understanding of professional and ethical responsibility in a Christian context including recognition of the fundamental worth of individuals as creations of God,

- resulting in a consistent commitment to the safety and health of individuals, honesty, and impartiality in all affairs and faithfulness in serving both employers and clients.
- g. An ability to communicate effectively. This includes the ability to write clearly and cohesively about technical subjects, communicate mathematical analyses in a comprehensible form, and orally communicate on technical subjects with people at all different levels of technical ability.
 - h. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context. The following liberal arts areas are considered important in giving the Christian student a background for making judgments concerning engineering solutions: history of civilization, Biblical revelation, philosophy, literature, visual art, music, and modern civilization in international perspective.
 - i. A recognition of the need for and an ability to engage in life-long learning.
 - j. A knowledge of contemporary issues including both social and engineering issues.
 - k. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Inherent in the ECE curriculum at Grove City College is the inculcation of design experience. Engineering design is the process of devising a system, component, or process to meet desired needs. It is a decision-making process applying basic science, mathematics, and engineering science to use available resources to optimally meet stated objectives. In the EE program, engineering design is assured via design problems and projects integrated throughout the ECE curriculum.

Freshman Year-The *Introduction to Engineering* (ENGR 156) course introduces the profession of engineering and the design process. Students work in teams on a design project and present results in written and oral reports.

Sophomore and Junior Years-ECE students are afforded additional opportunities to solve relevant design problems through homework and group design projects in various courses in the sophomore and junior years. Design projects that incorporate course-specific topics along with techniques introduced in the freshman *Introduction to Engineering* course are assigned in *Digital Logic Design* (ELEE 204), *Electric Machines* (ELEE 303), and *Microcontrollers with Robotic Applications* (ELEE 310), and other courses as appropriate. These projects are presented in written and/or oral reports.

Senior Year-The integrated design experience in ECE at Grove City College culminates in the senior year with the capstone design project. The capstone design experience comprises a combination of research and proposal writing in *Electrical Engineering Design* (ELEE 401) in the fall semester of the senior year and hands-on implementation and documentation of that design in *Capstone Design Project II* (ELEE 452) in the spring semester. The project must incorporate one or more advanced topics chosen from the senior-level stem sequences in Communication Systems, Computer Systems, or Control Systems (students choosing the CE concentration must include the Computer Systems sequence). Since stem courses build on fundamentals presented in previous ECE courses, the capstone project assures that all ECE graduates complete a major design experience drawing on fundamental concepts as well as advanced ECE topics. While seniors are asked to present various oral and written updates throughout the capstone experience, the climax comes in the second semester of the senior year when students present oral and written reports to engineering professionals from nearby industries who judge the teams on various aspects of their designs.

Course Requirements for Bachelor of Science Degree in Electrical Engineering (ELEE)—98 hours (Computer Engineering Concentration); 99 hours (Electrical Engineering Concentration)

Electrical Engineering/Computer Core (28 hours)

Computer Science 141; Electrical Engineering 201, 204, 251, 252, 301, 304, 321, 351, 401; Electrical Engineering or Robotics 451 and 452.

Engineering Core (7 hours)

Engineering 156, 301, 402, and Mechanical Engineering 120.

Math/Science Core (30 hours)

Chemistry 105 or Biology 101; Mathematics 161, 162, 261, 262; Engineering 274 or Mathematics 214; and Physics 101 and 102.

Concentration Area—choose one:

Electrical Engineering Concentration (EEEE)—(34 hours):

- Electrical Engineering 202, 302, 303, and 352 (10 hours).
- Math/science elective (3-4 hours): Choose one course from the following: Astronomy 206, 207; Biology 101, 102; Chemistry 227, 241, 345; Mathematics 210, 213, 222, 331; or Physics 234.
- Technical electives* (15 hours): Select 15 hours from any 200-400 level Electrical Engineering, Robotics, Mechanical Engineering, or Computer Science course, excluding Electrical Engineering 210.
- Advanced electives* (6 hours): Select six hours from Electrical Engineering 404, 422, 432, or 442.

Computer Engineering Concentration (EECE)—(33 hours):

- Electrical Engineering 310, 441, 442; Computer Science 220, 222, 340; and Mathematics 213 (21 hours).
- Technical electives* (9 hours): Select 9 hours from any 200-400 level Electrical Engineering, Robotics, Mechanical Engineering, or Computer Science course, excluding Electrical Engineering 210.
- Advanced elective* (3 hours): Select one of Electrical Engineering 404, 422, or 432.

**No course can be used to satisfy both the technical and advanced elective requirements.*

Courses that count in the ELEE major quality point average (MQPA):

All courses with “ELEE” and “ROBO” prefix; ENGR 390; COMP 141, 220, 222, 340, and 450. A minimum MQPA of 2.00 is required to graduate.

FOUR-YEAR PLAN for ELECTRICAL ENGINEERING CONCENTRATION

FRESHMAN YEAR	1st Sem.	2nd Sem.	SOPHOMORE YEAR	1st Sem.	2nd Sem.
Mathematics 161-162	4	4	Mathematics 261-262	4	3
Physics 101	-	4	Physics 102	4	-
Humanities 102 - Writing 101	3	3	Electrical Engineering 201-202	3	3
Physical Education	1	1	Electrical Engineering 251	1	-
Computer 141	3	-	Electrical Engineering 321	-	3
Engineering 156	2	-	Mechanical Engineering 120	-	3
Chemistry 105 or Biology 101	4	-	Math - Science Elective	-	3
Electrical Engineering 204	-	3	Humanities 200	3	-
Electrical Engineering 252	-	1	SSFT course	2	-
	17	16		17	15

JUNIOR YEAR

Electrical Engineering 301-302	3	3
Electrical Engineering 303-304	3	3
Electrical Engineering 351-352	1	1
Engineering 301	1	-
Technical Electives	3	3
Math 214 or Engineering 274	-	3
Social Science course	3	-
Humanities 301-202	<u>3</u>	<u>3</u>
	17	16

SENIOR YEAR

Electrical Engineering 401	3	-
Electrical Engineering 451-452	1	3
Engineering 402	-	1
Technical Electives	6	3
Advanced Electives	-	6
Humanities 303	-	3
Free Electives	<u>4</u>	<u>-</u>
	14	16

FOUR-YEAR PLAN for COMPUTER ENGINEERING CONCENTRATION

<u>FRESHMAN YEAR</u>	1st Sem.	2nd Sem.	<u>SOPHOMORE YEAR</u>	1st Sem.	2nd Sem.
Mathematics 161-162	4	4	Mathematics 261-262	4	3
Physics 101	-	4	Physics 102	4	-
Humanities 102 - Writing 101	3	3	Electrical Engineering 201	3	-
Physical Education	1	1	Electrical Engineering 251	1	-
Computer 141	3	-	Electrical Engineering 321	-	3
Engineering 156	2	-	Mechanical Engineering 120	-	3
Chemistry 105 or Biology 101	4	-	Computer Science 220-222	3	3
Electrical Engineering 204	-	3	Humanities 200	-	3
Electrical Engineering 252	<u>-</u>	<u>1</u>	SSFT course	<u>2</u>	<u>-</u>
	17	16		17	15

JUNIOR YEAR

Electrical Engineering 301-304	3	3
Electrical Engineering 310	-	3
Electrical Engineering 351	1	-
Engineering 301	1	-
Technical Elective	3	-
Mathematics 213-214	3	3
Computer Science 340	-	3
Social Science course	3	-
Humanities 301-202	<u>3</u>	<u>3</u>
	17	15

SENIOR YEAR

Electrical Engineering 401	3	-
Electrical Engineering 441-442	3	3
Electrical Engineering 451-452	1	3
Engineering 402	-	1
Technical Electives	3	3
Advanced Elective	-	3
Humanities 303	-	3
Free Electives	<u>5</u>	<u>-</u>
	15	16

Course Requirements for a minor in Robotics (19-20 hours)

A minor in Robotics will consist of Robotics 301, 302; Engineering 301; a 3-4 credit robotics-related capstone project; and nine hours from Computer Science 445, Electrical Engineering 310, Mechanical Engineering 316, Mechanical Engineering 410, Electrical Engineering 421 or Mechanical Engineering 407, or Electrical Engineering 422.

Students are expected to contact their advisors for a detailed schedule of courses recommended to meet requirements for a major.

ENGINEERING CORE COURSES (ENGR)

ENGR 156. INTRODUCTION TO ENGINEERING. Introduces students to the engineering profession and the design process. Course lectures and assignments include the design process; problem definition and solution; oral and written communications; group dynamics; public responsibility; current global engineering challenges; and engineering ethics. A group design project is required. For electrical engineering students, this course is taken concurrently with Computer Science 141. For mechanical engineering students, this course is taken concurrently with Mechanical Engineering 120.

Semester course, two hours.

ENGR 220. CHEMICAL ENGINEERING FUNDAMENTALS. This course prepares students to formulate and solve material and energy balances on chemical process systems. Examples are drawn from a variety of industries, including pharmaceutical, food processing, and petrochemical. Prerequisites: Chemistry 102 or 105; and Mathematics 161. *Spring semester only, three hours.*

ENGR 274. MATHEMATICAL METHODS IN ENGINEERING. A course for engineering and science majors covering selected topics in probability and statistics, linear algebra, discrete mathematics, and numerical methods as applied to the solution of problems in engineering and science. Students who receive credit for Mathematics 213, 222, and 331 may not receive credit for Engineering 274. Prerequisite: Mathematics 261. *Semester course, three hours.*

ENGR 301. ETHICS IN ENGINEERING AND ROBOTICS. This course investigates ethical decision-making from a Christian perspective as it applies to engineering and robotics. It includes an overview of approaches to ethical decision-making, as well as particular issues raised by the robotics field, such as robots making military decisions, privacy issues with in-home robots, issues with emotional bonds, etc. *Semester course, one hour.*

ENGR 320. SEPARATION PROCESSES. The course provides the fundamentals of mass transfer and separation processes related to chemical engineering applications. Topics include distillation, absorption, stripping, and membrane separation. Examples are drawn from a variety of applications, including bioprocessing and nanotechnology. Prerequisites: Engineering 220 and one of Mechanical Engineering 214, Chemistry 346, or Physics 340. *Fall semester only, three hours.*

ENGR 390. SPECIAL ENGINEERING TOPICS. Special topics in the areas of new engineering development based on student demand and faculty interest. Specific subject matter varies each semester with prerequisites and credit hours announced in advance of registration. *Semester course, one, two, three or four hours.*

ENGR 402. ENGINEERING ECONOMY. Principles and methods for analyzing the economic feasibility of engineering projects including interest, depreciation, rate-of-return, economic life, replacement costs, and comparison of alternative designs. Prerequisite: Mathematics 141 or 161; junior or senior standing. *Spring semester only, one hour.*

ENGR 420. CHEMICAL REACTION ENGINEERING. This course introduces students to the fundamentals of chemical reaction engineering, including reactor sizing and design. Topics include rate laws, kinetics, isothermal and nonisothermal reactor design, and homogeneous and heterogeneous reaction systems. Prerequisites: Engineering 320; Corequisite: Mechanical Engineering 326. *Spring semester only, three hours.*

ENGR 480. INTERNSHIP IN ENGINEERING. An opportunity for junior or senior engineering majors to participate in an extended work experience (six months or more) under the supervision of an on-site manager and a department faculty member. Products of the internship will include an evaluation by the on-site manager, a journal of the internship experience, and a paper describing the experience and relating it to academic theory. This course may be repeated a maximum of three times. Prerequisite: Permission from the department chair. *Semester course, one hour.*

ELECTRICAL ENGINEERING (ELEE)

ELEE 201. LINEAR CIRCUITS I. An introduction to the analysis and design of electrical circuits composed of linear elements. The course begins with time domain analysis of the steady state and transient behavior of linear circuits and progresses to sinusoidal steady state analysis using the phasor method. Computers are introduced as an aid to analysis and design of circuits via the use of circuit simulation software. Prerequisites: Mathematics 162. Corequisite: Electrical Engineering 251. *Fall semester only, three hours.*

ELEE 202. LINEAR CIRCUITS II. Continued study in techniques for analyzing and designing circuits composed of linear elements, including the Laplace Transform, convolution, and Fourier analysis methods. Applications of linear circuits to electric power systems and frequency selective

systems are examined. Computers are used as an aid to analysis and design via the use of circuit simulation software. Electrical Engineering 202 is designed to fulfill the requirements for the Information Literacy (IL) instruction in the Electrical and Computer Engineering curriculum. Prerequisites: Electrical Engineering 201. *Spring semester only, three hours.*

ELEE 204. DIGITAL LOGIC DESIGN. An introduction to digital circuit analysis and design methods. Combinational circuit topics include the use of Boolean algebra, map minimization methods, and circuit implementation with logic gates and standard integrated circuits. Sequential circuit design is explored, and implementation with flip-flops and standard integrated circuits is investigated. Programmable logic implementation of both combinational and sequential circuits is introduced. A group design project is required. Corequisite: Electrical Engineering 252.

Spring semester only, three hours.

ELEE 210. ELECTRICAL ENGINEERING. A survey for non-electrical engineering majors covering the basic principles of circuit analysis, electronics, instrumentation, and electromechanical energy conversion, with computer applications. Prerequisites: Mathematics 162, Physics 102, and Mechanical Engineering 120 or Computer Science 141. *Spring semester only, three hours.*

ELEE 251. LINEAR CIRCUITS LABORATORY. A laboratory course intended to acquaint the student with basic techniques of instrumentation, measurement, design, and troubleshooting for linear analog circuits. Laboratory investigation of basic Electrical Engineering concepts is integrated with design and implementation of practical circuits to meet specifications. Electrical Engineering 251 is designed to fulfill the requirements for the Information Literacy (IL) instruction in the Electrical and Computer Engineering curriculum. Corequisite: Electrical Engineering 201.

Fall semester only, one hour.

ELEE 252. DIGITAL CIRCUITS LABORATORY. A laboratory course intended to acquaint the student with hardware and software tools used for the design and implementation of digital circuits. A variety of digital design techniques are investigated, including gate-level circuits, programmable FPGA devices, and hardware definition languages (VHDL). CAD software, a hardware target system, and lab equipment are used to design, simulate, program, and verify the operation of digital circuits. Computers are used to design and simulate circuits and to program digital devices to implement those designs. Corequisite: Electrical Engineering 204.

Spring semester only, one hour.

ELEE 260. INDEPENDENT STUDY. Individual study of specialized topics in electrical engineering. Sophomore standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

ELEE 270. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in electrical engineering. Sophomore standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

ELEE 301. ELECTRONICS I. A study of semiconductor device characteristics, diodes, bipolar junction transistors (BJTs), field-effect transistors (FETs), BJT and FET amplifier circuits, bias stability, and DC power supplies. Prerequisites: Electrical Engineering 201 and Mathematics 262. Corequisite: Electrical Engineering 351.

Fall semester only, three hours.

ELEE 302. ELECTRONICS II. A study of the frequency response characteristics of transistor amplifiers, integrated-circuit operational amplifiers, fundamentals of feedback and stability, oscillators, active filters, quasi-linear circuits, pulsed waveforms and timing circuits. Prerequisite: Electrical Engineering 301. Corequisites: Electrical Engineering 303 and 352.

Spring semester only, three hours.

ELEE 303. ELECTRICAL MACHINES. Theories of transformers, DC machines, induction motors, synchronous motors and generators, stepping motors, and single-phase motors are developed and applications are explored. Prerequisite: Electrical Engineering 202. Corequisites: Electrical Engineering 302 and 352.

Fall semester only, three hours.

ELEE 304. ELECTROMAGNETIC THEORY. Fundamentals of electromagnetic theory, including static electric fields; dielectrics; energy and forces in the electric field; magnetic fields in free space and in magnetic materials; time-varying fields; and Maxwell's equations with applications. Computer techniques are used to solve a problem involving Laplace's Equation. Prerequisite: Mathematics 262.
Spring semester only, three hours.

ELEE 306. DESIGN OF DIGITAL SYSTEMS. A study of semiconductor devices and their use in digital integrated circuits. Characteristics of semiconductor devices will be explored followed by an investigation of their application to the design of digital logic circuits and systems. Prerequisite: Electrical Engineering 204.
Semester course, three hours.

ELEE 310. MICROCONTROLLERS WITH ROBOTIC APPLICATIONS. An introduction to the skills required to design and program systems that incorporate embedded microprocessors or microcontrollers. Topics include microprocessor circuitry and architecture, programming using assembly and higher-level languages, and interfacing the microprocessor with external devices. Three lectures and one lab per week. Prerequisites: Electrical Engineering 201 or 210, and Electrical Engineering 204.
Spring semester only, three hours.

ELEE 321. SIGNAL ANALYSIS. The mathematical representation of continuous and discrete systems including Fourier Series and transforms; Laplace transforms; z-transforms; continuous and discrete convolution; and digital computer techniques such as FFT's and digital filtering. Prerequisite: Electrical Engineering 201. Corequisite: Mathematics 262.
Semester course, three hours.

ELEE 351. INTERMEDIATE LABORATORY I. A hands-on experience in the use of electronic devices including discrete active and passive components and sub-assemblies; test equipment; and instrumentation. Assignments are oriented toward the analysis and design of analog electronic circuits and systems. Computer software is used for circuit simulation and analysis. Familiarization with the technical resources available in the library is also provided. Electrical Engineering 351 is designed to fulfill the requirements for the Information Literacy (IL) instruction in the Electrical and Computer Engineering curriculum. Corequisite: Electrical Engineering 301.
Fall semester only, one hour.

ELEE 352. INTERMEDIATE LABORATORY II. A hands-on experience in the use of electronic and electrical devices including transformers, motors, and generators as well as discrete active and passive components, test equipment, and instrumentation. Assignments are oriented toward the analysis and design of analog electronic circuits, networks, and electrical machines. Computer software is used for circuit simulation and analysis. Prerequisite: Electrical Engineering 301 and 351. Corequisites: Electrical Engineering 302 and 303.
Spring semester only, one hour.

ELEE 360. INDEPENDENT STUDY. Individual study of specialized topics in electrical engineering. Junior standing, permission of the department chair, and a faculty sponsor are required.
Semester course, one, two or three hours.

ELEE 370. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in electrical engineering. Junior standing, permission of the department chair, and a faculty sponsor are required.
Semester course, one, two or three hours.

ELEE 390. SPECIAL TOPICS IN ELECTRICAL ENGINEERING. Special topics, based on student demand and faculty interest, in the areas of new electrical engineering development. Specific subject matter varies each semester. Prerequisites and credit hours announced in advance of registration.
Semester course, one, two, three, or four hours.

ELEE 401. ELECTRICAL/COMPUTER ENGINEERING DESIGN. A study of the principles and methods of designing electrical/computer engineering systems in today's society. The early stages of the design process are emphasized, including identifying needs, requirements specification, planning and evaluating design alternatives. Engineering ethics, including intellectual property, are a significant focus. The senior design project is initiated, defined and documented. Extensive technical writing and oral presentation skills are employed. Electrical Engineering 401 is designed to fulfill the

requirements for the Writing Intensive (WI) and the Speaking Intensive (SI) instruction in the Electrical and Computer Engineering curriculum. Prerequisite: Senior standing in electrical engineering (either electrical or computer concentration). *Fall semester only, three hours.*

ELEE 404. ELECTROMAGNETIC ENERGY TRANSMISSION. The analysis of the transmission of electromagnetic energy including radiation in free space and in various media, guided waves in transmission lines, and antennas. Each student completes an antenna design project as part of this course. Prerequisite: Electrical Engineering 304. *Semester course, three hours.*

ELEE 421. CONTROL THEORY. Fundamental theory and applications of feedback control systems using both Laplace Transform and state-space techniques. Topics include modeling of mechanical and electrical systems, transient response, steady-state error, subsystem reduction, stability, and root locus. Computer simulation and hands-on projects included. Prerequisite: Electrical Engineering 321. *Fall semester only, three hours.*

ELEE 422. DESIGN OF CONTROL SYSTEMS. Analysis and design of feedback control systems in both analog and digital form. Topics include root locus, frequency response, state space controllers and observers, and digital control system design utilizing z-transforms. Computer simulation and hands-on projects included. Prerequisites: Electrical Engineering 421. *Spring semester only, three hours.*

ELEE 431. COMMUNICATION SYSTEMS I. Analysis and design of digital and analog communication systems. An investigation of the techniques for improving system performance in transmitting voice, video, and data, over both noisy wired and wireless channels. A variety of techniques are investigated, including modulation, channel coding, equalization, and detection. Students are required to simulate the design using MATLAB. Matlab/Simulink simulations. Prerequisites: Electrical Engineering 321. *Fall semester only, three hours.*

ELEE 432. COMMUNICATION SYSTEMS II. An advanced study of the communication systems applications. Applications include satellite, cellular, digital television & radio, fiber-optic, and wired & wireless data networks. System performance will be investigated using the link budget. Selected topics in leading-edge technologies are explored such as software-defined radio and software communication architecture. Prerequisites: Electrical Engineering 431. *Spring semester only, three hours.*

ELEE 441. COMPUTER ARCHITECTURE. An advanced study of Central Processing Unit (CPU) organization and architecture. The Instruction Set Architecture (ISA) and Instruction Level Parallelism (ILP) are emphasized. The organization and importance of the memory hierarchy, particularly cache memory, are introduced. Modern CPU architectures, such as the Intel IA-32 architecture, are used as practical examples of theoretical concepts. A design project is required. Prerequisite: Electrical Engineering 204. *Semester course, three hours.*

ELEE 442. PARALLEL COMPUTER ARCHITECTURE. An advanced study of multiprocessor architectures. Different approaches to memory, interconnection network and CPU design are explored. The nature and limitations of massively parallel applications are explored. Design of large-scale storage systems is introduced. Selected topics in leading-edge computer system design are explored, such as quantum computing or wireless sensor networks. Students are required to research selected topics in the academic literature. Corequisite: Electrical Engineering 441. *Spring semester only, three hours.*

ELEE 451. CAPSTONE DESIGN PROJECT I. An advanced lab course where students learn techniques and engage in experiments relating to their senior group design project. Written reports and oral presentations are required. Prerequisite: Senior standing in engineering or permission of the instructor. *Fall semester only, one hour.*

ELEE 452. CAPSTONE DESIGN PROJECT II. An advanced lab course requiring student teams to complete their group design project. Written reports and oral presentations are required. Electrical Engineering is designed to fulfill the requirements for a Speaking Intensive (SI) instruction in the

Electrical and Computer Engineering curriculum. Prerequisite: Senior standing in engineering and one of Electrical Engineering, Mechanical Engineering, or Robotics 451.

Spring semester only, three hours.

ELEE 460. INDEPENDENT STUDY. Individual study of specialized topics in electrical engineering. Senior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

ELEE 470. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in electrical engineering. Senior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

ROBOTICS (ROBO)

ROBO 301. INTRODUCTION TO ROBOTICS. Presents the fundamentals of robot mechanisms, kinematics, dynamics, and controls. Topics include forward and inverse kinematics, differential motion and velocities, dynamics and force control, path and trajectory planning, actuators and drive systems, and sensors used in robotic systems. The basics of robotic control systems are briefly presented. The use of vision systems in robotics is introduced. Two lectures and one lab per week. Prerequisite: Electrical Engineering 321 or Mechanical Engineering 316.

Fall semester only, three hours.

ROBO 302. MOBILE ROBOTS. An introduction to the basic principles of mobile robots, including mechanical, sensory, and cognitive systems necessary for successful operation. Topics will include hardware, locomotion, sensors, control schemes, localization, and navigation. Hands-on lab experiences with real robots and a final project supplement lecture material. Two lectures and one lab per week. Prerequisites: Physics 101; Mathematics 261; and Engineering 274 or Mathematics 214.

Spring semester only, three hours.

ROBO 451. CAPSTONE DESIGN PROJECT I. An advanced lab course where students learn techniques and engage in experiments relating to their senior group design project. Written reports and oral presentations are required. Prerequisite: Senior standing in engineering or permission of the instructor.

Fall semester only, one hour.

ROBO 452. CAPSTONE DESIGN PROJECT II. An advanced lab course requiring student teams to complete their group design project. Written reports and oral presentations are required. Robotics 452 is designed to fulfill the requirements for the Speaking Intensive (SI) course in the Electrical and Computer Engineering or Mechanical Engineering major. Prerequisite: Senior standing in engineering and one of Electrical Engineering, Mechanical Engineering, or Robotics 451.

Spring semester only, three hours.

DEPARTMENT OF ENGLISH

Dr. Messer, Chair; Mrs. Craig, Dr. Harvey, Dr. Hogsette, Dr. Loretto, Dr. Mayo, Dr. Moore, Dr. E. Potter, Dr. Waha. Adjunct: Dr. Barbour. Additional Instructional Faculty: Mrs. K. Anderson, Mrs. Marsch, Mrs. Philson.

The Department of English sets high standards for its students in the development of composition and research skills necessary for writing clear, well-supported research papers in MLA format for each literature course in the program. To this end, all freshman English majors take English 201: English Literature Survey and Literary Studies I as the foundational Writing Intensive (WI) and Information Literacy (IL) course in the major. Oral communication skills are essential to success in graduate school as well as in careers related to English, and English 351 or 352: Shakespeare serves as the required Speaking Intensive (SI) course in the department.

Course Requirements for a Bachelor of Arts Degree in English (ENGL)—39 hours**English Core Requirements (24 hours):**

English 201, 202, 203, 204, 302, 485; English 205, 206, or 250; and English 351 or 352.

English Period Electives (6 hours):

Choose six hours from English 304, 306, 308, 312, 314, 318, 320, or 325. Note: only one of ENGL 320 or 325 can be counted toward these six hours.

English Genre/Tradition Electives (9 hours):

Choose nine hours from English 221, 222, 224, 226, 242, 243, 245, 246, 252, 254, 261, 262, 324, 327, or 356.

Courses that count in the ENGL major quality point average (MQPA):

All courses with “ENGL” prefix. A minimum MQPA of 2.00 is required to graduate.

Course Requirements for a Bachelor of Arts Degree in English and Secondary Education Certification (ESED)—85 hours**Core Requirements (30 hours):**

English 201, 202, 203, 204, 302, 402, 485; English 205, 206, or 250; English 351 or 352; and Writing 271 or 281.

English Electives (6 hours):

Choose two additional ENGL prefix courses; at least one of which must be 300-level or higher.

Education Core (49 hours):

Communication Studies 104; Education 202, 203, 204, 305, 308, 326, 330, 371, 431, 488; Psychology 102; and Special Education 101.

Course Requirements for a Bachelor of Arts Degree in English and Communication Secondary Education Certification (ECED)—91 hours**Core Requirements (30 hours):**

English 201, 202, 203, 204, 302, 402, 485; English 205, 206, or 250; English 351 or 352; and Writing 271 or 281.

English Electives (6 hours):

Choose two additional ENGL prefix courses; at least one of which must be 300-level or higher.

Education Core (49 hours):

Communication Studies 104; Education 202, 203, 204, 305, 308, 326, 330, 371, 431, 488; Psychology 102; and Special Education 101.

Communication Core (6 hours):

Choose six (6) hours from any *one* of the following three areas:

Speech: Communication Studies 109 (one credit course must be taken three times), 207, 303; Theatre 251 or 255.

Media: Communication Studies 110, 135, 222, 235, or 378.

Theatre*: Theatre 251, 259 (one credit course must be taken three times), 261, 262, 320; or English 252.

**Students who elect the “Theatre” option must take English 250 as one of their English elective courses.*

Advanced Placement credits in English do not count toward English major requirements. They do, however, count as elective credits toward graduation.

SUPPORTING ACTIVITIES

The Department of English offers students significant co-curricular activities, including:

- A highly acclaimed theatre program, including two main stage productions and numerous student productions during the academic year.
- Lambda Iota Tau (LIT), the literary honor society on campus, sponsors special speakers and poetry readings.
- Tau Alpha Pi (TAP), the theatre honorary, sponsors a One-Act Play Festival each semester.
- Involvement with the campus newspaper (*The Collegian*), radio station (WSAJ), literary magazines (*The Echo* and *The Quad*), yearbook (*The Bridge*), or the College's public relations offices.
- Internships, whereby students earn academic credit for work done in conjunction with a professional organization related to English. See the course description for English 480.

Course Requirements for a minor in Creative Writing (21 hours)

A minor in Creative Writing will consist of Writing 315 or an approved Writing 390 course; Writing 305 or 310; four courses from Writing 271, 281, 359, 382, 383, or 384; and one genre literature course from English 230, 242, 243, 245, 246, 250, 252, 261, or 262.

Course Requirements for a minor in English (18 hours)

A minor in English will consist of any six three-credit ENGL literature courses.

Course Requirements for a minor in Musical Theatre (24 hours)

A minor in Musical Theatre will consist Theatre 251, 259 (taken two times), 261; Music 103, 105, 161 (taken three times); Physical Education 211, 213, 290 Jazz & Tap; and six hours from Theatre 262, 320, 351, Music 222, or Music/Theatre 210.

Course Requirements for a minor in Theatre (24 hours)

This minor is open to all students with a love for theatre and an interest in supplementing their academic major with a program that will develop appreciation of dramatic literature and skills in the various arts and crafts of the theatre. Twenty-four hours are required, including:

Theatre Core (12 hours):

English 250; Theatre 251, 261, and 259 (taken three times).

Elective options (12 hours) Choose twelve hours from the following:

English 252, 302, 351, or 352; Theatre 255, 262, 320, 351 or 384. English or Theatre 260, 290, 360, 390, 460 or 480 courses may also count as elective options but must be pre-approved by the department chair and must relate directly to theatre studies.

Course Requirements for a minor in Writing (21 hours)

A minor in Writing will consist of Writing 305* or 310; Writing 315; one 300-level Writing course (excluding 305 and 310) or a Writing or Communication Studies internship; and twelve hours choosing from two writing track options:

1. Professional Writing Track: Four courses from Communication Studies 135, 235, 300, 378, Writing 271, and Entrepreneurship or Marketing 328.
2. Technical Writing Track: Three courses from Design 101, 210, and Communication Studies 378; and one course from Computer Science 141, 155,

205, and Electrical Engineering 204. *Note: Writing 305 must be completed by students pursuing the Technical Writing Track.

Course Requirements for a concentration in Business Writing (15 hours)

A concentration in Business Writing will consist of Writing 310, 315; Entrepreneurship or Marketing 328; and two courses to be selected from Accounting 303, Entrepreneurship or Management 303, Entrepreneurship 467, Marketing 204, 315, and Management 214.

Course Requirements for a concentration in Creative Writing (15 hours)

A concentration in Creative Writing will consist of Writing 315; Writing 271; and three courses to be selected from Writing 271, 382, 383, Theatre 384, and Communication Studies 359.

Course Requirements for a concentration in Professional Writing (15 hours)

A concentration in Professional Writing will consist of Writing 305 or 310; Writing 315; Communication Studies 135 or 235; Communication Studies 300; and Entrepreneurship 328 or Marketing 328.

Course Requirements for a concentration in Science Writing and Reporting (16-17 hours)

A concentration in Science Writing and Reporting will consist of Writing 305, 315; Communication Studies 135 or 235; and two courses to be selected from Biology 101, 102, Chemistry 101, 102, 105, Computer Science 155, Physics 101, 102, 121, 122, and Psychology 204.

Course Requirements for a concentration in Technical Writing (15-16 hours)

A concentration in Technical Writing will consist of Writing 305, 315; Design 101, 210; and one course to be selected from Astronomy 206, 207, Biology 101, Chemistry 101, 105; Computer Science 141, 155, 205, Electrical Engineering 204, Physics 101, and 121.

Students are expected to contact their advisors for a detailed schedule of courses recommended to meet requirements for a major.

ENGLISH (ENGL)

ENGL 201. ENGLISH LITERATURE SURVEY AND LITERARY STUDIES I. The first semester of the two-semester survey of English literature focuses on the major authors and representative works of each period from the early Middle Ages (*Beowulf*) to the 18th century. It also introduces students to major interpretive/critical schools of thought, as well as such foundational literary practices as close reading, analysis, and scansion. This course also fulfills the Writing Intensive (WI) and Information Literacy (IL) requirements for the English major. As such, it is the foundational course for the English major and should be taken in the first semester of the program.

Fall semester only, three hours.

ENGL 202. ENGLISH LITERATURE SURVEY AND LITERARY STUDIES II. Elaborating upon the content, practices, and interpretive modes introduced in English 201, the second semester of the two-semester survey of English literature focuses on the major authors and representative works of each period from the late 18th century to the modern era. Prerequisite: English 201.

Spring semester only, three hours.

ENGL 203. AMERICAN LITERATURE SURVEY I. The first semester of the two-semester survey of American literature focuses on representative works from the time of the discovery of America to the Civil War. Attention is concentrated on major writers and their works in each period with some

consideration given to all genres except drama. English majors are strongly encouraged to take 203 before 204. *Fall semester only, three hours.*

ENGL 204. AMERICAN LITERATURE SURVEY II. The second semester of the two-semester survey of American literature focuses on representative works from post-Civil War to the late 20th century. Attention is concentrated on major writers and their works in each period with some consideration given to all genres except drama. Non-English majors may enroll in 204 without having taken 203, but English majors are strongly encouraged to take 203 before 204.

Spring semester only, three hours.

ENGL 205. WORLD LITERATURE SURVEY: ASIA. A survey of representative authors and works of Asia, with a special focus on the literature of China, India, and Japan. The 205-206 survey is designed to include works of cultures and regions not covered by the English and American literature surveys or the classical and European literature in the required Humanities 202: Civilization & Literature. Students may take either or both courses, in either sequence.

Fall semester only, three hours.

ENGL 206. WORLD LITERATURE SURVEY: AFRICA AND LATIN AMERICA. A survey of representative authors and literary works of Africa and Latin America, including the Caribbean. The 205-206 survey is designed to include works of cultures and regions not covered by the English and American literature surveys or the classical and European literature in the required Humanities 202: Civilization & Literature. Students may take either or both courses, in either sequence.

Spring semester only, three hours.

ENGL 221. SCIENCE FICTION. This course introduces students to the many ways science fiction engages a range of cultural and social issues, such as the nature of science and scientific exploration, science and ethics, scientific dystopia, technological apocalypse, relationships between faith and science, cybernetics and human identity, transhumanism, medical ethics, and nanotechnology.

Alternate years, semester course, three hours.

ENGL 222. FANTASY LITERATURE. This course is designed to introduce students to the major features that characterize fantasy as a literary genre. Students will read 16-18 fantasy novels, including authors such as C. S. Lewis, J. R. R. Tolkien, Madeleine L'Engle, Ursula LeGuin, and J. K. Rowling. Class time will be spent analyzing these novels and critiquing them as works of literature.

Alternate years, spring semester only, three hours.

ENGL 224. ARTHURIAN LITERATURE. This survey course follows King Arthur across the centuries and literary genres from his seminal appearances in medieval histories and literature to latter interpretations – Victorian, Modernist, Inkling, and post-modernist in English and American prose fiction, film, and poetry. Authors include, but are not limited to, Chretien de Troyes, Thomas Malory, Tennyson, Twain, Eliot, C.S. Lewis, Charles Williams, the Wizard Tim, and Malamud.

Alternate years, semester course, three hours.

ENGL 226. GOTHIC LITERATURE. This course is a historical survey of Gothic literature from the eighteenth to the twentieth century, focusing mainly on literary Gothicism of Europe and America. The course also explores how films and other literary genres have appropriated Gothic elements in the twentieth and twenty-first centuries.

Alternate years, semester course, three hours.

ENGL 242. 19th CENTURY ENGLISH NOVEL. A study of major works by authors from the great age of the English novel, including Austen, the Brontes, Dickens, Eliot, Hardy, Conrad, and Wilde. Prerequisite English 202 or by permission.

Alternate years, fall semester only, three hours.

ENGL 243. 20th CENTURY ENGLISH NOVEL. A study of the themes and technical developments which emerge in the novels of such authors as Woolf, Forster, Joyce, Waugh, Greene, and selected contemporary authors. Prerequisite English 202 or by permission.

Alternate years, spring semester only, three hours.

ENGL 245. 19th CENTURY AMERICAN NOVEL. This course explores the romances of Hawthorne and Melville; the realism of Mark Twain, Henry James, and Chopin; and the naturalism of Dreiser, along with works by other key writers. Prerequisite: English 203 and 204 or by permission.
Alternate years, fall semester only, three hours.

ENGL 246. 20th CENTURY AMERICAN NOVEL. This course gives students experience with the long fiction of such writers as Cather, Hemingway, Faulkner, Fitzgerald, Ellison, Morrison, Percy, and others. Prerequisite: English 204 or by permission. *Alternate years, spring semester only, three hours.*

ENGL 250. WORLD DRAMA. An introduction to the great playwrights and representative plays of world drama from the Greeks to the present. Students study elements of plot, characterization, and idea in each of the plays studied. The course also focuses on the theatrical and historical context of each play and playwright.
Fall semester only, three hours.

ENGL 252. MODERN DRAMA. A study of major plays and playwrights of the late nineteenth and twentieth centuries, including Ibsen, Chekhov, Shaw, O'Neill, Beckett, Stoppard, and recent American and British playwrights.
Alternate years, spring semester only, three hours.

ENGL 254. PAGE TO STAGE. Students will travel to a major theatre venue such as New York City (Broadway and Off-Broadway shows); Niagara-on-the-Lake, Canada (Shaw Festival); Staunton, VA (American Shakespeare Center); Stratford, Canada (Stratford Festival); or various other global cities that have large theatre centers. Students will read and be quizzed on selected plays prior to travel. While there, students will attend three to five plays, attend daily post-play discussion sessions and workshops, and keep a guided response journal. Upon their return, students will submit a four to five page paper as their final exam. Cost of the trip will vary depending on location.
Travel course, offered periodically, one to three hours.

ENGL 260. INDEPENDENT STUDY. Individual study of specialized topics in English. Sophomore standing, permission of the department chair, and a faculty sponsor are required.
Semester course, one, two or three hours.

ENGL 261. POETRY. This course explores a wide range of traditional and contemporary poetry; gives insight into ways poets use imagery, rhyme, meter, persona, and sound qualities to create meaning in poetry; provides experience with prosody and offers in-depth experience with the work of selected poets.
Fall semester only, three hours.

ENGL 262. MODERN POETRY. This course provides a more intensive examination of the poets and poetry of the 20th century. Students will examine the most significant movements in poetry of this period, including Modernism in the first half of the century and post-modern experiments of recent decades.
Alternate years, spring semester only, three hours.

ENGL 270. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in English. Sophomore standing, permission of the department chair, and a faculty sponsor are required.
Semester course, one, two or three hours.

ENGL 290. STUDIES IN LITERATURE. Subject matter varies each semester, to allow an in-depth study of authors and works of literature not covered in as much detail in other courses.
Semester course, three hours.

ENGL 302. CLASSICAL LITERATURE IN TRANSLATION. A study of the major works of ancient and medieval Greek, Roman, Latin, and Italian literature from Homer to Dante, with particular emphasis on epic and tragedy. The influence of classical literature on later Western literature will also be considered.
Semester course, three hours.

ENGL 304. CHAUCER AND THE MIDDLE AGES. An introduction to the literature and art of the Middle Ages, from *Beowulf*, through *Sir Gawain and the Green Knight* and *The Canterbury Tales*, to the religious drama of the later Middle Ages. Prerequisite: English 201.

Alternate years, semester course, three hours.

ENGL 306. ENGLISH RENAISSANCE: SPENSER TO MILTON. A survey of major English writers of the sixteenth and seventeenth centuries from Spenser, Donne, and Jonson to John Milton. Prerequisite: English 201 or by permission.

Alternate years, semester course, three hours.

ENGL 308. RESTORATION AND 18th CENTURY LITERATURE. An introduction to the works of principle authors from 1660 to 1750 such as Dryden, Pope, Swift, and Johnson. The simultaneous codification of rules and outbreak of the Romantic temper will be traced. Prerequisite: English 201.

Alternate years, semester course, three hours.

ENGL 312. ROMANTIC LITERATURE. An intensive examination of the poetry of the six major English Romantic poets of the early nineteenth century: Blake, Wordsworth, Coleridge, Byron, Shelley, and Keats. Students also read major critical prose by and about these poets. Prerequisite: English 202 or by permission.

Alternate years, semester course, three hours.

ENGL 314. VICTORIAN LITERATURE. A study of the major British writers of the period from 1837 to 1900, focusing particularly on Tennyson, Robert Browning, Christina Rossetti, Gerard Manley Hopkins, and Oscar Wilde. Prerequisite: English 202.

Alternate years, semester course, three hours.

ENGL 318. AMERICAN RENAISSANCE. An opportunity for students to explore an unusually productive phase in the history of ideas in America through literature of outstanding quality including works of Emerson, Thoreau, Hawthorne, Melville, and Whitman. The dynamics of interaction among members of that group will be studied. Prerequisite: English 203 or by permission.

Alternate years, semester course, three hours.

ENGL 320. SOUTHERN LITERATURE. With significant emphasis on the works of William Faulkner, this course explores the great flowering of literature in the American South in the twentieth century. Such writers as Robert Penn Warren, Richard Wright, Eudora Welty, Flannery O'Connor, and Walker Percy are also considered, especially as they seek to move beyond the "aesthetic of memory" that characterizes Faulkner's novels.

Offered periodically, semester course, three hours.

ENGL 324. EUROPEAN LITERATURE. A study of European fiction in translation, with major emphasis on the novel, highlighting the work of writers such as Flaubert, Tolstoy, Dostoevsky, and Mann.

Alternate years, semester course, three hours.

ENGL 325. CONTEMPORARY LITERATURE. A study of American, European and world literature of the last three decades, with particular emphasis on Nobel and other award-winning authors.

Alternate years, semester course, three hours.

ENGL 327. CHRISTIAN WRITERS. This course acquaints students with a wide variety of writers from the early twentieth century to the present whose works express and engage Christianity in significant ways. It examines the question of how Christians faithfully practice the discipline of reading and writing and offers students opportunities to develop their own creative and devotional practices. Operating on the premise that there is a place for many kinds of literary genius in the kingdom of God, this course challenges students intellectually and encourages them spiritually.

Alternate years, semester course, three hours.

ENGL 351. SHAKESPEARE I. One of two courses which together examine 20 of the 37 plays of William Shakespeare. Each semester begins with a study of the sonnets and then focuses on ten of the major plays, selected from the comedies, histories, tragedies and romances. Class discussion is supplemented with a required lab session for the viewing and discussion of performances of the plays under study. Either Shakespeare course will satisfy the Speaking Intensive (SI) requirements for the English major. Plays for the fall semester usually include: *Richard III*, *Taming of the Shrew*, *Merchant*

of *Venice*, *A Midsummer Night's Dream*, *Romeo and Juliet*, *Much Ado About Nothing*, *Henry V*, *Julius Caesar*, *Othello*, and *The Winter's Tale*. Students may take either or both courses, in either sequence. Prerequisite: English 202 or by permission. *Fall semester only, three hours.*

ENGL 352. SHAKESPEARE II. One of two courses which together examine 20 of the 37 plays of William Shakespeare. Each semester begins with a study of the sonnets and then focuses on ten of the major plays, selected from the comedies, histories, tragedies and romances. Class discussion is supplemented with a required lab session for the viewing and discussion of performances of the plays under study. Either Shakespeare course will satisfy the Speaking Intensive (SI) requirements for the English major. Plays for the spring semester usually include: *As You Like It*, *Twelfth Night*, *Richard II*, *1 Henry IV*, *Measure for Measure*, *Hamlet*, *Macbeth*, *King Lear*, *Cymbeline* and *The Tempest*. Students may take either or both courses, in either sequence. Prerequisite: English 202 or by permission. *Spring semester only, three hours.*

ENGL 356. LITERARY THEORY. A detailed examination of the major literary critics and theorists of Western civilization. Part one is devoted to key figures of the Classical tradition; Part two uses basic tenets of that tradition to engage and critique the "new wave" of 20th and 21st century critical theory. The class employs a seminar format; students lead discussion on a rotating basis and are expected to contribute significantly to every discussion. This course is strongly recommended for all students considering graduate study in English. Prerequisites: English 201, 202, 203, and 204, junior or senior English major; or by permission. *Spring semester only, three hours.*

ENGL 360. INDEPENDENT STUDY. An opportunity for students with extensive background in literature to do intensive independent study or research on specialized topics. Junior standing in the English Department, permission of the department chair, and a faculty sponsor are required. Application deadline: end of the semester preceding the proposed study. *Semester course, one, two or three hours.*

ENGL 370. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in English. Junior standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

ENGL 390. STUDIES IN LITERATURE. Subject matter varies each semester, to allow an in-depth study of authors and works of literature not covered in as much detail in other courses. *Semester course, three hours.*

ENGL 402. GRAMMAR AND HISTORY OF ENGLISH. Required of English majors seeking secondary certification in English, this course offers an introduction to the history of the English language, a review of traditional grammar, and presentation of a working knowledge of modern grammar. *Semester course, three hours.*

ENGL 460. INDEPENDENT STUDY. An opportunity for students with extensive background in literature to do intensive independent study or research on specialized topics. Senior standing in the English Department, permission of the department chair, and a faculty sponsor are required. Application deadline: end of the semester preceding the proposed study. *Semester course, one, two or three hours.*

ENGL 470. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in English. Senior standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

ENGL 480. INTERNSHIP IN ENGLISH. Students majoring in English may, with prior consent of the department, earn academic credit for work done (normally off campus) under the direct supervision of a professional in an English-related field. This includes but is not limited to such fields as publishing, library science, journalism, technical writing, and script writing. Students must keep a daily log of activities and submit an academic paper summarizing the experience. A maximum of six credits of internship may apply toward graduation. *Semester course, one to six hours.*

ENGL 485. SENIOR CAPSTONE. As a culminating experience for senior English majors, this seminar-style course provides students an opportunity to reflect on their college literary studies; to deepen their understanding of literature, its role in the pursuit of truth, and its place in their lives, especially as Christians; and to apply what they have learned as majors in completing a substantial project. This project will focus on a significant work, author, or literary topic and should reflect thorough research, thoughtful analysis, and clear communication. The course subject matter varies each semester to reflect the interests and expertise of the professor. Prerequisite: Senior status in the English program.
Semester course, three hours.

ENGL 499. HONORS IN ENGLISH. Seniors who have shown special aptitude in literature may, with consent of the department, undertake this course on an individual basis. The format is similar to that of the independent study, but students must also submit their papers to the entire English faculty and provide an oral presentation and defense of their research.
Semester course, one, two or three hours.

THEATRE (THEA)

THEA 210. INTRODUCTION TO MUSICAL THEATRE. This class is a survey of the development of musical theatre as a performing art form in America from 1750 to the present. By looking at musical theatre from multiple perspectives - historical, cultural, political, social, aesthetic - the class will explore the ways in which musicals both reflect and embody values and trends of the cultural landscape in which they were written. Included will be practical study of the format of the libretto and musical score in relationship to the major musical theatre genre. Students may only receive credit for one of Theatre 210 or Music 210.
Semester course, three hours.

THEA 251. ACTING. Practice in preparing a dramatic role for performance. Exercises will focus on freeing the actor's voice and body for maximum expressiveness. Students will prepare and perform monologues, short scenes, and a single extended scene.
Fall semester only, three hours.

THEA 255. ORAL INTERPRETATION OF LITERATURE. Study and practice of the techniques of reading literature aloud to enhance audience appreciation and enjoyment. Oral readings are given in the areas of fiction, poetry and drama. Each student also prepares and performs a final ten-minute recital.
Fall semester only, three hours.

THEA 259. THEATRE PRACTICUM. Students may receive one credit for a minimum of 40 hours of supervised technical theatre work directly related to a main-stage theatre production. Students must keep an ongoing record of the dates and times of their work, and the student's supervisor must sign each entry. These records are due by Study Day of the semester enrolled. This course is repeatable, but no more than three hours may count toward the Theatre minor. It will count as a general elective if taken more than three times.
Semester course, one hour.

THEA 260. INDEPENDENT STUDY. An opportunity for students with extensive background in theatre to do intensive independent study or research on specialized topics. Sophomore standing with declared Theatre minor, permission of the department chair, and a faculty sponsor are required. Application deadline: end of the semester preceding the proposed study.
Semester course, one, two or three hours.

THEA 261. STAGECRAFT. This course covers the technical work of set-design, lighting, sound design, and stage rigging as well as administrative/budgetary management of technical theater. A practical course taught both in the classroom and in hands-on settings. Students will be required to assist in various productions and live performances throughout the semester. Note: for safety reasons, no minors may enroll in this course, and students should be aware that some lifting and handling of power tools is required.
Semester course, three hours.

THEA 262. DESIGN FOR THE THEATRE. Focuses on the visual aspects of theatrical production, including set design, costume design, and lighting design. Through group and individual projects, students will work through the design process: analyzing the text, doing research, formulating a

production concept, and applying the elements of design to create a visual world for the actors to inhabit. They will also practice the skills necessary to communicate their ideas to both a director and technical crews: drawing, drafting, model building, and organizational paperwork.

Semester course, three hours.

THEA 270. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in theatre. Sophomore standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

THEA 290. STUDIES IN THEATRE. Subject matter varies each semester, to allow an in-depth study of aspects of theatre not covered in as much detail in other courses.

Semester course, three hours.

THEA 320. STAGE DIRECTION. Theories and techniques of directing plays for the stage. Principles of play analysis, blocking, characterization, and rhythm are studied. The student will direct laboratory scenes, prepare production scripts, do script analyzes, and produce an extended scene. Prerequisite: Theatre 251.

Fall semester only, three hours.

THEA 351. ADVANCED ACTING. Study and practice of advanced techniques of acting. Students will also focus on vocal production, movement, and elements of style related to the performance of plays from various periods of theatre history. Prerequisite: Theatre 251.

Semester course, three hours.

THEA 360. INDEPENDENT STUDY. An opportunity for students with extensive background in theatre to do intensive independent study or research on specialized topics. Junior standing with declared Theatre minor, permission of the department chair, and a faculty sponsor are required. Application deadline: end of the semester preceding the proposed study.

Semester course, one, two or three hours.

THEA 370. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in theatre. Junior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

THEA 384. PLAYWRITING. This course emphasizes the various aspects of writing an effective play. Topics include the processes of drafting and revision, analyses of literary style and technique, and methods of offering and accepting constructive criticism. Additionally, the collaborative nature of playwriting will be addressed; a play is not complete until the writer has involved others in the creative process. The student is expected to submit original manuscripts during the semester. Students may only receive credit for one of Theatre 384 or Writing 384.

Offered periodically, semester course, three hours.

THEA 390. STUDIES IN THEATRE. Subject matter varies each semester, to allow an in-depth study of aspects of theatre not covered in as much detail in other courses.

Semester course, three hours.

THEA 460. INDEPENDENT STUDY. An opportunity for students with extensive background in theatre to do intensive independent study or research on specialized topics. Senior standing with declared Theatre minor, permission of the department chair, and a faculty sponsor are required. Application deadline: end of the semester preceding the proposed study.

Semester course, one, two or three hours.

THEA 470. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in theatre. Senior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

THEA 480. INTERNSHIP IN THEATRE. Students pursuing a minor in Theatre may, with prior consent of the Department, earn academic credit for work done (normally off campus) under the direct supervision of a professional in a theatre-related field. Students must keep a daily log of activities and

submit an academic paper summarizing the experience. A maximum of six credits of internship may apply toward graduation. *Semester course, one to six hours.*

WRITING (WRIT)

WRIT 101. FOUNDATIONS OF ACADEMIC DISCOURSE. A course introducing students to the fundamentals of college composition. Topics include the writing process, rhetorical strategies, basics of critical reading and thinking, and key forms of writing such as informative, evaluative, argumentative, and synthesis. This course serves as a foundation to prepare students to succeed in other academic writing contexts. This course contains the Information Literacy (IL) requirement.

Semester course, three hours.

WRIT 260. INDEPENDENT STUDY. Individual study of a specialized topic(s) in writing. Sophomore standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

WRIT 270. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in writing. Sophomore standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

WRIT 271. CREATIVE WRITING. An exploration of the elements and techniques of writing short fiction and poetry. Informal lectures and discussions focus on student writing. Students may only receive credit for one of English 271 or Writing 271.

Semester course, three hours.

WRIT 281. CREATIVE NON-FICTION. An exploration of the elements and techniques of writing creative nonfiction, including such forms as personal essays, memoirs, travel writing, biography, literary journalism, book reviews, and lyric essays. Informal lectures and discussions focus on student writing. Students may only receive credit for one of English 281 or Writing 281.

Semester course, three hours.

WRIT 290. STUDIES IN WRITING. Subject matter varies each semester, to allow an in-depth study of writing concepts, issues, and practices not covered in as much detail in other courses.

Semester course, three hours.

WRIT 305. TECHNICAL COMMUNICATION. This course explores elements of clear and effective writing and oral expression appropriate for careers in the technical professions. Coursework will include case studies, job search materials, set of instructions, standard professional correspondence, examination of social media in professional settings, oral presentation with presentation software, and research into a technical field with the goal of communicating that field to non-experts. Prerequisite: Writing 101.

Semester course, three hours.

WRIT 310. BUSINESS COMMUNICATION. This course explores elements of clear and effective writing and oral expression for business-related professions. Coursework includes business communication case studies, job search materials, business correspondence (e-mail, memos, and letters), business proposals, business plans, oral presentations, social media in the business world, and formal business reports. Prerequisite: Writing 101.

Semester course, three hours.

WRIT 315. TECHNICAL AND PROFESSIONAL DOCUMENT DESIGN. This course explores principles, techniques, and procedures of electronic and print-based document production. Topics include the relationship between written and visual material; traditional copy preparation and design; desktop publishing; traditional printing techniques for books, brochures, pamphlets, and newsletters; and an introduction to electronic document design and production. Students will study key layout and design concepts and analyze examples. Student will produce their own documents, including newsletters, small and large advertisements, brochures, flyers, online journal or newspaper blog space, and a website entry page. Prerequisite: Writing 101.

Semester course, three hours.

WRIT 359. SCREENWRITING. This course is an introductory course for screenwriters. Topics of study will include character development, plot structure, storytelling techniques in film, as well as the narrative structure. Students will study films and screenplays as they learn to recognize various elements mentioned previously in feature films. Additionally, students will learn to craft their own stories for the screen. Students may only receive credit for one of Communication Studies 359 or Writing 359.
Spring semester only, three hours.

WRIT 360. INDEPENDENT STUDY. Individual study of a specialized topic(s) in writing. Junior standing, permission of the department chair, and a faculty sponsor are required.
Semester course, one, two or three hours.

WRIT 370. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in writing. Junior standing, permission of the department chair, and a faculty sponsor are required.
Semester course, one, two or three hours.

WRIT 382. POETRY WRITING. This course explores various forms and elements of lyric poetry and gives students the opportunity to develop their craftsmanship and poetic vision. In addition to producing their own poetry, students will analyze poems by published writers and fellow students, explore the literary marketplace, and read essays on poetics and on the role of the Christian artist. Prerequisite: Writing 101. Students may only receive credit for one of English 382 or Writing 382.
Offered periodically, semester course, three hours.

WRIT 383. STORY WRITING. This course explores various forms and elements of the short story and gives students the opportunity to develop their craftsmanship and narrative vision. In addition to producing their own stories, students will analyze stories by published writers and fellow students and read essays on fiction writing and on the role of the Christian artist. Prerequisite: Writing 101. Students may only receive credit for one of English 383 or Writing 383.
Offered periodically, semester course, three hours.

WRIT 384. PLAYWRITING. This course emphasizes the various aspects of writing an effective play. Topics include the processes of drafting and revision, analyses of literary style and technique, and methods of offering and accepting constructive criticism. Additionally, the collaborative nature of playwriting will be addressed; a play is not complete until the writer has involved others in the creative process. The student is expected to submit original manuscripts during the semester. Students may only receive credit for one of Theatre 384 or Writing 384.
Offered periodically, semester course, three hours.

WRIT 390. STUDIES IN WRITING. Subject matter varies each semester, to allow an in-depth study of writing concepts, issues, and practices not covered in as much detail in other courses.
Semester course, three hours.

WRIT 460. INDEPENDENT STUDY. Individual study of a specialized topic(s) in writing. Senior standing, permission of the department chair, and a faculty sponsor are required.
Semester course, one, two or three hours.

WRIT 470. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in writing. Senior standing, permission of the department chair, and a faculty sponsor are required.
Semester course, one, two or three hours.

WRIT 480. INTERNSHIP IN WRITING. This course offers practical experience in the field of writing. Prerequisite: Sophomore status or higher and permission of the department internship coordinator.
Semester course, one to six hours.

DEPARTMENT OF EXERCISE SCIENCE

Dr. Prins, Chair; Dr. Ault, Mr. Buxton, Dr. Chinn, Mr. DiDonato, Mr. Dreves, Mr. Fritz, Mrs. Fuss, Mr. Gibson, Mrs. Cramer, Mrs. Hunt, Ms. Jacobs, Mrs. Lamie, Mr. Lamie, Mr. Severson. Additional Instructional Faculty: Mr. Cook, Mrs. Dolan, Mr. Garvey, Mrs. Renninger.

POLICIES GOVERNING THE PHYSICAL EDUCATION PROGRAM

The Department of Exercise Science and Grove City College believe that a Christian liberal arts college should teach the "whole individual", giving careful attention to the development of psychomotor (physical development), cognitive (basic reasoning), and the affective (social, emotional and spiritual) behavioral goals of the student regardless of his/her major.

In an attempt to realize this philosophy, the Department of Exercise Science presents a balanced program that encompasses the many facets of exercise science. The specific objectives of the program are to develop a heightened awareness of personal fitness and wellness, to develop neuromuscular skills, to cultivate an interest in recreation, and to encourage desirable social and moral standards.

The required Fitness and Wellness courses for both men and women are designed to give each incoming student an awareness of personal fitness and wellness. The evaluation process for each student is comprised of written examinations, special projects, swimming evaluations, and work within elective exercise class offerings. The ultimate goal is to provide an opportunity for each student to develop personal responsibility for his/her own lifestyle.

All students are required to participate in the Grove City College Fitness and Wellness program by enrolling in Physical Education 101 (men) or Physical Education 111 (women) beginning in the first fall semester attended and Physical Education 102 (men) or Physical Education 112 (women) during the first spring semester attended. Fitness and Wellness is a full-year course spread across two semesters, and all students must complete both semesters. Each class meets twice per week, for one credit hour of coursework per semester. Upon completion of both semesters, a student may choose up to six additional hours of physical education courses with the "PHYE" prefix, but not more than one course per semester. Duplication of courses for credit is prohibited and the Department of Physical Education reserves the right to cancel any course based on insufficient enrollment.

Transfer students may receive partial or full credit for Fitness and Wellness based on a comparison of course syllabi. The Department Chair and Registrar will grant final approval for all transfer courses. All transfer students will begin the Fitness and Wellness class in the first semester they attend unless they have received credit for either Physical Education 101, 102, 111, or 112.

The program for upperclassmen is strictly on an elective basis with the major emphasis on lifetime carry-over activities. Offerings include: bowling; beginning, intermediate, and advanced dance; ballroom dancing; tennis; racquetball; volleyball; and water fitness.

A report of medical history and recent physical is required of all students at the time of their initial enrollment at Grove City College. This report remains on file at the Zerbe Health Center. Students identified with physical limitations will be placed in classes to meet their individual needs or given written assignments in place of physical activity.

Course Requirements for a Bachelor of Science Degree in Exercise Science (EXER) —81-82 hours

Exercise Science Core (58 hours):

Exercise Science 101, 203, 220, 230, 234, 235, 251, 253, 256, 258, 304, 306, 307, 309, 312, 377, 402 or 403, 404, 407, and 480.

Exercise Science Elective (3 hours):

One course from Exercise Science 215, 240, 242, 245, 254, or 257.

Aquatics Elective (2 hours):

One course from Exercise Science 210 or 223.

Major-Related Requirements (18-19 hours):

Biology 101; Chemistry 101; Mathematics 111 or 161; Physics 121; and Psychology 201.

Courses that count in the EXER major quality point average (MQPA):

All courses with “EXER” prefix. A minimum MQPA of 2.50 is required by the end of the sophomore year and maintained through graduation. Transfer students and students changing their major after freshman year will be evaluated after their second semester as an Exercise Science major. Students on academic probation will be evaluated after one semester and students below a 2.50 MQPA will be moved to the Undeclared (UNSE) major designation. Students with a MQPA below 2.50 will not be permitted to register for EXER 480.

The following courses provide instruction in locating, evaluating and presenting information related to the Exercise Science discipline: Exercise Science 377 Research Methods — Writing Intensive (WI) and Information Literacy (IL), and Exercise Science 307 Exercise Prescription— Speaking Intensive (SI)

Course Requirements for a concentration in Allied Health (18 hours)

Students majoring in Exercise Science can earn a concentration in Allied Health by completing 18 additional hours, including Biology 102; Chemistry 102; Physics 122; and six hours from Psychology 209, 211, or 312.

Course Requirements for a concentration in Pre-Physical Therapy (19 hours)

Students majoring in Exercise Science can earn a concentration in Pre-Physical Therapy by completing 19 additional hours, including Biology 102; Chemistry 102; Exercise Science 250; Physics 122; and six hours from Psychology 209, 211, or 312.

Course Requirements for a Minor in Exercise Science (9 hours of prerequisites, 19 hours of required courses)

The Exercise Science minor curriculum has the potential to enrich the academic preparation of students pursuing majors in Biology, Chemistry, Education, and even Business Program majors with entrepreneurial aspirations in commercial or community-based health, fitness, or athletics. The curriculum also provides an opportunity for students to expand on their experiences from Physical Education 102 or 112 Fitness and Wellness, in pursuit of health-related professions which require graduate studies, doctoral research and/or professional training.

Prerequisites (9 hours):

Physical Education 102 or 112; Biology 101; and Chemistry 101. All prerequisite courses must be completed before beginning any required course of the curriculum.

Required courses (19 hours):

Exercise Science 101, 234, 253, and 256; Exercise Science 251 or 305; Exercise Science 220 or 235; and Exercise Science 221 or 306. Biology 341 may be taken in the place of Exercise Science 253.

Course Requirements for a minor in Nutrition (15 hours)

A minor in Nutrition will consist of Exercise Science 234, 240, 244, 254, and 344.

Students are expected to contact their advisors for a detailed schedule of courses recommended to meet requirements for a major.

EXERCISE SCIENCE (EXER)

EXER 101. INTRODUCTION TO EXERCISE SCIENCE. This course introduces students to the field of Exercise Science, requirements for professional certification, graduate school requirements, and career options in both health fitness and clinical fields. Lecture topics will include the mission and vision of the American College of Sports Medicine (ACSM), the Commission on Accreditation for Exercise Science, and the Department of Physical Education and Athletics. Students will become familiar with the ACSM JTAs (Job Task Analysis) which will be covered across the Exercise Science curriculum. Students will begin to create individual portfolios to show how the JTAs and department objectives are met across the curriculum. *Semester course, two hours.*

EXER 201. ETHICS IN SPORTS. This course will explore the concepts of sport and competition in the context of a Christian world view. Special emphasis will be given to the theology of competition, a biblical foundation for spiritual integrity and ethical conduct, the mind and heart of the Christian athlete, and character and performance as a matter of Christian stewardship. Students will be encouraged in their spiritual maturity, promoting their athletic and intellectual development. Prerequisite: Physical Education 102 or 112. *Fall semester only, one hour.*

EXER 203. EXERCISE PSYCHOLOGY. This course provides an overview of psychological theory, research and methodology with an emphasis on application within diverse exercise settings. Topics include the history and development exercise psychology, personal and environmental factors of physical activity, use of counseling skills for behavior modification, and group processes within physical activity and exercise. Prerequisite Physical Education 101 or 111. *Fall semester only, three hours.*

EXER 210. FITNESS SWIMMING. The purpose of this course is to expose the student to fitness swimming, water aerobics, workout development in swimming/water aerobics. Prerequisite: Physical Education 101 or 111. *Fall semester only, two hours.*

EXER 215. MEDICAL TERMINOLOGY. This is a four-week online course that will help train students to understand and speak commonly used terms in various healthcare fields. Topics include word construction, body structure terminology, and terminology related to body systems and disorders. *Winter and summer online only, three hours.*

EXER 220. WELLNESS PROMOTION AND PROGRAMMING. This course examines strategies for successful health promotion and programming. Emphasis is placed on synthesis of various concepts related to wellness programming and guidelines for planning, implementing, and evaluating successful programs. There will be opportunities for planning, implementing, and evaluating programs for the Employee Wellness Program. Prerequisite: Physical Education 101 or 111. *Semester course, two hours.*

EXER 221. PERSONAL TRAINING. This course will introduce students to the profession of personal training. Students will develop skills in exercise technique, including teaching approaches involving free-weight and machine exercises, cardiovascular activities, flexibility, and plyometrics. Program designs will include the healthy adult as well as for adults presenting unique challenges to exercise. Students will design and implement a program for an assigned client, whom they will train throughout the second half of the semester. Prerequisite: Physical Education 102 or 112. *Semester course, two hours.*

EXER 223. RED CROSS LIFEGUARD TRAINING. An additional fee is charged for this course. Two and one-half hours/week. Prerequisite: Physical Education 102 or 112 and consent of the instructor. *Spring semester only, two hours.*

EXER 225. RED CROSS WATER SAFETY INSTRUCTOR. An additional fee is charged for this course. Two hours/week. Intermediate swimming level. Prerequisite: Physical Education 102 or 112 and consent of the instructor. *Fall semester only, two hours.*

EXER 227. RED CROSS FIRST AID - CPR. This course includes preparation and testing for the American Red Cross First Aid and CPR certification. The standardized curriculum includes basic first aid, emergency response, adult CPR and infant CPR. Two lectures per week. Prerequisite: Physical Education 102 or 112. *Semester course, one hour.*

EXER 228. PHYSICAL EDUCATION FOR ELEMENTARY EDUCATORS. The purpose of this class is to introduce the students to a basic overview of elementary physical education in order that they become advocates of physical education and learn to integrate movement education within their classrooms. Prerequisite: Physical Education 102 or 112. *Semester course, one hour.*

EXER 230. INTRODUCTION TO EXERCISE PROGRAM DESIGN. This course will instruct students in designing and implementing scientifically sound exercise programs. This includes: dynamic and static warmup, resistance training, aerobic conditioning, speed and agility programming, and plyometrics. The process of needs analysis will be introduced and covered. The students will be introduced to basic periodization theories and program implementation and adjustment strategies. The course will also cover an introduction to exercise equipment types, functions, and uses. For exercise science students, this course will serve as an introduction to the pertinent skills and knowledge required of them in both their professional internship and future career. Prerequisites: Physical Education 101 or 111; and 102 or 112. *Semester course, three hours.*

EXER 233. DESIGNING RESISTANCE TRAINING PROGRAMS. This course will instruct students in designing and implementing scientifically sound resistance training programs. The response and adaptation of the muscular, nervous and cardiovascular systems to prescribed resistance training programming will be examined. Modification and program design for persons in special populations will be covered. Students will be able to understand and apply exercise program prescription to practical application in their professional careers. Prerequisite: Physical Education 102 or 112. *Semester course, two hours.*

EXER 234. INTRODUCTION TO NUTRITION. An introduction to the importance of diet for present and future good health. Carbohydrates, fats, proteins, vitamins, and minerals, and their interactions will also be addressed. In addition, the course explores topics such as label-reading, popular diets, dietary analysis, and other issues of current interest in the field of nutrition, including sport and exercise nutrition, supplements, and life-cycle nutrition. Prerequisite: Biology 101 or Science 202. *Semester course, three hours.*

EXER 235. FACILITY MANAGEMENT. This course will focus on the proper guidelines, standards and regulations necessary to successfully design and operate a safe and functional health and fitness facility. The minimal performance codes needed to operate legally will be examined, including compliance with the American Disabilities Act. The necessary steps to ensure optimum performance of a health and fitness facility, such as program development and marketing, will be discussed. This course will also cover important topics such as compliance with the American Disabilities Act, incorporating technical advances into the facility, hiring and training staff, emergency plans, risk management policies, and all federal laws and guidelines to ensure the safety of both the management and the users of a facility. Prerequisite: Physical Education 101 or 111. *Semester course, two hours.*

EXER 237. APPLIED SPORT SCIENCE. The purpose of this course is to introduce students to the EBP process and develop literacy abilities while investigating hot topics relevant to sport and human performance. Topics covered will include the benefits of EBP and the EBP process, conducting a literature search, appraising literature for best evidence, various topics in sport and human performance

(i.e. performance enhancing drugs, movement screening for injury prediction and prevention, concurrent strength and endurance training, weight loss strategies, etc.). Prerequisite: Biology 101 or Science 202; Management 201, Mathematics 201, or Psychology 201.

Summer online only, three hours.

EXER 240. DIETARY SUPPLEMENTS. This course provides an overview of the dietary supplement industry, current regulations, product development process, and marketing of products. Students will learn how to critically evaluate dietary supplements in terms of claims, efficacy, and safety. This course, offered online, is open to all majors. Prerequisites: Exercise Science 234.

Alternate years, fall semester and summer online only, three hours.

EXER 242. PREVENTION AND TREATMENT OF CHRONIC DISEASES. The purpose of this course is to provide the student with a comprehensive education on the nature of the most prevalent chronic diseases afflicting western society today. This course will examine the epidemiology, pathophysiology, prevention, and treatment of diabetes, cardiovascular disease, and obesity. Prerequisite: Exercise Science 258 or Biology 102.

Summer online only, three hours.

EXER 244. NUTRITION AND HEALTH. A study of the science of nutrition with an emphasis on how nutrition influences health and wellbeing. Students will gain a foundational knowledge of the role of nutrition in the development and treatment of chronic diseases. Prerequisite: Exercise Science 234.

Alternate years, fall semester only, three hours.

EXER 245. EXERCISE NEUROBIOLOGY. This course will introduce current concepts and literature regarding the effects of exercise on neurotrophic factors and how the brain acutely and chronically adapts to exercise. Prerequisite: Biology 101. *Fall semester, summer online, three hours.*

EXER 250. INTRODUCTION TO PHYSICAL THERAPY. This course will provide an introduction to the practice of physical therapy. It will integrate studies in biology and anatomy for application in future careers in physical or occupational therapy. Students will learn how to take basic medical histories, have an introduction to performing a general physical examination, and begin to develop differential diagnoses for various musculoskeletal processes. In addition, students will begin to investigate therapy modalities applicable to a variety of therapy needs. Throughout this course, students will gain knowledge helpful in their transition into the first year of an advanced health professional program. Prerequisite: Sophomore standing.

Spring semester only, one hour.

EXER 251. PREVENTION AND CARE OF INJURIES. The purpose of this course is to give the students the knowledge and skills necessary to prevent and care for athletic related injuries. The topics covered include fitness training, nutrition, sports equipment, emergency situations, blood borne pathogens, environmental conditions, taping techniques, injury rehabilitation, psychological concerns with injuries, recognition of injuries, and the basic anatomy of and common injuries to the different parts of the body. Prerequisite: Physical Education 101 or 111.

Spring semester only, two hours.

EXER 253. ANATOMY & PHYSIOLOGY I. This course will introduce the student to human anatomy and physiology with emphasis on the various body systems and how they integrate with one another. The effect of exercise on each system will be explored and clinical examples will be discussed. Laboratory exercises will include simulations using physical and computer models, as well as introductory tissue dissections. Two lectures and one lab per week. Prerequisite: Physical Education 102 or 112. Equivalent course: Biology 341 (Mammalian Anatomy). *Fall semester only, four hours.*

EXER 254. NUTRITION IN SPORTS AND EXERCISE. Using USDA recommendations, this course will explore nutritional strategies for all levels of physical activity and competitive sports. Emphasis will be placed on energy balance, substrate metabolism, hydration, ergogenic aids, nutritional supplementation, and banned substances. Prerequisite: Exercise Science 234.

Spring semester only, three hours.

EXER 256. PHYSIOLOGY OF EXERCISE. This course will survey the acute and chronic effects of exercise on human systems. Students will be introduced to the essentials of human movement,

energy metabolism, cardiorespiratory function, and sport performance. Three lectures and one lab per week. Prerequisite: Exercise Science 253 or Biology 341. *Semester course, four hours.*

EXER 257. ENVIRONMENTAL PHYSIOLOGY. This course will introduce current concepts and literature regarding various environmental (heat, cold, altitude, etc.) conditions as they affect the typical responses to exercise. Both acute effects and chronic adaptations will be examined. Prerequisite: Exercise Science 258 or Biology 341. *Spring semester and summer online, three hours.*

EXER 258. ANATOMY & PHYSIOLOGY II. A continuation of the study of human anatomy and physiology with emphasis on the various body systems and how they integrate with one another. The effect of exercise on each system will be explored and clinical examples will be discussed. Laboratory exercises will include simulations using physical and computer models, as well as introductory tissue dissections. Two lectures and one lab per week. Prerequisite: Exercise Science 253. Equivalent course: Biology 346 (Mammalian Physiology). *Spring semester only, four hours.*

EXER 260. INDEPENDENT STUDY. Individual study of specialized topics in exercise science. Sophomore standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

EXER 270. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in exercise science. Sophomore standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

EXER 290. STUDIES IN EXERCISE SCIENCE. A course that covers special topics related to exercise science. *Semester course; one, two or three hours.*

EXER 304. EXERCISE TESTING. This course will cover fitness testing procedures for healthy and clinical populations. The course will follow the American College of Sports Medicine Guidelines for Exercise Testing. There will be a balance between lecture and laboratory work. Prerequisites: Exercise Science 256; and Management 201, Mathematics 201, or Psychology 201. *Semester course, three hours.*

EXER 305. BASIC PRINCIPLES OF COACHING. This course will introduce the principles of coaching team and individual sports. The student will be able to identify and demonstrate the personal and professional qualities required to become an effective coach at any level. The student will be able to develop a basic philosophy regarding the ethical and logical decision-making processes involved in coaching sports. Prerequisite: Physical Education 102 or 112. *Semester course, two hours.*

EXER 306. EXERCISE LEADERSHIP. This course will focus on the practical skills necessary to teach group exercise classes. It will provide a survey of basic instructor skills such as music selection, choreography and cueing. All students will experience introductory class leadership in a variety of traditional and contemporary modes of group exercise including strength, flexibility, cardiovascular, and equipment-based classes. Prerequisite: Physical Education 102 or 112. *Semester course, two hours.*

EXER 307. EXERCISE PRESCRIPTION. This course focuses on developing exercise prescriptions for healthy populations as well as those with chronic diseases. Prescriptions will be based on possible client goals of improved health, fitness or quality of life (abilities to perform activities of daily living). All course work will follow the standards set by the American College of Sports Medicine. This course meets the Speaking Intensive (SI) requirement for the Exercise Science major. Prerequisite: Exercise Science 256. *Semester course, three hours.*

EXER 309. BIOMECHANICS. The purpose of this course is to study biomechanical concepts and principles with special focus on their applications in human movement and physical activity. Students will examine the relationship between internal and external biomechanical factors and their effect on human performance and mechanisms of injury. Both qualitative and quantitative approaches will be discussed and applied to movement observation. Prerequisites: Physics 121; and Exercise Science 258 or Biology 346. *Semester course, three hours.*

EXER 312. CLINICAL EXERCISE PHYSIOLOGY. This course will survey the clinical, behavioral and genetic components of cardiovascular, pulmonary, neuromuscular, metabolic, immunological, and orthopedic disorders. Physical activity will be examined in relation to chronic disease prevention and treatment. Evidence-based healthcare will also be introduced. Prerequisite: Exercise Science 256. *Spring semester only, three hours.*

EXER 344. LIFE CYCLE NUTRITION. A survey of nutrition needs throughout the stages of the life cycle, including pregnancy and lactation, infancy, adolescence, adult, and aging. The socioeconomic, cultural, and psychological influences on food and nutrition behavior will also be addressed. Prerequisite: Exercise Science 244. *Alternate years, spring semester only, three hours.*

EXER 360. INDEPENDENT STUDY. Individual study of specialized topics in exercise science. Junior standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

EXER 370. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in exercise science. Junior standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

EXER 377. RESEARCH METHODS IN EXERCISE SCIENCE. This course will introduce basic methods of reading, understanding, evaluating, and applying research. Students will experience quantitative research, qualitative research, mixed-model research and research reviews. Students will also become acquainted with statistical concepts in research planning and design. Working in research teams, students will complete a service learning project for the Early Education Center (EEC). They will also write a research proposal to be continued and completed in EXER 407. This course meets the Writing Intensive (WI) and Information Literacy (IL) requirements for the Exercise Science major. Prerequisites: Exercise Science 256; and Management 201, Mathematics 201, or Psychology 201. *Semester course, three hours.*

EXER 402. CERTIFIED EXERCISE PHYSIOLOGIST. This course will integrate the EXER curriculum, specifically the objectives of the ACSM certified Exercise Physiologist (EP-C). The job task analyses (JTAs) specific to the EP-C exam will be covered in detail. Students will apply the EP-C JTAs in class and with personal training clients. Prerequisites: Exercise Science 304 and 307. *Spring semester only, three hours.*

EXER 403. PRINCIPLES OF STRENGTH AND CONDITIONING. This course will serve as preparation for students who will be taking the Certified Strength and Conditioning Specialist (CSCS) certification exam given by the National Strength and Conditioning Association. Prerequisite: Exercise Science 304. *Semester course, three hours.*

EXER 404. PROFESSIONAL CERTIFICATION AND SEMINAR. This course provides instructor-guided preparation for a professional certification exam offered by ACSM or NSCA. There is an additional cost incurred by the student to register for the certification exam and purchase the study materials, including practice exams, from the certifying organization. Students will determine which certification exam best matches their future career and complete it prior to the end of the semester, on or before Study Day. In addition, students will be required to complete a professional portfolio that will represent the body of work completed in the Exercise Science major. Prerequisite: Exercise Science 480. *Semester course, one hour.*

EXER 407. RESEARCH PRACTICUM. The students will complete the original group research project created in EXER 377, including data collection, statistical analysis, and a final report. Students will complete an individual research proposal. Prerequisites: Exercise Science 304 and 377. *Semester course, three hours.*

EXER 460. INDEPENDENT STUDY. Individual study of specialized topics in exercise science. Senior standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

EXER 470. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in exercise science. Senior standing, permission of the department chair, and a faculty sponsor are required.
Semester course, one, two or three hours.

EXER 480. INTERNSHIP. Students will earn academic credit for field experience in the areas of applied Exercise Science, such as coaching, athletic training, strength and conditioning, health and fitness, physical therapy, and nutrition. Students will first determine their career path and corresponding professional certification. Then students will locate a facility along with an onsite supervisor for their internship. Professional dress is expected each day of the internship. Grade is dependent upon written evaluation by an on-site supervisor and the submission of the student's written report to the Department of Physical Education. Students majoring in Exercise Science must earn at least five credits (300 clock hours) for this course. Prerequisites: Exercise Science 306 and 307.

Semester course, one to six hours.

PHYSICAL EDUCATION (PHYE)

PHYE 101. FITNESS AND WELLNESS I - MEN. Students will be introduced to current concepts and trends of individual fitness and wellness. Each student will be exposed to the following concepts: cardiovascular disease, muscular strength & endurance, aerobic fitness, body composition, flexibility, nutrition, stress management, common injuries, dimensions of wellness, and behavior change modification.
Fall semester only, one hour.

PHYE 102. FITNESS AND WELLNESS II- MEN. Students will participate in physical activity labs to promote a personal responsibility for one's health and wellness. Each student will complete a fitness appraisal targeting overall physical fitness, muscular strength, and flexibility. Prerequisite: Physical Education 101.
Spring semester only, one hour.

PHYE 111. FITNESS AND WELLNESS I - WOMEN. Students will be introduced to current concepts and trends of individual fitness and wellness. Each student will be exposed to the following concepts: cardiovascular disease, muscular strength & endurance, aerobic fitness, body composition, flexibility, nutrition, stress management, common injuries, dimensions of wellness, and behavior change modification.
Fall semester only, one hour.

PHYE 112. FITNESS AND WELLNESS II- WOMEN. Students will participate in physical activity labs to promote a personal responsibility for one's health and wellness. Each student will complete a fitness appraisal targeting overall physical fitness, muscular strength, and flexibility. Prerequisite: Physical Education 111.
Spring semester only, one hour.

PHYE 190. STUDIES IN PHYSICAL EDUCATION. A course that covers special topics related to athletics and physical education.
Semester course; one, two or three hours.

PHYE 201. RACQUETBALL. Two hours per week. Prerequisite: Physical Education 102 or 112.
Spring semester only, one hour.

PHYE 207. BEGINNING BOWLING. Two hours per week. Prerequisite: Physical Education 102 or 112.
Semester course, one hour.

PHYE 209. TENNIS. Two hours per week. Prerequisite: Physical Education 102 or 112.
Fall semester only, one hour.

PHYE 210. BALLROOM DANCING. This course explores the history, rhythm, steps and styles of the Foxtrot, Waltz, Tango, Cha-Cha, Rumba and Swing. Students will learn the basic skills and information necessary to develop and continue one's interest in ballroom dancing, in addition to learning the fundamentals of lead/follow technique, dance etiquette, cooperation with a partner, and the ability to identify and distinguish music for each dance. Prerequisite: Physical Education 102 or 112. Two hours per week.
Fall semester only, one hour.

PHYE 211. BEGINNING DANCE. This course explores various movement disciplines including elements of Ballet, Jazz, Modern Dance, Folk Dance, Musical Theater, Lyrical and Hip Hop while investigating the history and cultural value of dance. No prior dance experience is necessary. Prerequisite: Physical Education 102 or 112. Two hours per week. *Fall semester only, one hour.*

PHYE 213. INTERMEDIATE DANCE. This course explores various movement disciplines including elements of Ballet, Jazz, Modern Dance, Musical Theater, Lyrical and Hip Hop while investigating the history and cultural value of dance. This course is more appropriate for the student with previous dance experience. Prerequisite: Physical Education 102 or 112. Two hours per week. *Fall semester only, one hour.*

PHYE 215. ADVANCED DANCE. Two hours per week. Prerequisite: Physical Education 102 or 112. *Fall semester only, one hour.*

PHYE 216. ADVANCED BALLROOM DANCING. This advanced level course continues the exploration of the rhythm, steps and styles of the Foxtrot, Waltz, Tango, Cha-Cha, Rumba and Swing. Students will learn more advanced patterns and skills in these dances, in addition to learning the Viennese Waltz and advanced partnering in the Swing. Prerequisite: Physical Education 102, 112, and 210, or permission of the instructor. One hour per week. *Spring semester only, one hour.*

PHYE 217. VOLLEYBALL. Two hours per week. Prerequisite: Physical Education 102 or 112. *Spring semester only, one hour.*

PHYE 260. INDEPENDENT STUDY. Individual study of specialized topics in Physical Education. Sophomore standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

PHYE 270. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in physical education. Sophomore standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

PHYE 290. STUDIES IN PHYSICAL EDUCATION. A course that covers special topics related to athletics and physical education. *Semester course; one, two or three hours.*

DEPARTMENT OF HISTORY

Dr. Harp, Chair; Dr. Edwards, Dr. M. Graham, Dr. Mitchell.

Course Requirements for Bachelor of Arts Degree in History (HIST)—39 hours

History Core Requirements (30 hours):

- History 143, 144, 201, 283, 285, and 400.
- One course from: History 336, 349, 350, 357, or 379.
- One course from: History 224 or 231.
- Two courses from: History 207, 208, 209, or 212.

History Electives (9 hours):

- Three courses from: History 300- or 400-level courses, Political Science 317, Political Science 318, Religion 341, Religion 342, or Religion 343.

Courses that count in the HIST major quality point average (MQPA):

All courses with “HIST” prefix. A minimum MQPA of 2.00 is required to graduate.

Course Requirements for a Bachelor of Arts Degree in History and Social Studies Secondary Education Certification (HSED)—88 hours

History Core Requirements (27 hours):

- History 141, 143, 144, 201, 209, 212, 283, 285, and 357.

History Elective (3 hours):

Once course from: History 300- or 400-level courses, Religion 341, Religion 342, or Religion 343.

Major-Related Requirements (18 hours):

Economics 101, 102; Political Science 201, 204; and Sociology 103 and 201.

Professional Education Requirements (40 hours):

Education 202, 203, 204, 305, 310, 371, 431, 488; Psychology 102; and Special Education 101.

History majors are strongly encouraged to take courses in languages, philosophy, logic, computer systems, and statistics in their programs if they plan to attend graduate school in history. Courses at the 200 and 300 levels are open to all students.

The History Department seeks to equip their students with skills in professional writing, speaking and information literacy. History 143 is designated as Information Literacy (IL) course, and History 201 and 400 are designated as Writing Intensive (WI) and Speaking Intensive (SI), and IL courses. Information literacy instruction includes defining and framing significant historical research questions; distinguishing different types of sources; using databases to find relevant sources; critically evaluating www sites; citing sources correctly, respecting intellectual property and avoiding plagiarism; and synthesizing material from a range of electronic and traditional sources and presenting it in a cogent manner.

Course Requirements for a minor in History (18 hours)

A minor in History will consist of 18 hours, including six hours from each of the three following areas:

American History: History 283, 285, 334, 336, 349, 350, 357, or 379.

European History: History 208, 209, 212, 261, 262, 265, or 372.

Other History Electives: History 143, 144, 207, 224, 231, 260, 270, 337, 338, 341, 343, 346, 360, 370, 375, 376, 378, 390, 400, 460, 470, 480, 488; History 317, 318 or Political Science 317, 318; Religion 341, 342, or 343.

Students are expected to contact their advisors for a detailed schedule of courses recommended to meet requirements for a major.

HISTORY (HIST)

HIST 120. FOUNDATIONS OF HISTORY. An introduction to the principal theories, ideas, concepts, methods, and debates that have shaped the discipline of history. The course examines competing perspectives on history, human nature, and providence. It analyzes how historians use and evaluate evidence and provides Christian perspectives on history. *Semester course, three hours.*

HIST 141. WORLD GEOGRAPHY. An exploration of the physical and human geography of the globe. *Fall semester only, three hours.*

HIST 143. WORLD HISTORY I. A survey of the basic history of world societies from the earliest recorded development of human civilizations to the late medieval period. As an Information Literacy (IL) course, it emphasizes designing historical research questions; finding, evaluating, and using primary and secondary sources; citing sources properly; and writing a cogent paper. *Fall semester only, three hours.*

HIST 144. WORLD HISTORY II. A survey of the history of world societies from the early modern period to the present. Special emphasis is given to the interrelationship between the Western world and the non-Western world. *Spring semester only, three hours.*

HIST 201. HISTORIOGRAPHY. An introduction to the art and craft of history. Students learn the basics of the discipline of history, focusing on what historians do and have done, the essential concepts and methodologies they use, and the vocabularies they employ. Students sharpen the skills essential for work as a historian: critical reading, effective analysis, excellent writing, and skillful communication. This course fulfills the Writing Intensive (WI), Speaking Intensive (SI), and Information Literacy (IL) requirements for History and SESS majors. *Semester course, three hours.*

HIST 204. HISTORICAL AND PHILOSOPHICAL FOUNDATIONS OF EDUCATION. A survey of the historical and philosophical foundations of education from antiquity to the present day. It includes an analysis of political, sociological, and financial issues related to American education with emphasis upon understanding the contributions of Western Civilization and the impact of American institutions on systems of education. *Semester course, three hours.*

HIST 207. ANCIENT EMPIRES. A survey of ancient Near Eastern, Mediterranean, and European cultures with emphasis on the formation of and resistance to empires. The course explores the varied cultural legacies of ancient civilizations. *Alternate years, fall semester only, three hours.*

HIST 208. MEDIEVAL EUROPE. A survey of Europe from the end of the Roman Empire to the early fifteenth century that emphasizes the cultural and intellectual legacy of the Middle Ages. *Alternate years, spring semester only, three hours.*

HIST 209. RENAISSANCE AND EARLY MODERN EUROPE. An examination of the Renaissance, the formation of nation states in the fifteenth century, the Reformation of the sixteenth century, and the political, social, and intellectual origins of modern Europe before the French Revolution. *Fall semester only, three hours.*

HIST 212. MODERN EUROPE. An examination of European states and the nature of European identity from 1789 to the present, focusing on political, economic, and social revolutions; the impact of the global wars of the twentieth century; and the tensions surrounding European integration from 1945 onward. *Spring semester only, three hours.*

HIST 224. MODERN AFRICAN HISTORY. A survey of the peoples, events, and ideas/ideologies that have shaped the history of Africa from 1800 to the present. Special emphasis is given to the relationship between European imperialism and the current problems plaguing modern Africa. *Alternate years, fall semester only, three hours.*

HIST 231. MODERN LATIN AMERICAN HISTORY. The story of Latin America from the beginning of the colonial period to the present. The class explores the geography and history of those countries colonized by Spain and Portugal in the sixteenth century, which still preserve the influence of Iberian political and social principles today. It also examines the subsequent political, social, and economic development of Latin America, the complicated relationships between individual countries in this region, and the increasing relationships between the region as a whole and the rest of the world. *Alternate years, fall semester only, three hours.*

HIST 251. UNITED STATES SURVEY I. A survey of American history from its European origins through Reconstruction. This course is required for all PreK-4 Elementary, PreK-8 Special Education, and Middle Level Education majors. *Fall semester only, three hours.*

HIST 252. UNITED STATES SURVEY II. A survey of American history from the end of Reconstruction until the present. This course is required for all PreK-4 Elementary, PreK-8 Special Education, and Middle Level Education majors. *Spring semester only, three hours.*

HIST 260. INDEPENDENT STUDY. Individual study of specialized topics in history. Sophomore standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

HIST 261. BRITISH HISTORY TO 1781. A survey of British history with special emphasis on the development of the common law, parliament, and the British constitution. Recommended for pre-law students. *Alternate years, semester course, three hours.*

HIST 262. BRITISH HISTORY SINCE 1781. A survey of British history with special emphasis on Britain as an imperial power and on political, social, and cultural developments at home. *Alternate years, semester course, three hours.*

HIST 265. HISTORY OF SPAIN, 1500 TO PRESENT. An introduction to Spanish history from the union of the Crowns of Castile and Aragon to the present day. The central theme of the course is the problem of identity—how have the Iberian peoples identified themselves over time—and the political, religious, economic, and social difficulties historically associated with identity. *Alternate years, fall semester only, three hours.*

HIST 270. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in history. Sophomore standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

HIST 283. HISTORY OF THE UNITED STATES TO 1865. An introductory survey of American history from its colonial origins until the end of the Civil War. The course examines political, social, economic, religious, and cultural developments. *Fall semester only, three hours.*

HIST 285. HISTORY OF THE UNITED STATES SINCE 1865. An introductory survey of American history from Reconstruction to the present. The course examines political, social, economic, religious, and cultural developments. *Spring semester only, three hours.*

HIST 317. CONSTITUTIONAL LAW OF THE UNITED STATES I. A study of the development of the United States Constitution through use of the case study method. This course especially focuses on the constitutional powers of the three branches of government, the relationship between state and federal governmental powers, and property rights and economic liberties. Students may not receive credit for both History 317 and Political Science 317. *Fall semester only, three hours.*

HIST 318. CONSTITUTIONAL LAW OF THE UNITED STATES II. A study of the development of the United States Constitution through the use of the case study method. This course especially focuses on the idea of equality and the equal protection clause, due process, privacy and liberty rights, freedom of speech, press and religion and other Bill of Rights issues. Students may not receive credit for both History 318 and Political Science 318. *Spring semester only, three hours.*

HIST 334. AMERICAN CIVIL WAR. An exploration of arguably the pivotal event in American history, this course will examine the origins, events, ramifications, and presentations of the war. Students will study its decisive moments, seminal leaders, and formative ideas as well as examining historiographical and popular treatments of the war. Students will delve into both primary and secondary historical sources, including biography and fiction, in order to understand the events, portrayals, analyses, and impact of the Civil War. *Alternate years, fall semester only, three hours.*

HIST 336. UNITED STATES MILITARY HISTORY. A study of the socio-political, economic, technological and human aspects of war that traces the development of “the American art of war” from the early colonial period to the present. *Alternate years, spring semester only, three hours.*

HIST 337. GLOBAL MILITARY HISTORY I. A thematic overview of military history in a global perspective from the Paleolithic era to 1870. This course focuses upon the tactics and strategies of armies and powers of the past, as well as traces how warfare reflects the social, cultural, economic, and political circumstances of the peoples who wage it. *Fall semester only, three hours.*

HIST 338. GLOBAL MILITARY HISTORY II. A thematic overview of military history in a global perspective from 1870 to the present. This course will trace the development of warfare during this period, from strategy and tactics to weaponry, while also examining whether the concept of “modern

warfare” exists. In addition, the course will trace the relationship between society and the military and how warfare reflects the societies that wage it. *Spring semester only, three hours.*

HIST 341. THE RISE OF CHRISTIANITY. This course analyzes Christianity as it grew from an obscure movement into a dynamic force which swamped the pagan cults of the Roman Empire. Major topics include Roman paganism, Roman religious policy, the growth and persecution of Christianity, tensions between Christianity and classical culture, and the development of early medieval Europe and Byzantium. *Alternate years, semester course, three hours.*

HIST 343. COUNTERFACTUAL HISTORY. A historiographical examination of counterfactual, or “what if”, history from its uses by Herodotus to contemporary scholars. This course traces the history of counterfactuals as well as present debates surrounding the proper methodologies for integrating them into the historical discipline. The centerpiece of the course will be a solidly researched and methodologically sound counterfactual examination of the students’ own design. *Fall semester only, three hours.*

HIST 346. BYZANTIUM AND ISLAM. A thematic overview of the pre-modern Byzantine and Islamic worlds, from their common roots in the Mediterranean world of Late Antiquity to the establishment of the Islamic Empires and Kingdoms of the Near East, Asia, and Africa. The course traces the transformation, flourishing, and decline of Byzantium concurrently with the rise of Islam to world dominance. *Alternate years, spring semester only, three hours.*

HIST 349. AMERICAN RELIGIOUS HISTORY. An exploration of religion in America that focuses on the various individuals and religious groups, events, ideas, and organizations that have had the most significant impact on American life. *Alternate years, spring semester only, three hours.*

HIST 350. SPORTS IN AMERICAN HISTORY. An overview of sports in America from colonial times until the present that focuses especially on the relationship between sports and society and issues of race, class, and gender. *Alternate years, spring semester only, three hours.*

HIST 357. MINORITIES IN AMERICAN HISTORY. An examination of the experience of minority groups in America focusing on Native Americans, immigrants, women, African Americans, and Asian Americans. The course analyzes the problems these groups experienced and their contributions to America. *Spring semester only, three hours.*

HIST 360. INDEPENDENT STUDY. An advanced course for students with substantial background in college history courses. Intensive and independent research into a particular historical question. Junior standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

HIST 370. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in history. Junior standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

HIST 372. THE FRENCH REVOLUTION AND NAPOLEON. An investigation of the French Revolution and Napoleonic France. Organized in a seminar format, this course analyzes the causes, major players, events, and consequences of the French Revolution. It explores the significant ideas that influenced or arose out of the French Revolution and the effect these ideas have on our current understanding of politics, society, and human nature. It assesses the pivotal role Napoleon Bonaparte played in the French Revolution and the debate over whether he represents the fruition of, or the antithesis to, the Revolution. Finally, the course examines the concept of revolution, evaluating the description or definitions of revolutions, and similarities between the French and other modern or pre-modern revolution. *Spring semester only, three hours.*

HIST 375. WORLD WARS I AND II. An exploration of the global impact of the two pivotal events of the twentieth-century world, examining the origins, events and ramifications of World Wars I and II. *Alternate years, spring semester only, three hours.*

HIST 376. ALEXANDER THE GREAT AND THE HELLENISTIC WORLD. An exploration of the life of Alexander the Great and the Hellenistic world created by his conquests. The course analyzes how the traditions of the Greeks were synthesized with the heritage of western Asia and northeast Africa to shape a world stretching from the Balkans to India.

Alternate years, spring semester only, three hours.

HIST 378. FOOD AND FEASTING IN THE WESTERN TRADITION. An examination of the mystery and wonder of man as the only animal who eats instead of feeds. The course will analyze the dining patterns and habits of the Hebrews, Greeks, Romans, and early Christians. Through the developments in dining brought about by the Industrial Revolution and the global economy, students will learn that mealtimes are more than a mere intersection of meat and drink. On a deeper level, our meals represent the intersection of theology, philosophy, history, and poetry. This amazing interplay reaches its epic fulfillment in the Feast – a special time at which family, congregations, and local communities gather round to celebrate the Abundance and the Divine.

Spring semester only, three hours.

HIST 379. AMERICAN INTELLECTUAL HISTORY. A study of American thought from the colonial era to the mid twentieth century. This course examines a variety of significant texts and key thinkers, seeking to understand them within their particular cultural contexts.

Alternate years, spring semester only, three hours.

HIST 390. STUDIES IN HISTORY. Specialized subject matter that varies each semester depending upon interests of the instructor and students.

Semester course, three hours.

HIST 400. SENIOR RESEARCH SEMINAR. A seminar designed to take seniors methodically through the process of writing a substantial research paper in history. It includes selecting a topic, conducting research (mostly in primary sources), constructing a detailed outline, writing, and presenting a paper. This course fulfills the Writing Intensive (WI), Speaking Intensive (SI), and Information Literacy (IL) requirements for History majors.

Semester course, three hours.

HIST 410. SEMINAR IN CLASSICAL & CHRISTIAN EDUCATION. An intensive exploration of how the Christian faith illuminates academic study. This course will examine how faith and learning interacted in the West historically as well as how to apply the Christian faith to the operation of educational institutions and disciplines in the future. Throughout the course, special emphasis will be placed on contemporary Classical-Christian school movement as a case study of one way Christians are currently attempting to bring historical lessons and their faith to bear on education.

Alternate years, spring semester only, three hours.

HIST 460. INDEPENDENT STUDY. An advanced course for students with substantial background in college history courses. Intensive and independent research into a particular historical question. Senior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

HIST 470. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in history. Senior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

HIST 480. INTERNSHIP IN HISTORY. A semester of intensive study and work, usually off-campus, undertaken by the student with the approval of the faculty of the Department of History. A student must have a minimum QPA of 3.0 and may not have completed an internship in any other department, although exceptions may be made for a GCCI internship. Students are required to keep a journal of weekly activities and complete a project agreed upon with the Department. An internship in history may be taken at any institution that practices Public History.

Semester course, one to six hours.

HIST 488. SEMINAR IN HISTORY. An advanced course for junior and senior students desiring an in-depth exploration of one historical problem, involving individual research, discussion, oral reports, and written essays. Prerequisite: Permission of the department.

Semester course, one, two or three hours.

HIST 499. HONORS IN HISTORY. Seniors who have shown special aptitude in history may, upon invitation and permission of the department, undertake special research in history. A 30-page historical paper and a defense of the paper before the history faculty are required. *Semester course, three hours.*

DEPARTMENT OF MATHEMATICS

Dr. Thompson, Chair; Dr. Eric Bancroft, Dr. Erin Bancroft, Dr. Bonomo, Dr. Flanders, Mr. Dean, Dr. Jackson, Dr. McIntyre, Mrs. McIntyre.

Course Requirements for Bachelor of Science Degree in Mathematics (MATS)—42 hours

Math Core Requirements (23 hours):

Mathematics 162, 210 or 213, 222, 261, 421, 465, and 488.

Math Electives (12 hours):

At least three hours from Mathematics 303, 365, 422, 466, or 467.

A minimum of seventeen hours from 300 or 400-level Mathematics.

A one-year sequence from Mathematics 331-332, 421-422, or 465-466/467.

Major-Related Requirements (7 or 11 hours):

Computer Science 141; Physics 101, or Physics 121 and 122.

Note: Credits in Mathematics 110, 111, 118, 119, 141, 151, 152, 161, 201, 237, 240, 305, 306, and 307 do not apply toward the thirty-five math credit hours required for the Mathematics major.

Courses that count in the MATS major quality point average (MQPA):

All courses with “MATH” prefix, with the exception of Mathematics 110, 111, 118, 119, 141, 151, 152, 201, 237, and 240. A minimum MQPA of 2.00 is required to graduate.

Course Requirements for a Bachelor of Science Degree in Mathematics and Secondary Education Certification (MSED)—85 hours

This program fulfills the requirements of the full mathematics major and the requirements of the Commonwealth of Pennsylvania for secondary mathematics certification.

Math Core Requirements (38 hours):

Mathematics 162, 210 or 213, 222, 240, 261, 303, 331, 421, 465, and 488.

Six additional credit hours, including one of Mathematics 332, 422, 466 or 467

Major-Related Requirements (7 or 11 hours):

Computer Science 141; Physics 101, or Physics 121 and 122.

Professional Education Requirements (40 hours):

Education 202, 203, 204, 305, 306, 371, 431, 488; Psychology 102; and Special Education 101.

Note: Credits in Mathematics 110, 111, 118, 119, 141, 151, 152, 161, 201, 237, 305, 306, and 307 do not apply toward the thirty-eight math credit hours required for the Mathematics Secondary Education Certification major.

Courses that count in the major quality point average:

All courses with “MATH” prefix, with the exception of Mathematics 110, 111, 118, 119, 141, 151, 152, 201, 237, and 240. Mathematics Secondary Education Certification majors must have a minimum MQPA of 2.75 in all Mathematics courses excluding Mathematics 110, 111, 118, 119, 141, 151, 152, 201, and 237.

Every graduating mathematics major will receive a thorough introduction to mathematical ideas as well as to problem solving skills and strategies. Moreover, every graduate should be able to communicate technical ideas, both orally and through the use of a written document, and should also have an established ability to learn how to use a computer algebra system in particular and other library and electronic resources in general in order to generate, locate, evaluate, and use information. To this end, mathematics majors receive instruction in the use of *Mathematica* in the calculus sequence (Mathematics 161, 162, and 261) and also acquire a working knowledge of a computer program in Computer Science 141. They also gain experience in researching and presenting results, both orally and through writing a substantial technical paper, in Mathematics 488 *Seminar of Mathematics*. This collection of courses serves to satisfy the Writing Intensive, Speaking Intensive, and Information Literacy requirements within the major.

Course requirements for a concentration in Actuarial Science (52 hours)

Students majoring in mathematics can also earn a concentration in Actuarial Science by completing Mathematics 306, 331, 332, and two of Mathematics 232, 262, 303, 365, 422, 466, or 467 with one course being at the 300-400 level for their math electives; Accounting 201; Finance 301; Finance 432 or 434; and Management 433. Students must also write a paper on probability or statistics in Mathematics 488. Students are also encouraged to take additional courses from Economics 101, 102, 302, and 442. The Mathematics 306 requirement is waived for students who pass the first actuarial exam on their own.

Course Requirements for a minor in Mathematics (22 hours)

A minor in Mathematics will consist of 22 hours, including Mathematics 210 or 213, and 222 but excluding Mathematics 110, 111, 118, 119, 151, 152, 201, 237, 240, 305, 306, and 307.

Students interested in graduate school in mathematics are specifically advised to take Mathematics 365, 422, 466, and 467.

Students who are enrolled in College Algebra, Pre-Calculus, or one of the calculus courses and determine that they are not properly placed may change to another course within the pre-calculus/calculus sequence on or before the sixteenth class meeting (twelfth class meeting if currently in College Algebra or Pre-Calculus). The student must have the approval of the current instructor and the instructor of the course to which the student intends to move. The student must complete and return an Add/Drop Form to the Registrar's Office.

College Math Courses Taken in High School

Transfer credit may be awarded for mathematics courses that are equivalent or comparable to those offered by the Grove City College Department of Mathematics and completed with a grade of “C” or better. Any such courses taken before entering Grove City College must be listed in the catalog of the college of transfer as courses offered for degree credit to that college's undergraduates, must be taken in a classroom setting where most of

the students are college undergraduates, and must be organized and taught by college faculty.

Students are expected to contact their advisors for a detailed schedule of courses recommended to meet requirements for a major.

MATHEMATICS (MATH)

MATH 110. COLLEGE ALGEBRA. Designed to help prepare students for success specifically in Business Calculus as well as in Pre-Calculus, this course offers a thorough treatment of linear and quadratic equations and inequalities, rational and radical equations, and functions and their graphs. A basic understanding of high school algebra is presumed. **This course does not satisfy the Quantitative/Logical Reasoning requirement.** *Semester course, three hours.*

MATH 111. PRE-CALCULUS. Designed to help prepare students for success in Physics 121 or Calculus I, this course offers a thorough treatment of function theory, analytic geometry, exponential and logarithmic functions, and trigonometry. A basic understanding of high school algebra and analytic geometry is presumed. *Semester course, three hours.*

MATH 118. FINITE MATHEMATICS. An introduction to a variety of topics from finite mathematics such as sets, counting, basic probability and statistics, linear systems, matrix algebra, and linear programming (graphical solutions). Time permitting, additional topics such as linear programming with the simplex method, Markov chains, and game theory will be considered. *Fall semester only, three hours.*

MATH 119. TOPICS IN CONTEMPORARY MATHEMATICS. This course will consist of a survey of a number of mathematical ideas on an introductory level. Topics may include graph theory, symmetry, sequences, fractals, fair-division algorithms, apportionment, financial math, and voting theory. *Spring semester only, three hours.*

MATH 141. BUSINESS CALCULUS. The differential and integral calculus of elementary functions with applications in business and economics. Students may not receive credit for both Mathematics 141 and 161. Mathematics 161, not 141, is the prerequisite for 162. *Semester course, four hours.*

MATH 151. SURVEY OF MATHEMATICS I. This course (along with Math 152) is a conceptual exploration of mathematical topics related to elementary and middle school mathematics, and is part of a two-course, six-hour mathematics requirement specifically designed for elementary education and early childhood majors. Content studied includes critical thinking and problem solving, logic, sets, relations and functions, numeration systems and whole-number computation, integers, and elementary number theory. Restricted to PreK-4 elementary education, PreK-8 special education, middle level education, and music education majors only. *Fall semester only, three hours.*

MATH 152. SURVEY OF MATHEMATICS II. This course continues the exploration of selected topics from the elementary and middle school mathematics curriculum, including rational and real numbers, probability, statistics, geometry, and measurement. Prerequisite: Mathematics 151 or permission of instructor. *Spring semester only, three hours.*

MATH 161. CALCULUS I. A first course in calculus that assumes no prior study of the subject. Topics include: limits and continuity, differentiation, curve sketching, definite and indefinite integrals, and applications. This course fulfills in part the Information Literacy (IL) requirement for the Mathematics major. Prerequisite: High school mathematics including algebra, analytic geometry, and trigonometry. Students may not receive credit for both Mathematics 141 and 161. *Semester course, four hours.*

MATH 162. CALCULUS II. A continuation of Math 161 covering the topics: exponential, logarithmic and inverse trigonometric functions, techniques of integration, parametric equations,

sequences, infinite series, and Taylor series. This course fulfills in part the Information Literacy (IL) requirement for the Mathematics major. Prerequisite: Mathematics 161 or permission of instructor.

Semester course, four hours.

MATH 201. STATISTICAL METHODS. An introduction to the basic methods and techniques of statistical inference including descriptive measures, probability distributions, tests of hypotheses, interval estimation, and analysis of variance. Students may only receive credit for one of Mathematics 201, Management 201, or Psychology 201.

Fall semester only, three hours.

MATH 210. COMBINATORICS. A study of the foundations of mathematics in the context of combinatorial analysis with an emphasis on mathematical writing. Representative topics include set theory, functions, proof techniques, induction, enumeration techniques, the pigeon-hole principle, binomial and multinomial coefficients, the principle of inclusion-exclusion, and generating functions. Corequisite: Mathematics 162.

Fall semester only, three hours.

MATH 213. DISCRETE MATHEMATICS FOR COMPUTER SCIENCE. A study of the foundations of mathematics with an emphasis on concepts related to theoretical mathematical methods and computer science. Topics include mathematical logic, set theory, algorithms, complexity of algorithms, integers, a variety of proof techniques, program correctness, combinatorics, recurrence relations, graphs and digraphs, trees, Boolean functions, languages and grammars, and finite state machines. Corequisite: Mathematics 162.

Fall semester only, three hours.

MATH 214. APPLIED PROBABILITY AND LINEAR ALGEBRA. An overview of probability and linear algebra, with an emphasis on applications and concepts for computer science. Topics include probability distributions, counting, conditional probability, matrix operations, vector properties, change of bases, Markov chains, and eigenvalues and eigenvectors. Students will not be permitted to receive credit for all three of Math 214, 222, and Math 331. Corequisite: Mathematics 261.

Spring semester only, three hours.

MATH 222. LINEAR ALGEBRA. A study of the theory of matrices and their applications including systems of linear equations, determinants, vector spaces, eigenvalues and eigenvectors, linear transformations, diagonalization, and Gram-Schmidt orthogonalization. Prerequisite: Mathematics 162.

Spring semester only, four hours.

MATH 230. SURVEY OF MATHEMATICS III. This course explores the mathematical topics that form the grades 5-8 curriculum, including ratios and proportions, algebra, relations and functions, geometry, statistics, and probability. Prerequisite: Mathematics 152 or permission of instructor.

Alternate years, fall semester only, three hours.

MATH 232. FINANCIAL MATHEMATICS. This is an introduction to interest theory and the mathematics of investment. The topics include interest rates, valuation of annuities, loan repayment, valuation of bonds, rates of return, term structure, and cash-flow duration and immunization. This course is intended to prepare students for the actuarial exam FM/2. Prerequisites: Mathematics 141 and Accounting 201. Corequisite: Finance 301.

Fall semester only, three hours.

MATH 237. TOPICS FOR MATH EDUCATION. This course will be taught in an independent format covering mathematical material useful for math education majors. Students may only receive credit for this course once. Prerequisite: Mathematics 151 or 152, or permission of instructor.

Semester course, one hour.

MATH 240. MATHEMATICS FOR SECONDARY EDUCATION. A course designed for the secondary teacher candidate in mathematics. Topics covered are history of mathematics; logic; graph theory; proportional reasoning; problem solving and critical thinking; geometry; algebra and functions; and other material applicable to secondary teachers of mathematics. Required for mathematics secondary education majors. Open to elementary and middle level education majors with mathematics concentration. Prerequisite: Mathematics 210, 213, 222, or corequisite with Mathematics 222.

Semester course, three hours.

MATH 260. INDEPENDENT STUDY. Individual study of specialized topics in mathematics. Sophomore standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

MATH 261. CALCULUS III. The final course in the three-semester calculus sequence covering: polar coordinates, vectors and the geometry of three-dimensional space, vector functions, partial derivatives, multiple integrals and vector calculus. This course fulfills in part the Information Literacy (IL) requirement for the Mathematics major. Prerequisite: Mathematics 162.

Semester course, four hours.

MATH 262. DIFFERENTIAL EQUATIONS. A study of the elementary theory and methods for analytic solution of ordinary differential equations, with applications, including first order equations, higher order linear equations, Laplace transform methods, and series solutions (time permitting). Prerequisite: Mathematics 162.

Spring semester only, three hours.

MATH 263. NUMERICAL DIFFERENTIAL EQUATIONS. The study and application of numerical methods for solving differential equations including Euler's method, Runge-Kutta methods, multi-step methods, and solutions of systems of equations. Prerequisite/corequisite: Mathematics 262 or permission of the instructor.

Spring semester only, one hour.

MATH 270. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in mathematics. Sophomore standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

MATH 303. COLLEGE GEOMETRY. This course explores various modern geometries from an axiomatic point of view. Topics such as sets of axioms and finite geometries, Euclidean and non-Euclidean geometries, geometric transformations, and possibly neutral geometry will be thoroughly examined. Prerequisite: Mathematics 210 or 213, and 222.

Spring semester only, three hours.

MATH 305. PUTNAM PROBLEM GROUP. The Putnam Exam is a national undergraduate mathematics competition consisting of 12 challenging problems administered on the first Saturday in December. The course will consist of meeting once a week to work on problems and discuss problem solving strategies. Students not meeting the prerequisite are invited to audit the course. Students may take the course up to four times for credit. Prerequisite: Mathematics 162.

Fall semester only, one hour.

MATH 306. ACTUARIAL MATHEMATICS. An in-depth study of calculus-based probability and statistics topics covered by the Society of Actuaries first actuarial exam, Exam P. Topics include general probability, univariate probability distributions, and multivariate probability distributions with applications to risk and insurance. Students taking this course are required to obtain the recommended review manual and to register for and take Exam P. Students may take this course at most twice for credit. Corequisite: Mathematics 332 and instructor approval.

Semester course, one hour.

MATH 307. INVESTIGATIONS IN MATHEMATICS RESEARCH. An introduction to mathematics research. Teams of two to four students will investigate mathematical phenomena experimentally, detect patterns, create conjectures, and attempt to prove the conjectures and verify the patterns. Students may take this course at most three times for credit. Prerequisite: Mathematics 210 or 213.

Spring semester only, one hour.

MATH 331. THEORY OF STATISTICS I. An introduction to probability and mathematical statistics, including counting techniques; probability spaces; independence; conditional probability; distributions of discrete and continuous random variables; expected values, moments and moment-generating functions; random vectors and their distributions. A computer algebra system is used. Corequisite: Mathematics 261 or permission of instructor.

Fall semester only, three hours.

MATH 332. THEORY OF STATISTICS II. The continued study of mathematical statistics including transformations of random variables and vectors; sampling distributions; the Central Limit

Theorem; properties of point estimates of parameters; maximum-likelihood estimates; confidence intervals; hypothesis testing; contingency tables; simple and linear regression; and one-way analysis of variance. Statistical software and a computer algebra system are used. Prerequisite: Mathematics 331.
Alternate years, spring semester only, three hours.

MATH 360. INDEPENDENT STUDY. An opportunity for junior and senior students, with a minimum of eighteen hours in mathematics, to do intensive independent study of specialized topics. Junior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

MATH 365. COMPLEX VARIABLES. An introduction to the theory of functions of a complex variable including complex numbers; analytic functions; derivatives and integrals of functions of a complex variable; Taylor and Laurent series; and mappings by functions of a complex variable. Prerequisite: Mathematics 261.

Alternate years, fall semester only, three hours.

MATH 370. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in mathematics. Junior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

MATH 390. STUDIES IN MATHEMATICS. A series of lectures/discussions on topics from such areas as combinatorics, number theory, algebra, geometry, statistics, computer applications, analysis, and topology. Prerequisite: Permission of the instructor.

Semester course, one, two or three hours.

MATH 421. ABSTRACT ALGEBRA. An introduction to formal axiomatic systems and the elementary theory of groups and rings. Prerequisite: Mathematics 210 or 213, and 222.

Semester course, three hours.

MATH 422. NUMBER THEORY. This course is, in part, an application of some of the ideas encountered in Math 421. Various results from the theory of finite groups, particularly results about the structure of finite cyclic groups, will be established and used to prove classical results of elementary number theory. The course will also cover arithmetic functions, the structure of Z_n^* , special numbers, and additional topics as time allows. Prerequisite: Mathematics 421.

Alternate years, spring semester only, three hours.

MATH 460. INDEPENDENT STUDY. An opportunity for junior and senior students, with a minimum of eighteen hours in mathematics, to do intensive independent study of specialized topics. Junior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

MATH 465. CLASSICAL ANALYSIS. This course is an introduction to real analysis and includes a rigorous treatment of the structure of the real number system; sequences; limits; continuity; uniform continuity; open and closed sets; compact sets; differentiation; the Riemann integral; and possibly topics from infinite series; sequences and series of functions; pointwise and uniform convergence; and possibly generalizations to n -dimensional or metric spaces. Prerequisites: Mathematics 210 or 213, and Mathematics 261.

Semester course, three hours.

MATH 466. INTERMEDIATE ANALYSIS. A continuation of the study of real analysis through rigorous treatment of material in several of the following areas: metric spaces and continuity; multivariable calculus; convergence and completeness; measure theory; and functional analysis. Prerequisites: Mathematics 222 and 465.

Alternate years, spring semester only, three hours.

MATH 467. TOPOLOGY. This course introduces students to point-set topology: a way of generalizing ideas from geometry and analysis. Topics include basic set theory, topological spaces, bases, metric spaces, continuity, connectedness, separation axioms, convergence, compactness and metrizable. Prerequisites: Mathematics 222 and either Mathematics 210 or 213.

Alternate years, fall semester only, three hours.

MATH 470. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in mathematics. Senior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

MATH 488. SEMINAR IN MATHEMATICS. A course for seniors that includes independent reading and research, student presentations, preparation for the Graduate Record Exam and Major Field Test and faculty lectures on advanced topics in mathematics. This course, in part, satisfies the requirements for a Writing Intensive (WI), Speaking Intensive (SI), and Information Literacy (IL) course for the mathematics major. Prerequisite: Senior standing.

Semester course, two hours.

MATH 499. HONORS IN MATHEMATICS. A course available to junior and senior students on an individual basis. Prerequisite: Consent of the department chair.

Semester course, one, two or three hours.

DEPARTMENT OF MECHANICAL ENGINEERING

Dr. Clauss, Chair; Dr. Bardy, Assistant Chair; Dr. Allison, Dr. E. Anderson, Dr. Archibald, Dr. Dixon, Dr. Fair, Dr. Reuber, Dr. Ulrich.

MECHANICAL ENGINEERING DEPARTMENT MISSION STATEMENT, OBJECTIVES, AND OUTCOMES

Mechanical Engineering (ME) is a broad discipline that develops technological solutions to societal problems in order to benefit mankind. Examples of areas where we find these challenges are transportation, power generation, energy conversion, product design, manufacturing, sustainability, and production. Mechanical engineering education includes such diverse topics as materials science, engineering design and analysis, thermodynamics, solid and fluid mechanics, heat transfer, manufacturing processes, system dynamics, teamwork, and project management. Our graduates apply their skills to a vast array of problems. For instance, mechanical engineers develop renewable energy systems, new medical devices, more fuel-efficient automobiles, climate control systems for buildings, and so on. Mechanical engineers enjoy employment in a wide variety of areas including research, design, manufacturing, production, technical marketing and sales, and management. At Grove City College, we strive to develop our students' God given talents and abilities so that they may better serve the world around them.

The ME Department at Grove City College offers a program leading to the Bachelor of Science in Mechanical Engineering (BSME) degree. The program is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>.

Mechanical engineers must be proficient at both oral and written communications to communicate their solutions and designs with other engineers and society in general. Toward that end, the ME curriculum incorporates Writing Intensive (WI), Speaking Intensive (SI), and Information Literacy (IL) instruction within the core course requirements.

The mission of our program is to produce graduates who can pursue leadership roles in the mechanical engineering profession. The following program educational *objectives* enable GCC mechanical engineers to meet this mission in the years following graduation:

1. Graduates will be successfully employed in the mechanical engineering profession or in an alternative field. Many of our graduates will assume leadership roles in these positions and be recognized as effective communicators and team members.
2. Graduates will engage in life-long learning through self-study, employer sponsored continuing education courses or workshops, or through formal graduate level education leading to an advanced degree.

3. Graduates will demonstrate ethical behavior in the workplace and will carry out their professional duties in a manner that is consistent with a Christian worldview.

Our graduates possess the following student *outcomes* upon graduation:

1. An ability to identify, formulate, and solve complex problems applying principles of engineering, science, and mathematics.
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
3. An ability to communicate effectively with a range of audiences.
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

These outcomes are met over a 4-year curriculum that starts with an exposure to the fundamentals of science and engineering and culminates in our senior capstone design experience.

Freshman Year—Introduction to the fundamentals of chemistry, physics, calculus, engineering computations, the profession of engineering, and the design process.

Sophomore Year—Emphasis on the analysis of problems in statics, dynamics, materials science, and thermodynamics, and on the design and manufacturing process; students are exposed to modern machine shop practice through the fabrication of an individual project involving machining, fabrication, and assembly. They also learn to use Creo, a state-of-the-art CAD tool.

Junior Year—Analysis skills are honed in engineering math, circuit analysis, fluid mechanics, heat transfer, and mechanics of materials. Sound experimental and design techniques are reinforced in the required laboratory sequence. Students receive a solid grounding in dynamic systems analysis and simulation, machine design, and stress analysis. Opportunities for international study and travel are offered through our partnership with affiliated universities in Nantes, France.

Senior Year—A major, year-long capstone design experience includes the design and realization of an engineering product. Extensive computer-aided design and manufacturing includes the use of Creo to document, analyze and fabricate designs. Advanced manufacturing techniques covered include conventional and investment casting, injection molding, CNC machining, and TIG/MIG welding. To assure the ability to work professionally, seniors must complete at least 13 hours of Mechanical Engineering electives, choosing a minimum of three credit hours in a given system area. In addition, at least six credit hours must be 400-level courses and a maximum of 4 credit hours may be earned through one and two credit courses.

Thermal Systems electives:

MECE 321 Advanced Thermodynamics

MECE 391 Special Mechanical Engineering Topics

MECE 414 Principles of HVAC

MECE 416 Survey of Alternative Energy Systems
MECE 421 Applied Fluid Mechanics
MECE 499 Honors in Mechanical Engineering
ENGR 320 Separation Processes

Mechanical Systems electives:

MECE 303 Computer-Aided Manufacturing
MECE 390 Special Mechanical Engineering Topics
MECE 407 Control Systems
MECE 408 Mechanical Vibrations
MECE 410 Kinematics and Dynamics of Machinery
MECE 415 Finite Element Analysis
MECE 418 Human-Powered Vehicle Design
MECE 428 Biomechanics
MECE 498 Honors in Mechanical Engineering
ENGR 390 Special Topics in Engineering
ROBO 301 Introduction to Robotics
ROBO 302 Mobile Robots

Thermal Systems or Mechanical Systems electives:

MECE 331 Engineering Management and Cross-Cultural Communication
MECE 260 Independent Study
MECE 360 Independent Study
MECE 460 Independent Study
MECE 270 Independent Research
MECE 370 Independent Research
MECE 470 Independent Research
ENGR 301 Ethics in Engineering and Robotics

NOTE: Additional electives may be offered at the discretion of the department.

Course Requirements for Bachelor of Science Degree in Mechanical Engineering (MECE)—100 hours

Mechanical Engineering Core (48 hours)

Mechanical Engineering 107, 109, 120, 201, 210, 211, 212, 214, 251, 252, 311, 312, 316, 325, 326, 351, 352, 401; Mechanical Engineering or Robotics 451 and 452.

Engineering Core (6 hours)

Engineering 156, 402, and Electrical Engineering 210.

Math/Science Core (33 hours)

Chemistry 105*; Engineering 274**; Mathematics 161, 162, 261, 262; Physics 101, 102; and one math/science elective chosen from Astronomy 206, 207; Biology 101, 102; Chemistry 102, 227, 241, 345; Mathematics 210, 213, 222, 331; or Physics 234.

Mechanical Engineering Electives (13 hours)

Choose a minimum of three hours from each system area, for a total of 13 hours. At least six hours must be 400-level courses and a maximum of 4 credit hours may be earned through one and two credit courses.

Thermal Systems electives

Mechanical Engineering 321, 391, 414, 416, 421, 499, or Engineering 320.

Mechanical Systems electives

Mechanical Engineering 303, 390, 407, 408, 410, 415, 418, 428, 498, Engineering 390, Robotics 301 or 302.

Thermal Systems or Mechanical Systems electives***

Mechanical Engineering 260, 270, 331, 360, 370, 460, 470, or Engineering 301.

*Students who take Chemistry 101 and 102 are exempt from the Chemistry 105 requirement.

**Students who complete Mathematics 213, 222, and 331 are exempt from the Engineering 274 requirement.

***A combined total of up to three credit hours for independent study, independent research, faculty-mentored research, and honors courses can be applied towards the Mechanical Engineering elective requirements.

Courses that count in the MECE major quality point average (MQPA):

All courses with "MECE" and "ROBO" prefix; ELEE 210; ENGR 156, 320, 390, and 402. A minimum MQPA of 2.00 is required to graduate.

**MECHANICAL ENGINEERING (MECE) MAJOR
FOUR-YEAR PLAN**

	1st	2nd		1st	2nd
<u>FRESHMAN YEAR</u>	<u>Sem.</u>	<u>Sem.</u>	<u>SOPHOMORE YEAR</u>	<u>Sem.</u>	<u>Sem.</u>
Chemistry 105	4	-	Mathematics 261-262	4	3
Engineering 156	-	2	Mech. Engineering 201	3	-
Mathematics 161-162	4	4	Mech. Engineering 210	-	3
Mech. Engineering 107	2	-	Mech. Engineering 211-212	3	3
Mech. Engineering 109	2	-	Mech. Engineering 214	-	3
Mech. Engineering 120	-	3	Mech. Engineering 251-252	1	1
Physics 101	-	4	Physics 102	4	-
HUMA 102 - WRIT 101	3	3	SSFT course	2	-
Physical Education	<u>1</u>	<u>1</u>	Humanities 202	<u>-</u>	<u>3</u>
	16	17		17	16
<u>JUNIOR YEAR</u>			<u>SENIOR YEAR</u>		
Elec. Engineering 210	-	3	Engineering 402	-	1
Engineering 274	3	-	Mech. Engineering 401	3	-
Math/Science Elective	3	-	Mech. Engineering 451-452	1	3
Mech. Engineering 311-312	3	3	Mech. Engineering Electives	9	4
Mech. Engineering 316	-	3	Humanities 301-303	3	3
Mech. Engineering 325-326	3	3	General Elective	<u>-</u>	<u>3</u>
Mech. Engineering 351-352	1	1		16	14
Social Science Course	-	3			
Humanities 200	<u>3</u>	<u>-</u>			
	16	16			

Course Requirements for a minor in Robotics (19-20 hours)

A minor in Robotics will consist of Robotics 301, 302; Engineering 301; a 3-4 credit robotics-related capstone project; and nine hours from Computer Science 445, Electrical Engineering 310, Mechanical Engineering 316, Mechanical Engineering 410, Electrical Engineering 421 or Mechanical Engineering 407, or Electrical Engineering 422.

Course Requirements for a minor in Chemical Engineering (19-20 hours)

A minor in Chemical Engineering will consist of Engineering 220, 320, 420; Mechanical Engineering 325, 326, 352; and one of Mechanical Engineering 214, Chemistry 346, or Physics 340.

Students are expected to contact their advisors for a detailed schedule of courses recommended to meet requirements for a major.

ENGINEERING CORE COURSES (ENGR)

ENGR 156. INTRODUCTION TO ENGINEERING. Introduces students to the engineering profession and the design process. Course lectures and assignments include the design process; problem definition and solution; oral and written communications; group dynamics; public responsibility; current global engineering challenges; and engineering ethics. A group design project is required. For electrical engineering students, this course is taken concurrently with Computer Science 141. For mechanical engineering students, this course is taken concurrently with Mechanical Engineering 120.

Semester course, two hours.

ENGR 220. CHEMICAL ENGINEERING FUNDAMENTALS. This course prepares students to formulate and solve material and energy balances on chemical process systems. Examples are drawn from a variety of industries, including pharmaceutical, food processing, and petrochemical. Prerequisites: Chemistry 102 or 105; and Mathematics 161.

Alternate years, spring semester only, three hours.

ENGR 274. MATHEMATICAL METHODS IN ENGINEERING. A course for engineering and science majors covering selected topics in probability and statistics, linear algebra, discrete mathematics, and numerical methods as applied to the solution of problems in engineering and science. Students who receive credit for Mathematics 213, 222, and 331 may not receive credit for Engineering 274. Prerequisite: Mathematics 261.

Semester course, three hours.

ENGR 301. ETHICS IN ENGINEERING AND ROBOTICS. This course investigates ethical decision-making from a Christian perspective as it applies to engineering and robotics. It includes an overview of approaches to ethical decision-making, as well as particular issues raised by the robotics field, such as robots making military decisions, privacy issues with in-home robots, issues with emotional bonds, etc.

Semester course, one hour.

ENGR 320. SEPARATION PROCESSES. The course provides the fundamentals of mass transfer and separation processes related to chemical engineering applications. Topics include distillation, absorption, stripping, and membrane separation. Examples are drawn from a variety of applications, including bioprocessing and nanotechnology. Prerequisites: Engineering 220 and one of Mechanical Engineering 214, Chemistry 346, or Physics 340.

Alternate years, fall semester only, three hours.

ENGR 390. SPECIAL ENGINEERING TOPICS. Special topics in the areas of new engineering development based on student demand and faculty interest. Specific subject matter varies each semester with prerequisites and credit hours announced in advance of registration.

Semester course, one, two, three or four hours.

ENGR 402. ENGINEERING ECONOMY. Principles and methods for analyzing the economic feasibility of engineering projects including interest, depreciation, rate-of-return, economic life, replacement costs, and comparison of alternative designs. Prerequisite: Mathematics 141 or 161. Corequisite: Mechanical Engineering 452, Electrical Engineering 452, or Robotics 452.

Spring semester only, one hour.

ENGR 420. CHEMICAL REACTION ENGINEERING. This course introduces students to the fundamentals of chemical reaction engineering, including reactor sizing and design. Topics include rate laws, kinetics, isothermal and nonisothermal reactor design, and homogeneous and heterogeneous reaction systems. Prerequisite: Engineering 320. Corequisite: Mechanical Engineering 326.

Alternate years, spring semester only, three hours.

ENGR 480. INTERNSHIP IN ENGINEERING. An opportunity for junior or senior engineering majors to participate in an extended work experience (six months or more) under the supervision of an on-site manager and a department faculty member. Products of the internship will include an evaluation by the on-site manager, a journal of the internship experience, and a paper describing the experience

and relating it to academic theory. This course may be repeated a maximum of three times. Prerequisite: Permission from the department chair. *Semester course, one hour.*

MECHANICAL ENGINEERING (MECE)

MECE 107. ENGINEERING GRAPHICS. A study of the principles of engineering drawing, including detailed part drawings. Students will learn to read and create detailed technical drawings. Topics include orthographic and pictorial views, section views, and auxiliary views. Dimensioning and tolerancing in accordance with ANSI Y14.5, including geometric dimensioning and tolerancing is emphasized. *Fall semester only, two hours.*

MECE 109. INTRO TO SOLID MODELING. An introduction to basic CAD modeling. Students will be introduced to mechanical engineering terminology and mechanical components such as screws, gears, shafts, etc. An introduction to CAD solid modeling with Creo, including basic part and assembly models is also included. A small design project will introduce CAD design tools, including additive manufacturing. *Fall semester only, two hours.*

MECE 120. NUMERICAL COMPUTING FOR MECHANICAL ENGINEERS. This course introduces students to applied numerical computation, with an emphasis on solving typical mechanical engineering problems. Sequential logic programming is taught using MATLAB. Topics include array and scalar operators, program control elements, graphic and text I/O, internal and user-defined functions. Students are introduced to numerical methods such as root finding, solutions to systems of linear equations, linear regression, and numerical integration and differentiation. Corequisites: Mathematics 161 and Physics 101. *Semester course, three hours.*

MECE 201. FUNDAMENTALS OF MATERIALS SCIENCE. Models of crystalline and molecular structures are presented to explain the diverse properties of metallic; polymeric and ceramic materials; including atomic bonding and crystal structure; elastic and plastic deformation; phase of equilibria and transformation; thermal processing; and corrosion. Prerequisite: Chemistry 105. *Fall semester only, three hours.*

MECE 210. DESIGN FOR MANUFACTURING. Introduction to manufacturing processes, including part characteristics, economic production quantities, materials, and design recommendations. Emphasis is placed on process and material selection and design for manufacturability. The course includes plant tours. Prerequisites: Mechanical Engineering 107, 109, and 201. *Spring semester only, three hours.*

MECE 211. MECHANICS I. Static equilibrium of particles and rigid bodies; analysis of structures, trusses, and cables; friction; centroids and moments of inertia; methods of virtual work; and energy are addressed. Engineering applications are also incorporated. Prerequisites: Mathematics 162, Mechanical Engineering 120, and Physics 101. *Fall semester only, three hours.*

MECE 212. MECHANICS II. A study of rectilinear and curvilinear motion of particles and rigid bodies; kinetics of particles and rigid bodies; relative motion, work, and energy; impulse and momentum are taught along with engineering applications. Prerequisite: Mechanical Engineering 211. *Spring semester only, three hours.*

MECE 214. THERMODYNAMICS. The study of the fundamental principles and some applications of classical thermodynamics. Topics include properties of pure substances; heat, work, and mass transfer; first law of thermodynamics; second law of thermodynamics; entropy; gas power cycles; vapor power cycles; and refrigeration cycles. Prerequisite: Mathematics 261. *Spring semester only, three hours.*

MECE 251. MECHANICAL SYSTEMS LABORATORY I. A lab course designed to introduce students to engineering practices including dimensioning, gaging and measuring, machining operations, manufacturing processes, and engineering standards for fasteners, threads, etc. Hands-on application will be taught through an individual project involving machining, fabrication, and

assembly. Materials testing laboratories are also part of this course. Mechanical Engineering 251 is designed to fulfill the requirements for an Information Literacy (IL) course in the Mechanical Engineering major. Prerequisite: Sophomore standing in mechanical engineering.

Fall semester only, one hour.

MECE 252. MECHANICAL SYSTEMS LABORATORY II. A lab course designed to introduce students to engineering experimental techniques, including planning, controls, basic instrumentation, and basic data analysis. Prerequisites: Sophomore standing in mechanical engineering and Mechanical Engineering 251.

Spring semester only, one hour.

MECE 260. INDEPENDENT STUDY. Individual study of specialized topics in mechanical engineering. Sophomore standing, permission of the department chair, and a faculty sponsor are required. A combined total of up to three credit hours for independent study, independent research, and honors courses can be applied towards the Mechanical Engineering elective requirements.

Semester course, one, two or three hours.

MECE 270. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in mechanical engineering. Sophomore standing, permission of the department chair, and a faculty sponsor are required. A combined total of up to three credit hours for independent study, independent research, and honors courses can be applied towards the Mechanical Engineering elective requirements.

Semester course, one, two or three hours.

MECE 303. COMPUTER-AIDED MANUFACTURING. Introduction to computer-aided manufacturing using Creo CAD/CAM software. Students will learn to program CNC machine tools, including three axis mills, lathes, and wire EDM machines, as well as basic pattern and mold design for sand casting, injection molding, and vacuum forming. Prerequisite: Mechanical Engineering 107 and 109.

January intersession only, three hours.

MECE 311. MECHANICS OF MATERIALS. Fundamentals of mechanics of materials, including stress and strain; axial loading; Hooke's Law and Poisson's ratio; torsion; bending; transverse loading; stress and strain transformations; beam analysis; and buckling. Prerequisites: Mathematics 262 and Mechanical Engineering 210 and 212.

Fall semester only, three hours.

MECE 312. STRESS ANALYSIS AND DESIGN OF MACHINE COMPONENTS. Application of stress analysis to static, fatigue, and surface fatigue failures. Design of shafts, including limits and fits and bearing selection. Design and selection of machine elements such as screws, bolted joints, springs, gears, brakes, etc. Prerequisite: Mechanical Engineering 311.

Spring semester only, three hours.

MECE 316. SYSTEM DYNAMICS. Modeling and analysis of dynamic systems consisting of mechanical, electrical, and electromechanical elements. Development of system models using transfer functions, block diagrams, and state variable methods. System analysis in the time and frequency domains. Includes MATLAB/Simulink simulations. Prerequisites: Mathematics 262 and Mechanical Engineering 212; or Physics 303 and either Mechanical Engineering 120 or Computer Science 141.

Spring semester only, three hours.

MECE 321. ADVANCED THERMODYNAMICS. Application of thermodynamic principles. Topics include reviewing equations of state, properties, conservation of mass, conservation of energy, second law of thermodynamics, and cycles; exergy; property relationships; gas and gas-vapor mixtures; air conditioning; chemical reactions; chemical and phase equilibrium; and compressible-fluid flow. Prerequisite: Mechanical Engineering 214.

Fall semester only, three hours.

MECE 325. FLUID MECHANICS. The study of steady and unsteady flow of primarily incompressible fluids; the application of the conservation laws of mass, momentum, and energy to fluid systems; the control volume approach to distributed systems; and the application of experimental techniques to problems. Prerequisites: Mathematics 262; and Mechanical Engineering 211 or Physics 303 (for majors) or Physics 121 (for non-majors).

Fall semester only, three hours.

MECE 326. HEAT TRANSFER. The fundamentals of heat transfer by conduction, convection, and radiation; application to practical heat transfer devices; engineering analysis of heat exchangers; and design problems solved by analytical, numerical, and computer methods. Prerequisites: Mechanical Engineering 214, Physics 340, or Chemistry 346; and Mechanical Engineering 325.

Spring semester only, three hours.

MECE 331. ENGINEERING MANAGEMENT & CROSS-CULTURAL COMMUNICATION. Introduction to the tools needed to manage technical projects in an international setting including (1) cross-cultural communication/management, with a special emphasis on French vs. U.S. language/culture, and (2) selected introductory engineering management and design process topics. Classroom lectures and case studies are supplemented with cultural field trips and interaction with French engineering students taking this class. Open to all GCC students studying in France; facilitated by the GCC European Study Center (ESC) and the University of Nantes (ONIRIS) in Nantes, France. This course can be used to satisfy a portion of the mechanical systems or thermal systems elective requirements in Mechanical Engineering.

Fall semester only, three hours.

MECE 351. INSTRUMENTATION LABORATORY. A lab course that reinforces the lab techniques introduced in Mechanical Engineering 251-252. Experiments chosen from strain analysis, first and second order systems, and vibration analysis. Mechanical Engineering 351 is designed to fulfill the requirements for a Writing Intensive (WI) course in the Mechanical Engineering major. Prerequisite: Mechanical Engineering 252. Corequisite: Mechanical Engineering 311.

Fall semester only, one hour.

MECE 352. THERMAL/FLUIDS LABORATORY. A lab course that reinforces the lab techniques introduced in Mechanical Engineering 251-252. Experiments chosen from thermodynamics, fluid mechanics, and heat transfer. Prerequisite: Junior or senior standing in mechanical engineering. Corequisite: Mechanical Engineering 326.

Spring semester only, one hour.

MECE 360. INDEPENDENT STUDY. Individual study of specialized topics in mechanical engineering. Junior standing, permission of the department chair, and a faculty sponsor are required. A combined total of up to three credit hours for independent study, independent research, and honors courses can be applied towards the Mechanical Engineering elective requirements.

Semester course, one, two or three hours.

MECE 370. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in mechanical engineering. Junior standing, permission of the department chair, and a faculty sponsor are required. A combined total of up to three credit hours for independent study, independent research, and honors courses can be applied towards the Mechanical Engineering elective requirements.

Semester course, one, two or three hours.

MECE 390. SPECIAL MECHANICAL ENGINEERING TOPICS. Special topics in mechanical engineering based on student demand and faculty interest. Specific subject matter varies each semester with prerequisites and credit hours announced in advance of registration. This course can be used to satisfy a portion of the mechanical systems elective requirements in Mechanical Engineering.

Semester course, one, two, three or four hours.

MECE 391. SPECIAL MECHANICAL ENGINEERING TOPICS. Special topics in mechanical engineering based on student demand and faculty interest. Specific subject matter varies each semester with prerequisites and credit hours announced in advance of registration. This course can be used to satisfy a portion of the thermal systems elective requirements in Mechanical Engineering.

Semester course, one, two, three or four hours.

MECE 401. CAPSTONE DESIGN I. Completion of the senior design project. A study of the principles and methods of designing mechanical engineering systems in today's society, including the design process; decision making in design; engineering economics; analysis and verification of performance; and environmental impact. Prerequisite: Senior standing in mechanical engineering. Corequisite: Mechanical Engineering 451.

Fall semester only, three hours.

MECE 407. CONTROL SYSTEMS. A study of the design and analysis of feedback control systems. Topics include: modeling of dynamic systems (mechanical, electro-mechanical, thermal and fluid), a review of Laplace transform techniques, steady-state error, stability, root locus design methods, Bode analysis/stability margins, and Bode compensator design. Introduction to state-space techniques and the digital implementation of controllers. Includes MATLAB/Simulink simulations. Prerequisites: Electrical Engineering 210, Engineering 274, and Mechanical Engineering 316.

Fall semester only, three hours.

MECE 408. MECHANICAL VIBRATIONS. A study of the dynamic response of lumped parameter systems with one and two degrees of freedom subjected to periodic and non-periodic excitation; applications to the control of undesirable vibrations in machines; theory of seismic instruments; and an introduction to distributed parameter systems. Prerequisites: Mechanical Engineering 311 and 316.

Fall semester only, three hours.

MECE 410. KINEMATICS AND DYNAMICS OF MACHINERY. Modeling, analysis, and design of linkages, cams, and gear trains, including machine dynamics. Introduction to dynamic systems modeling using computer-aided analysis, including Creo. Prerequisite: Mechanical Engineering 311.

Spring semester only, three hours.

MECE 414. PRINCIPLES OF HEATING, VENTILATING, AND AIR CONDITIONING. Analysis and design of components and systems used to condition air in buildings. Topics include air-conditioning systems, psychrometrics, conditioning processes, indoor air quality, heat transfer, solar radiation, heating loads, cooling loads, annual energy usage, pumps and piping, fans and ducts, and refrigeration equipment. Prerequisite: Mechanical Engineering 326.

Fall semester only, three hours.

MECE 415. FINITE ELEMENT ANALYSIS. A study of the finite element method and its application to mechanical engineering problems. Topics include basic concepts; stiffness matrices; truss structures; flexure elements; method of weighted residuals; interpolation functions; and applications to heat transfer, fluid mechanics, solid mechanics, and structural dynamics. Prerequisites: Engineering 274, Mechanical Engineering 312 and 326.

Fall semester only, three hours.

MECE 416. SURVEY OF ALTERNATIVE ENERGY SYSTEMS. A survey of the technical and social aspects of alternative and renewable energy systems. Topics include hydropower, wind energy, solar power, biomass, fuel cells and hydrogen economy, nuclear power, and geothermal and ocean energy. Prerequisite: Mechanical Engineering 326.

Spring semester only, three hours.

MECE 418. HUMAN-POWERED VEHICLE DESIGN. Computer-aided modeling, analysis, and design of human-powered vehicles for land, water, and air. Includes analysis of vehicle dynamics and handling, performance predictions, and CAD-based design tools integrating dynamic models with Creo models. Corequisites: Mechanical Engineering 311 and 325.

Fall semester only, three hours.

MECE 421. APPLIED FLUID MECHANICS. Advanced treatment and application of the equations and empirical data that describe fluid phenomena in both internal and external fluid systems. Introduction to techniques important to research and design in fluid applications, specifically computational and experimental fluid dynamics. Topics include superposition of potential flows, added mass, hydrodynamic stability, boundary layer flow, bearings, turbomachinery, turbulence, non-Newtonian fluids, compressible flow, and biofluid dynamics. Prerequisite: Mechanical Engineering 326.

Fall semester only, three hours.

MECE 428. BIOMECHANICS. The course will explore the key topics within the contemporary field of biomechanics—the application of mechanics to biological systems—with the goal of preparing students for further work in cutting-edge fields such as biomedical engineering, novel propulsion systems, and other biologically-inspired engineering. Topics to be covered include biomaterials, mechanical properties of biological structures, biomimetic robotics, terrestrial locomotion, swimming, flying, prosthetics, external and internal fluid flows, efficiency, blood flow, biomedical instrumentation, experimental techniques, strain gauges, flow visualization, and special topics selected

by students. Prerequisites: Mechanical Engineering 311 and 325, or Physics 232, or Mathematics 161 and Physics 121 and Biology 102. *Spring semester only, three hours.*

MECE 451. CAPSTONE DESIGN LABORATORY I. An advanced lab course where students learn techniques and engage in experiments relating to their senior group design project. Written reports and oral presentations are required. Prerequisites: Senior standing in engineering or permission of instructor. *Fall semester only, one hour.*

MECE 452. CAPSTONE DESIGN LABORATORY II. An advanced lab course requiring student teams to complete their group design project. Written reports and oral presentations are required. Mechanical Engineering 452 is designed to fulfill the requirements for a Speaking Intensive (SI) course in the Mechanical Engineering major. Prerequisite: Senior standing in engineering and one of Electrical Engineering, Mechanical Engineering, or Robotics 451. *Spring semester only, three hours.*

MECE 460. INDEPENDENT STUDY. Individual study of specialized topics in mechanical engineering. Senior standing, permission of the department chair, and a faculty sponsor are required. A combined total of up to three credit hours for independent study, independent research, and honors courses can be applied towards the Mechanical Engineering elective requirements. *Semester course, one, two or three hours.*

MECE 470. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in mechanical engineering. Senior standing, permission of the department chair, and a faculty sponsor are required. A combined total of up to three credit hours for independent study, independent research, and honors courses can be applied towards the Mechanical Engineering elective requirements. *Semester course, one, two or three hours.*

MECE 498. HONORS IN MECHANICAL ENGINEERING. Seniors (and in some instances, juniors) who have shown special aptitude in mechanical engineering may, with consent of the department, undertake special research and design problems. This course may be used to satisfy a portion of the mechanical systems elective requirements in Mechanical Engineering. A combined total of up to three credit hours for independent study, independent research, and honors courses can be applied towards the Mechanical Engineering elective requirements. Cannot be repeated for more than a total of three credit hours. *Semester course, one, two or three hours.*

MECE 499. HONORS IN MECHANICAL ENGINEERING. Seniors (and in some instances, juniors) who have shown special aptitude in mechanical engineering may, with consent of the department, undertake special research and design problems. This course may be used to satisfy a portion of the thermal systems elective requirements in Mechanical Engineering. A combined total of up to three credit hours for independent study, independent research, and honors courses can be applied towards the Mechanical Engineering elective requirements. Cannot be repeated for more than a total of three credit hours. *Semester course, one, two or three hours.*

ROBOTICS (ROBO)

ROBO 301. INTRODUCTION TO ROBOTICS. Presents the fundamentals of robot mechanisms, kinematics, dynamics, and controls. Topics include forward and inverse kinematics, differential motion and velocities, dynamics and force control, path and trajectory planning, actuators and drive systems, and sensors used in robotic systems. The basics of robotic control systems are briefly presented. The use of vision systems in robotics is introduced. Two lectures and one lab per week. Prerequisite: Electrical Engineering 321 or Mechanical Engineering 316. *Fall semester only, three hours.*

ROBO 302. MOBILE ROBOTS. An introduction to the basic principles of mobile robots, including mechanical, sensory, and cognitive systems necessary for successful operation. Topics will include hardware, locomotion, sensors, control schemes, localization, and navigation. Hands-on lab experiences with real robots and a final project supplement lecture material. Two lectures and one lab

per week. Prerequisites: Physics 101; Mathematics 261; and Engineering 274 or Mathematics 214.
Spring semester only, three hours.

ROBO 451. CAPSTONE DESIGN PROJECT I. An advanced lab course where students learn techniques and engage in experiments relating to their senior group design project. Written reports and oral presentations are required. Prerequisite: Senior standing in engineering or permission of the instructor.
Fall semester only, one hour.

ROBO 452. CAPSTONE DESIGN PROJECT II. An advanced lab course requiring student teams to complete their group design project. Written reports and oral presentations are required. Robotics 452 is designed to fulfill the requirements for the Speaking Intensive (SI) course in the Electrical and Computer Engineering or Mechanical Engineering major. Prerequisite: Senior standing in engineering and one of Electrical Engineering, Mechanical Engineering, or Robotics 451.
Spring semester only, three hours.

DEPARTMENT OF MODERN LANGUAGES

Dr. Harmon, Chair; Dr. Forteza, Mrs. Madsen, Dr. Quintero, Dr. Su, Dr. Tinkey. Adjunct: Mrs. Ligo. Additional Instructional Faculty: Mrs. Reuber.

Course Requirements for Bachelor of Arts Degree in French (FREN)—30 hours

French Core Requirements (30 hours):

French 201 and 202, or two 300-level French electives (excluding French 362); French 301; 305 or 340; French 307 or 309; 308; two French literature courses; and two French electives (six hours) at the 300-level (excluding French 362).

Courses that count in the FREN major quality point average (MQPA):

All courses with “FREN” prefix, excluding FREN 101 and FREN 102. A minimum MQPA of 2.00 is required to graduate.

Course Requirements for a Bachelor of Arts Degree in French and K-12 Education Certification (FSED)—75 hours

French Core Requirements (32 hours):

French 201 and 202, or two 300-level French electives; French 301; 305 or 340; French 307 or 309; 308; 362; two French literature courses; and two French electives (six hours) at the 300-level.

Education Core (43 hours):

Education 202, 203, 204, 305, 307, 371, 372, 373, 431, 488; Psychology 102; and Special Education 101.

Course Requirements for Bachelor of Arts Degree in Spanish (SPAN)—33 hours

Spanish Language Core Requirements (15 hours):

Spanish 295 or 301; Spanish 303, 305, 306, and 340.

Literature and Culture Core Requirements (15 hours):

Spanish 424; two courses from Spanish 330, 331, or 333; and two courses from Spanish 321, 325, 328.

Spanish Elective (3 hours):

Any 300- or 400-level Spanish course (excluding Spanish 362).

Courses that count in the SPAN major quality point average (MQPA):

All courses with “SPAN” prefix, excluding SPAN 101, 102, 201 and 202. A minimum MQPA of 2.00 is required to graduate.

Course Requirements for a Bachelor of Arts Degree in Spanish and K-12 Education Certification (SSED)—78 hours

Spanish Language Core Requirements (17 hours):

Spanish 295 or 301; Spanish 303, 305, 306, 340, and 362.

Literature and Culture Core Requirements (15 hours):

Spanish 424; two courses from Spanish 330, 331, or 333; and two courses from Spanish 321, 325, 328.

Spanish Elective (3 hours):

Any 300- or 400-level Spanish course.

Education Core (43 hours):

Education 202, 203, 204, 305, 307, 371, 372, 373, 431, 488; Psychology 102; and Special Education 101.

International Business Major

This program leads to a Bachelor of Science degree, combining business and modern language studies. Consult the Department of Management and Marketing for program requirements.

Classical Languages

Consult the Department of Biblical and Religious Studies and Philosophy for Biblical Hebrew, New Testament Greek, and Latin course descriptions as well as the requirements for the Classical Studies minor.

Writing Intensive/Speaking Intensive/Information Literacy Studies

The Department of Modern Languages stresses the acquisition of skills in speaking, writing, and analysis/research. The following courses are designated as Writing Intensive (WI), Speaking Intensive (SI), and Information Literacy (IL): French 307, 309 (WI); French 305, 340 (SI); French 320, 321, 325, 326, 330, 331, 332 (IL) for the French major; and Spanish 303 (SI); Spanish 321, 325, 328, 330, 331, 333 (WI) and (IL) for the Spanish major.

Course Requirements for a minor in Chinese (18 hours)

A minor in Chinese will consist of 18 hours of Chinese courses beyond Chinese 101 and 102, including Chinese 201, 202, and 301; and at least one of Chinese 302, 390 (Chinese Conversation), or 390 (Advanced Chinese Conversation). Six additional credit hours may be selected from English 205 (World Literature: Asia), Music 330 (World Music: Asia and the Middle East), Political Science 344 (Asian Politics) or any other 200-level or higher Chinese electives.

Course Requirements for a minor in French (18 hours)

A minor in French will consist of 18 hours of French courses beyond French 101 and 102, excluding French 362.

Course Requirements for a minor in Spanish (18 hours)

A minor in Spanish will consist of 18 hours of Spanish courses beyond Spanish 201 and 202, including Spanish 295 or 301; Spanish 303; Spanish 305 or 340; one Spanish literature and culture course (Spanish 320, 330, or 331); one Latin American literature and culture course (Spanish 321, 325, or 328); and three hours of 300 or 400-level Spanish electives, excluding Spanish 362.

Course Requirements for a minor in Spanish for the Professions (18 hours)

A minor in Spanish for the Professions will consist of 18 hours of Spanish courses beyond Spanish 201 and 202, including Spanish 295 or 301; Spanish 303, 306, and 315; Spanish 316 or 317; and one literature and culture course (Spanish 319, 320, 321, 325, 326, 327, 328, 330, 331, or 333).

Language Placement Guidelines

Students enrolling in a modern language course at Grove City College who have not taken the Advanced Placement exam or a college-level course in the language must first take a placement test to determine their appropriate level. After their initial placement, students' progress into advanced classes will be determined by successful completion of the prerequisites.

Students may take the placement exam at most twice and are expected to adhere to Grove City College's Academic Integrity Policy. That is, the work should be the student's own and should not contain that which has been knowingly obtained from another. The use of notes, dictionaries, translating tools, textbooks, and all other forms of assistance during the placement test are prohibited.

Note: Language study is progressive and sequential. For example, 101 must be followed by 102, 102 by 201, and 201 by 202.

Study Abroad

Study abroad is strongly encouraged for language majors. Selection of a program and of specific courses takes place in consultation with the Office of International Education, the Chair of the Department of Modern Languages, individual modern language advisors, and the Registrar. Detailed information about the Grove City College Study Abroad program is available by accessing www.gcc.edu/academics/oie. Language majors seeking assistance regarding program options, transfer of credits, application forms, deadlines, letters of recommendation, and other matters related to study abroad may contact the Modern Languages Department Chair.

Students are expected to contact their advisors for a detailed schedule of courses recommended to meet requirements for a major.

CHINESE (CHIN)

CHIN 101. ELEMENTARY CHINESE I. This first-year course is designed to lay a foundation for those who are interested in using Mandarin Chinese as a linguistic tool to communicate and further appreciate the Chinese culture. It aims at developing learners' overall competence in speaking, listening, reading, writing, and cultural awareness with special emphasis on oral-aural skills for those with little or no experience in the Chinese language. *Fall semester only, three hours.*

CHIN 102. ELEMENTARY CHINESE II. This first-year course is designed to continue to lay the groundwork for the study of Mandarin Chinese. It aims to continue development of the learners' overall Chinese competence in speaking, listening, reading, writing, and intercultural communication with special emphasis on oral-aural skills. Prerequisite: Chinese 101. *Spring semester only, three hours.*

CHIN 105. BUSINESS CHINESE I. A beginning Mandarin Chinese course with special focus on business communication. The first level of a three-level series, the course covers basic daily corporate interactions and business-related social exchanges such as: socializing, establishing and maintaining good relations (*guānxì*, a key word for doing business in Asia), scheduling meetings, visiting a company, inquiring about products, business etiquette, etc. Christian values will be integrated throughout the course. It is designed for learners with no prior knowledge of the Chinese language and culture. Ample authentic materials are provided for learners to visualize contemporary China. Classes

are conducted mainly in Chinese, with clear grammatical and cultural highlighting in English. Students will be assigned to perform simple tasks to enhance language use.

Offered periodically, semester course, three hours.

CHIN 201. INTERMEDIATE CHINESE I. This second-year course is designed to build on the foundation of first year Chinese to help learners achieve greater fluency in the spoken and written use of the Chinese language, as well as to increase vocabulary and familiarity with common sentence patterns. Prerequisite: Chinese 102 or by permission.

Fall semester only, three hours.

CHIN 202. INTERMEDIATE CHINESE II. This second-year course is designed to further develop learners' overall language proficiency. The students will achieve the following: an understanding of simple paragraph-length utterances and longer stretches of some connected discourses on a number of topics beyond basic survival needs; an ability to successfully handle most social situations and support one's opinions using simple discourse strategies; read simple connected texts consistently and with full comprehension; write short letters, brief synopses, summaries, biographical data of work and school experiences in some detail. Prerequisite: Chinese 201 or by permission.

Spring semester only, three hours.

CHIN 205. BUSINESS CHINESE II. This course is a continuation of Chinese 105 and focuses on practical language skills that are most helpful in business interactions with Chinese-speaking communities (i.e. China, Taiwan, Hong Kong, and Singapore). Students will learn business negotiation in international trade, short business letter writing, simple business documents comprehension, oral presentation in business, commercial language and word processing. Through intensive practice in the listening and speaking of the Chinese language for business purposes, plus reading and writing development, students will enhance their cultural awareness and acquire vocabulary, phrases and sentence patterns commonly used in typical Chinese business contexts. Classes are conducted mainly in Chinese. Prerequisite: Chinese 102, 105, or by permission.

Offered periodically, semester course, three hours.

CHIN 260. INDEPENDENT STUDY. Individual study of specialized topics in Chinese. Sophomore standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

CHIN 270. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in Chinese. Sophomore standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

CHIN 290. STUDIES IN CHINESE. Readings and discussion of topics in literature or language. Subject matter varies.

Offered periodically, semester course, three hours.

CHIN 301. ADVANCED CHINESE I. This third-year course is conducted entirely in Chinese. It seeks to further develop learners' overall language proficiency through extensive reading of modern texts in various styles. Students will learn how to distinguish written language phrases (*shūmiàn yǔ*) and daily spoken, informal phrases. Students will have opportunities to narrate personal experience, discuss current social problems, and explore cultural issues at discourse level. Topics include college course requirements and selection, libraries and book reviews, school academic work, biography and life stories, air travel and extreme weather, and Chinese hospitality. Prerequisite: Chinese 202 or by permission.

Fall semester only, three hours.

CHIN 302. ADVANCED CHINESE II. This third-year course aims to further vocabulary expansion and consolidation of essential sentence structures of contemporary Chinese through extensive reading and related conversation. Students will continue to learn both written language phrases (*shūmiàn yǔ*) and daily spoken, informal phrases. Students will discuss in the Chinese language topics such as lifestyle, environment, Chinese *gongfu*, physical movements and injury, emotions and advice, and dating and relationships. Prerequisite: Chinese 301 or by permission.

Spring semester only, three hours.

CHIN 305. BUSINESS CHINESE III. This course is conducted entirely in Chinese and is designed for students who are interested in international business with Chinese enterprises in Chinese-speaking communities. Students will study business and professional terminology; learn business practices and customs; practice giving formal presentations; read business related articles and statistical information; and review business documents including invoices, shipping documents, bank statements, sales and purchase contracts, brochures introducing new products, and other business letters involving import and export trade. Students will write basic business letters and develop the ability to distinguish the stylistic differences between *formal* and *informal* correspondence, *colloquial* and *written* Chinese, and be able to write formal business letters in the appropriate format with the correct register. Students are expected to fully participate in discussions in Mandarin Chinese. Prerequisite: Chinese 205, 301, or by permission.
Offered periodically, semester course, three hours.

CHIN 320. INTRODUCTION TO CHINESE CIVILIZATION. A survey of Chinese history and civilization including social, political, economic, and cultural developments. Students will survey nearly 4,000 years of history from 2,000 B.C. to 1911 A.D. They will learn about the fundamental religious, cultural, and social traditions that shaped China's development. This course is taught in English.
Offered periodically, semester course, three hours.

CHIN 321. MODERN CHINA. This course addresses the momentous social and cultural changes that have occurred in China in recent years. In exploring this subject, Chinese culture is systematically examined from different aspects, including but not limited to, Chinese cultural roots, economy, ideology, politics, religion, and education. Some of China's hottest issues, with which Western societies have been concerned in recent years, are discussed; such as the Cultural Revolution, the Reform movement, the Tiananmen Square Incident of 1989, human rights, China's ascension, China-U.S., Taiwan relations, China's global expansion, and China's future. This course is taught in English.
Offered periodically, semester course, three hours.

CHIN 360. INDEPENDENT STUDY IN CHINESE. Individual study of specialized topics in Chinese. Junior standing, permission of the department chair, and a faculty sponsor are required.
Semester course, one, two, or three hours.

CHIN 370. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in Chinese. Junior standing, permission of the department chair, and a faculty sponsor are required.
Semester course, one, two or three hours.

CHIN 390. STUDIES IN CHINESE. Readings and discussion of topics in literature or language. Subject matter varies.
Offered periodically, semester course, three hours.

CHIN 460. INDEPENDENT STUDY IN CHINESE. Individual study of specialized topics in Chinese. Senior standing, permission of the department chair, and a faculty sponsor are required.
Semester course, one, two, or three hours.

CHIN 470. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in Chinese. Senior standing, permission of the department chair, and a faculty sponsor are required.
Semester course, one, two or three hours.

FRENCH (FREN)

FREN 101. ELEMENTARY FRENCH I. The first of a two-semester elementary sequence that moves students towards functional proficiency in the four skill areas (reading, writing, listening, speaking) while increasing their cultural literacy of the French-speaking world. Intended for students with little or no prior exposure to the French language, this course emphasizes successful communication in real-life situations and a basic understanding of the main elements of French grammar.
Fall semester only, three hours.

FREN 102. ELEMENTARY FRENCH II. The second of a two-semester elementary sequence that moves students towards functional proficiency in the four skill areas (reading, writing, listening, speaking) while increasing their cultural literacy of the French-speaking world. Prerequisite: French 101 or equivalent.
Spring semester only, three hours.

FREN 201. INTERMEDIATE FRENCH I. This course develops proficiency in the four major communicative skills: writing, speaking, reading, and listening. Students will acquire an expanded vocabulary by focusing on semantically associated groups. They will demonstrate a greater command of grammar and be able to write paragraph-length answers to questions, as well as the instructor's guided page-length compositions. Through readings and discussions, they should attain a deeper understanding and appreciation not only of French culture, but also of the diversity of the francophone world. In essence, students, it is hoped, will progress from being list makers to being paragraph makers, from memorizing words in isolation to thinking in context, from studying grammar structures in a vacuum to using them as a linguistic and semantic support. Prerequisite: French 102 or equivalent.
Fall semester only, three hours.

FREN 202. INTERMEDIATE FRENCH II. Building upon French 201, this course continues to develop proficiency in the four major communicative skills: writing, speaking, reading, and listening. Students will acquire an expanded vocabulary by focusing on semantically associated groups. They will demonstrate a greater command of grammar and be able to write paragraph-length answers to questions, as well as the instructor's guided page-length compositions. Through readings and discussions, they should attain a deeper understanding and appreciation not only of French culture, but also of the diversity of the francophone world. In essence, students, it is hoped, will progress from being list makers to being paragraph makers, from memorizing words in isolation to thinking in context, from studying grammar structures in a vacuum to using them as a linguistic and semantic support. Prerequisite: French 201 or equivalent.
Spring semester only, three hours.

FREN 260. INDEPENDENT STUDY. Individual study of specialized topics in French. Sophomore standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

FREN 270. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in French. Sophomore standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

FREN 301. UNDERSTANDING FRANCE AND THE FRENCH. Students gain insight into modern day France and her people through an understanding of her recent history, institutions, conventions, and cultural products. A variety of sources (articles, films, essays, etc.) will facilitate discussion of key aspects of French society. Prerequisite: French 202 or by permission.

Alternate years, fall semester only, three hours.

FREN 305. TOPICS IN FRENCH AND FRANCOPHONE STUDIES. Students hone skills of description, narration, and evaluation through the observation and discussion of various cultural elements of the French-speaking world. Different topics will be studied in different semesters and may include gastronomy, fashion, sports, music, places (such as Paris), or major cultural figures. This course fulfills the Speaking Intensive (SI) requirement for the French major and may be repeated for credit provided the topic is different. Prerequisite: French 202 or by permission.

Alternate years, fall semester only, three hours.

FREN 307. PRINCIPLES OF FRENCH GRAMMAR AND STYLE. This course will help advanced students to further develop linguistic skills and learn to write creatively in the target language. Through challenging exercises, examinations, and essays, students gain continuous practice in speaking, reading, and writing the target language. Emphasis is placed on the following topics: the identification and recognition of parts of speech and grammatical functions, adjectives (descriptive, possessive, demonstrative, and indefinite), pronouns (possessive, demonstrative, indefinite, and relative), simple and compound tenses of the indicative, present participle, pronominal verbs, and

agreement of the past participle. This course fulfills the Writing Intensive (WI) requirement for the French major. Prerequisite: French 202, a French 300-level course, or by permission.

Alternate years, fall semester only, three hours.

FREN 308. APPLIED PHONETICS. Offering both a theoretical and practical approach to the French phonetic system, this course guides students through the sounds and prosody of French as contrasted with English with the help of the International Phonetic Alphabet. In addition to learning to identify and transcribe all French phonemes, students will improve their own pronunciation and intonation via extensive oral practice and individualized feedback. Required of French majors and those desiring teacher certification in French. Prerequisites: French 202 or a French 300-level course, or by permission.

Spring semester only, three hours.

FREN 309. ADVANCED GRAMMAR AND COMPOSITION. The goal of this course is to enable advanced students to develop linguistic skills and to hone their writing style in the target language. Through challenging exercises, examinations, and a creative paper, students gain continuous practice in speaking, reading, and writing in the target language. Emphasis is placed on the following aspects of French grammar: nouns, articles, compound tenses of the indicative (other than those studied in 307), pronominal verbs, negatives, adverbs, passive voice, prepositions, personal pronouns, conditional, subjunctive, and imperative. This course fulfills the Writing Intensive (WI) requirement for the French major. Prerequisite: French 202 or a French 300-level course, or by permission.

Alternate years, fall semester only, three hours.

FREN 315. BUSINESS FRENCH. Through this course, students acquire the linguistic skills and cultural information they need to prepare for the *Chambre de commerce et d'industrie de Paris* examinations. They familiarize themselves with business practices of the Francophone world. They are exposed to key French business topics and to essential career practices, as well as to cultural concepts particular to French businesses. Areas of concentration are: 1. la correspondance; 2. la micro-informatique, Internet, le courrier électronique; 3. la recherche d'un emploi; 4. la typologie des entreprises; 5. l'organisation des entreprises; 6. le marketing; 7. la banque et les moyens de paiement; 8. les transports et le commerce international. Prerequisite: French 307 or 309, or by permission.

Offered periodically, semester course, three hours.

FREN 320. MEDIEVAL AND EARLY MODERN FRENCH LITERATURE. A survey of French literature from its beginnings in the eleventh century to the seventeenth century. Through fiction, poetry, essays, treatises, emblems, and images, this course explores the relationships among literary creation, political events, religious movements, artistic innovations, and scientific discoveries. Readings may include *La Vie de Saint Alexis*, *The Song of Roland*, Marguerite de Navarre, Rabelais, Ronsard, Montaigne, Descartes, Pascal, and Madame de Lafayette. This course fulfills the Information Literacy (IL) requirement for the French major. Prerequisite: French 300-level course or by permission.

Offered periodically, semester course, three hours.

FREN 321. 18th THROUGH 21st CENTURY FRENCH LITERATURE. An introduction to French literary development from the eighteenth to the twenty-first century. From Louis XIV's absolute monarchy through the French Revolution to two World Wars and decolonization, these centuries provoked rich and diverse literary production, often as a means of social and political engagement. Authors may include Voltaire, Rousseau, Diderot, Stendhal, Hugo, Balzac, Flaubert, Zola, Modiano, Duras, Queneau, Condé, Ben Jelloun, Nothomb, etc. Prerequisite: French 300-level course or by permission.

Offered periodically, semester course, three hours.

FREN 325. FRENCH THEATRE. A course designed to give students an overview of the history and evolution of theater in the French-speaking world. Readings may include Molière, Corneille, Racine, Beaumarchais, Hugo, Sartre, Ionesco, Beckett, and Césaire. This course fulfills the Information Literacy (IL) requirement for the French major. Prerequisite: French 300-level course or by permission.

Offered periodically, semester course, three hours.

FREN 326. LE CINÉMA PAR LA CONVERSATION. This course begins with analyses, commentaries, and discussions of French films with which spectators in non-francophone countries

are most likely to be familiar. Progressively, the emphasis shifts to films of the *Occupation* (1940-1944) and of the *Nouvelle Vague* (the 1960s), films which have been held significant in aesthetic, social, or moral terms by prominent critics and historians of French cinema. The materials and strategies used are meant to stimulate interest in the target language, to bridge the gap between “skill” and creative courses, and to develop the language proficiency of advanced students, as well as their ability to express themselves creatively in French. This course fulfills the Information Literacy (IL) requirement for the French major. Prerequisite: French 300-level course or by permission.

Offered periodically, semester course, three hours.

FREN 330. WOMEN WRITERS IN FRENCH AND FRANCOPHONE LITERATURE. This course serves to introduce students to the lives and works of francophone female authors from 1800 to the present. Its articulation is as follows: 1. *Prise de conscience*: Madame de Staël (France, Switzerland) and Simone de Beauvoir (France), with a side glance at Virginia Woolf (Great Britain); 2. *Childhood and formation*: Christiane Rochefort (France) and Nathalie Sarraute (France, Russia); 3. *Sexual awakenings and passion*: Colette (France) and Marguerite Duras (France and Indochina); 4. *Matriarchy and exile*: Antonine Maillet (Canada). The last third of the course focuses on three authors ironically joined under the banner of “French Feminism”: Luce Irigaray (Belgium), Hélène Cixous (Algeria), and Julia Kristeva (Bulgaria). This course fulfills the Information Literacy (IL) requirement for the French major. Prerequisite: French 300-level course or by permission.

Offered periodically, semester course, three hours.

FREN 331. POETRY. The goal of this course is to enable students to express themselves with increased sophistication and to practice “*explication de textes*”, this staple of French classical education. Students will study the biographies and also selected texts by nineteenth- and twentieth-century poets from France and the francophone world: Hugo, Nerval, Baudelaire, Mallarmé, Verlaine, Rimbaud, Valéry, Senghor, and Césaire. This course fulfills the Information Literacy (IL) requirement for the French major. Prerequisite: French 300-level course or by permission.

Offered periodically, semester course, three hours.

FREN 332. LA NOUVELLE FRANCOPHONE. A first goal of this course is to bridge the gap often experienced by students between the basic language work conducted during the first years of foreign language study and the diversified advanced work required of French majors. As they engage with authentic texts, students will demonstrate greater sophistication and enhanced complexity in their manipulation of language skills. A second goal is the reading and analysis of short stories and essays by writers of France and the French-speaking world: Maupassant (France), Flaubert (France), Sartre (France), Camus (Algeria), Sarraute (Russia, France), Gabrielle Roy (Canada), Antonine Maillet (Canada), Maryse Condé (Guadeloupe), and Zobel (Martinique). A third goal is to have students analyze short-story fiction (*nouvelle/s*) and demonstrate a greater sophistication and complexity in their manipulation of language skills as they engage with authentic texts. This course fulfills the Information Literacy (IL) requirement for the French major. Prerequisite: French 202, French 300-level course, or by permission.

Offered periodically, semester course, three hours.

FREN 340. MOMENTS IN FRENCH AND FRANCOPHONE HISTORY. Through the study of historical events and developments in the French-speaking world, students expand on the skills of description and narration acquired in French 305 and move toward more sophisticated modes of discourse, such as discussing abstract ideas, constructing arguments, and hypothesizing. Different topics will be studied in different semesters and may include the beginnings of the French language, philosophical ideas (e.g. Enlightenment, existentialism), Medieval culture, the Renaissance, Louis XIV and Versailles, French colonization and its aftermath, France in WWII, etc. This course fulfills the Speaking Intensive (SI) requirement for the French major and may be repeated for credit provided the topic is different. Prerequisites: French 300-level course, or by permission. Completion of French 305 is strongly recommended.

Spring semester only, three hours.

FREN 360. INDEPENDENT STUDY. Individual study of specialized topics in French. Junior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

FREN 362. ASPECTS OF LANGUAGE LEARNING. A course designed to provide opportunities to teach various grammar aspects of the French language, and to examine and implement a variety of technical aspects and resources in the foreign language curriculum in preparation for student teaching. Teacher candidates will regularly reflect on their teaching experiences and will develop a portfolio of materials representing their teaching in the target language. Required of all students desiring teacher certification in a foreign language. *Spring semester of the sophomore year, two hours.*

FREN 370. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in French. Junior standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

FREN 390. STUDIES IN FRENCH. Readings and discussion of topics in literature or language. Subject matter varies. *Semester course, one, two or three hours.*

FREN 460. INDEPENDENT STUDY. Individual study of specialized topics in French. Senior standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

FREN 470. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in French. Senior standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

GERMAN (GERM)

GERM 101. ELEMENTARY GERMAN I. Intended for students who have not studied German or for those with minimal high-school German: grammar and vocabulary-building fundamentals, and basic conversation. *Offered periodically, three hours.*

GERM 102. ELEMENTARY GERMAN II. Appropriate for students who have completed German 101, or one year of high-school German with a grade of B or better. Continuation of grammar, vocabulary building, and basic conversation and reading. Prerequisite: German 101. *Offered periodically, three hours.*

GERM 201. INTERMEDIATE GERMAN I. Appropriate for students who have completed German 101 and 102, or two years of high school German with grades of B or better. Intensive study of grammar and vocabulary in oral and written practice and review of elementary German. Prerequisite: German 102. *Offered periodically, three hours.*

GERM 202. INTERMEDIATE GERMAN II. Continuation of German 201. Understanding and speaking, grammar, and readings from selected texts. Prerequisite: German 201. *Offered periodically, three hours.*

GERM 390. STUDIES IN GERMAN. Readings and discussion of topics in literature or language. Subject matter varies. *Offered infrequently, one, two or three hours.*

SPANISH (SPAN)

SPAN 101. ELEMENTARY SPANISH I. This course is intended for students with no previous study of Spanish or those who have had minimal exposure to the language. An introduction to Spanish, stressing the spoken language and giving practice in grammar, reading, writing, and developing an awareness of culture. *Fall semester only, three hours.*

SPAN 102. ELEMENTARY SPANISH II. Continuation of Spanish 101. Further development of basic communication skills including listening, speaking, reading, writing, and developing an awareness of culture. Prerequisite: Spanish 101. *Spring semester only, three hours.*

SPAN 201. INTERMEDIATE SPANISH I. This course is appropriate for students who have completed Spanish 101 and 102. A review of elementary Spanish and an intensive study of grammar

and vocabulary in oral and written practice, readings from selected texts, and the development of cultural awareness. Prerequisite: Spanish 102 or equivalent. *Fall semester only, three hours.*

SPAN 202. INTERMEDIATE SPANISH II. Continuation of Spanish 201. The intensive study of grammar and vocabulary in oral and written practice, readings from selected texts, and the development of cultural awareness. Further development of basic communication skills in listening, speaking, reading, and writing. Prerequisite: Spanish 201. *Spring semester only, three hours.*

SPAN 260. INDEPENDENT STUDY. Individual study of specialized topics in Spanish. Sophomore standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

SPAN 270. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in Spanish. Sophomore standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

SPAN 295. SPANISH LANGUAGE AND CULTURE. A high-intermediate level course designed to help prepare students for advanced-level Spanish courses. This course will review, broaden, and solidify Spanish language proficiency, communication skills, and cultural awareness via increasingly more complex listening, speaking, reading, and writing tasks. Intended for students who have completed Spanish 202. Prerequisite: Spanish 202 or placement exam. *Semester course, three hours.*

SPAN 300. TOPICS IN CONTEMPORARY CULTURE. This course allows in-depth learning of topics of key importance in the Hispanic world with a particular emphasis on contemporary life. Subject matter will vary and may include urbanism, sports, major cultural figures, history, politics, social movements, and religion and will be approached through film, media, literature, music, and visual arts. This course may be repeated for credit provided the topic is different. Prerequisite: Spanish 295 or 301. *Offered periodically, semester course, three hours.*

SPAN 301. INTRODUCTION TO LITERATURE. Introduction to techniques of literary analysis and study of representative works by major authors of the Spanish-speaking world. Prerequisite: Spanish 202 or placement exam. *Offered periodically, semester course, three hours.*

SPAN 303. CONVERSATION. This course examines contemporary cultural and social trends in Spain, the United States, and Latin America and trains students in interpersonal and presentational communication with a professional focus while offering a review of key grammatical structures. This course fulfills the Speaking Intensive (SI) requirements for the Spanish major. Required of all Spanish majors, minors, and those desiring teacher certification in Spanish. Prerequisite: Spanish 295 or 301.

Fall semester only, three hours.

SPAN 305. APPLIED PHONETICS. This course is a systematic examination of how the sounds of Spanish are produced. By learning and applying phonetic and phonological principles, this course is intended to help students improve their pronunciation. It also introduces the linguistic variation of Spanish in Spain, the United States, and Latin America. Students learn to identify and comprehend the dialects of Spanish and will be trained in using this skill in professional settings. Required of all Spanish majors and those desiring teacher certification in Spanish. Prerequisite: Spanish 295 or 301.

Spring semester only, three hours.

SPAN 306. ADVANCED COMMUNICATION. This class offers an engaging review of the most importance concepts of Spanish grammar by creating real-life scenarios and situations where students can apply what they learn. Students practice how to target their discourse to specific audiences using particular formats, for instance, presentations, interviews, formal and informal letters, emails, and other academic and professional reports. Required of all Spanish majors and of those desiring teacher certification in Spanish. Prerequisite: Spanish 295 or 301.

Spring semester only, three hours.

SPAN 315. PROFESSIONAL SPANISH. This course focuses on the evolution and current state of fields such as business, healthcare, translation, and media in Spain, the United States, and Latin America. The course will study historical and legal contexts, offer in-depth learning and practice of

specific vocabulary and structures relevant to those fields, and develop cultural competency applicable to professional situations. This course also provides an opportunity for students to create a portfolio of documents in Spanish that may be used in a job search and, when possible, the completion of an applied learning project. Prerequisite: Spanish 295 or a Spanish 300-level course, or by permission.

Offered periodically, semester course, three hours.

SPAN 316. BUSINESS CULTURE IN THE HISPANIC WORLD. This course offers an overview of the process of industrialization and the evolution of the markets of goods and services in Latin America. Students also learn about salaries, labor contracts, and important cases involving business ethics. The course concludes with a study of the rise of Hispanic global brands and their impact in today's economy. Students read biographies, articles and short stories, and examine different types of media. Prerequisite: Spanish 295 or 301.

Alternate years, spring semester only, three hours.

SPAN 317. SPACE AND URBAN DESIGN IN LATIN AMERICA. In the Latin American plaza, many different conceptions of how public space is defined and utilized converge, from the Mesopotamian boulevard to the markets, teocallis, and kanchas of the indigenous civilizations of the New World. Through a journey that highlights the key ideas and moments of the history of public space, this class examines the creation of the plaza in Latin America and invites students to make connections with the evolution of Main Street in the United States. Students also explore questions relative to the future of public areas and how redevelopment efforts may affect culture and society in general. Prerequisite: Spanish 295 or 301.

Alternate years, spring semester only, three hours.

SPAN 319. INTRODUCTION TO SPANISH CIVILIZATION. A study of Spanish history and civilization from pre-Roman times to the present. Through readings, videos, discussions and presentations, students explore the social, political, economic and cultural developments of Spain and its people. Prerequisite: Spanish 295 or 301.

Alternate years, spring semester only, three hours.

SPAN 320. CONTEMPORARY SPAIN. A study of the events and ideas which have shaped Spain with an emphasis on cultural achievements and traditions, as well as the evolution of socioeconomic and political structures from the 20th century to the present. Through readings, videos, discussions and presentations, students will develop an understanding of how Spain's rich history contributes to the daily life of contemporary Spain (politics, religion, family, social issues and other current topics) and influences the ways in which Spaniards view themselves and the world. Students will read online Spanish news sources regularly. Prerequisite: Spanish 295 or 301.

Alternate years, spring semester only, three hours.

SPAN 321. FOUNDATIONS OF LATIN AMERICAN SOCIETIES. An exploration of the civilization, culture, literature, and artistic forms of pre-Columbian societies and the changes, challenges, and opportunities brought by the processes of conquest and colonization. Students read firsthand accounts and chronicles of this period as well as the questions and objections raised by members of the Church to how colonization was being implemented. The course examines the contributions of the African populations to Latin American societies and concludes with a study of the Baroque period, including architecture, poetry, and painting. This course fulfills the Information Literacy (IL) and Writing Intensive (WI) requirements for the Spanish major. Prerequisite: 300-level Spanish course beyond 301.

Alternate years, fall semester only, three hours.

SPAN 322. LATIN AMERICAN CIVILIZATION AND CULTURE I. A survey of the twenty-one Latin American republics, their history and civilization, people and society, arts and letters, customs, geography, and cultural accomplishments. Prerequisite: Spanish 295 or 301.

Alternate years, fall semester only, three hours.

SPAN 323. LATIN AMERICAN CIVILIZATION AND CULTURE II. A cultural understanding of Latin America including identity issues, "mestizaje", socio-political characteristics, and patterns of thought and expression in language, literature, philosophy, and art. The course also examines the effects of the Spanish conquest upon the development of Latin American society. It is not necessary to take Spanish 322 before Spanish 323. Prerequisite: Spanish 295 or 301.

Alternate years, spring semester only, three hours.

SPAN 325. INDEPENDENCE AND NATIONAL IDENTITIES IN LATIN AMERICA. A study of the situation of the Spanish colonies in the 18th century and its most recognized cultural productions. This course explores the causes and effects of independence, the power struggles that ensued after the foundation of the Latin American nations, and the role played by foreign powers in the establishment of national identities during the end of the 19th century. Students read travel accounts, chronicles of everyday life, manifestos, and the foundational narratives of the young republics, including novels and poetry. The course concludes with the social and aesthetic conditions that produced *Modernismo*, one of Latin America's most recognized artistic periods. This course fulfills the Information Literacy (IL) and Writing Intensive (WI) requirements for the Spanish major. Prerequisite: 300-level Spanish course beyond 301.
Alternate years, fall semester only, three hours.

SPAN 326. TRENDS IN LATIN AMERICAN LITERATURE. A study of the literature of Latin America from the pre-Columbian era to the beginning of the 20th century. Prerequisite: 300-level Spanish course beyond 301.
Alternate years, fall semester only, three hours.

SPAN 327. CONTEMPORARY LATIN AMERICAN AUTHORS. A survey with readings from representative works of the most important 20th century authors in Latin American and Mexican-American (Chicano) literature. Prerequisite: 300-level Spanish course beyond 301.
Alternate years, spring semester only, three hours.

SPAN 328. PEACE AND RECONCILIATION IN LATIN AMERICA. An exploration of the most representative poetry, essays, film, short stories, art, and fiction of the 20th century in Latin America. The course investigates the main causes and effects of civil conflict in this geographical area and introduces students to the reconciliation and peace processes that took place during the end of the last century. This course fulfills the Information Literacy (IL) and Writing Intensive (WI) requirements for the Spanish major. Prerequisite: 300-level Spanish course beyond 301.
Alternate years, fall semester only, three hours.

SPAN 330. MEDIEVAL AND GOLDEN AGE SPAIN. A study of representative authors and works of the Middle Ages, Renaissance, and Golden Age. This course explores the development of Spanish poetry, narrative, and theater in its historical and cultural contexts. Readings may include the *Cantar de Mio Cid*, *El Conde Lucanor*, *El Libro de Buen Amor*, Jorge Manrique, Garcilaso de la Vega, Fray Luis de León, San Juan de la Cruz, *El Quijote*, Lope de Vega, etc. This course fulfills the Information Literacy (IL) and Writing Intensive (WI) requirements for the Spanish major. Prerequisite: 300-level Spanish course beyond 301.
Offered periodically, semester course, three hours.

SPAN 331. THE SPANISH ENLIGHTENMENT AND ITS AFTERMATH. A study of Spanish Romanticism, Realism, and Generation of '98 with readings from authors such as Espronceda, Zorrilla, Bécquer, Rosalía de Castro, Galdós, Pardo Bazán, Blasco Ibáñez, Unamuno, and Baroja. Nineteenth-century Spain is characterized by enormous political and social instability. This course explores how increasing tensions between *las dos Españas*, as well as other cultural developments inspired generations of authors. This course fulfills the Information Literacy (IL) and Writing Intensive (WI) requirements for the Spanish major. Prerequisite: 300-level Spanish course beyond 301.
Offered periodically, semester course, three hours.

SPAN 333. CONTEMPORARY SPANISH AUTHORS. A survey with readings from representative authors and works of the 20th and 21st centuries. The literary works of contemporary Spain provide readers with a uniquely discerning view of Spanish history, society, and culture from the Second Republic through the Spanish Civil War and Franco's dictatorship, to democracy and the social and political movements of recent decades. Authors may include Alberti, Lorca, Buero Vallejo, Cela, Martín Gaité, Celaya, etc. This course fulfills the Information Literacy (IL) and Writing Intensive (WI) requirements for the Spanish major. Prerequisite: 300-level Spanish course beyond 301.
Offered periodically, semester course, three hours.

SPAN 335. FILM IN THE HISPANIC WORLD. An exploration of topics in film in the Hispanic world, including history, national productions, and genres. Prerequisite: 300-level Spanish course beyond 301.
Alternate years, spring semester only, three hours.

SPAN 340. ADVANCED GRAMMAR. This course is a systematic approach to how Spanish grammar functions. Its main goal is to enhance the students' ability to control language and adjust their discourse to its intended purpose and to a particular audience. Students read and analyze authentic materials stemming from printed texts and other media, and study them in order to understand, explain, and discuss how grammar is used. Required of all Spanish majors and those desiring teacher certification in Spanish. Prerequisite: 300-level Spanish course beyond 301.

Fall semester only, three hours.

SPAN 360. INDEPENDENT STUDY. Individual study of specialized topics in Spanish. Junior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

SPAN 362. ASPECTS OF LANGUAGE LEARNING. A course designed to provide opportunities to teach various grammar aspects of the Spanish language, and to examine and implement a variety of technical aspects and resources in the foreign language curriculum in preparation for student teaching. Teacher candidates will regularly reflect on their teaching experiences and will develop a portfolio of materials representing their teaching in the target language. Required of all students desiring teacher certification in a foreign language.

Spring semester of the sophomore year, two hours.

SPAN 370. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in Spanish. Junior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

SPAN 390. STUDIES IN SPANISH. The topics of this course will vary each semester, addressing a variety of themes in linguistics or matters of cultural, social, and historical importance in the Hispanic world, including, but not limited to, Spain, Latin America, and Hispanics in the United States. Prerequisite: Spanish 295 or a Spanish 300-level course, or by permission.

Offered periodically, one, two or three hours.

SPAN 424. HISPANICS IN THE U.S. A study of the life-styles, heritage, influence, thoughts, and experiences of Cuban, Puerto Rican, Mexican American, Dominican, and other Spanish speakers in the United States today. Through extensive reading, videos and discussion, we will explore contemporary issues and topics of interest such as demographics, immigration, discrimination, workers' rights, education, the arts, customs, beliefs and daily life. The course will foster a greater awareness of the similarities and differences existing between these communities, as well as their contributions to American society. Of particular interest to students of Spanish, sociology, and political science. Required of all Spanish majors and those desiring teacher certification in Spanish. Prerequisite: 300-level Spanish course beyond 301.

Fall semester only, three hours.

SPAN 460. INDEPENDENT STUDY. Individual study of specialized topics in Spanish. Senior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

SPAN 470. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in Spanish. Senior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

GLOBAL STUDIES (GOBL)

These courses are designed for students who wish to gain familiarity with cultures and literatures other than their own. Prior knowledge of a foreign language is unnecessary. None of the courses below may be counted toward fulfillment of the requirements for a language major.

GOBL 260. INDEPENDENT STUDY. Individual study of specialized topics in global studies. Sophomore standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

GOBL 270. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in global studies. Sophomore standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

GOBL 290. STUDIES IN MODERN LANGUAGE. Readings and discussion of topics in literature or language. Subject matter varies.

Semester course, one, two or three hours.

GOBL 300. INTERNATIONAL MANNERS AND MORES. This course equips students to recognize and appreciate cultural differences, their origins, and how they manifest in a variety of contexts. By exploring other customs and ways of thinking, this course prepares students to engage respectfully and effectively on the international stage. Of special value for students of any major who plan to work, study, and/or travel abroad, yet the principles studied and skills gained apply just as readily to interacting with any community or institution with a particular way of doing things.

Offered periodically, semester course, three hours.

GOBL 310. CHICANO AND LATIN AMERICAN LITERATURE. A survey with readings in English from representative literary works of Latin American and Chicano authors with an emphasis upon the study of Hispanic cultural identity and the integration of Christian thought.

Offered periodically, semester course, three hours.

GOBL 360. INDEPENDENT STUDY. Individual study of specialized topics in global studies. Junior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

GOBL 370. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in global studies. Junior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

GOBL 390. STUDIES IN MODERN LANGUAGE. Readings and discussion of topics in literature or language. Subject matter varies.

Semester course, one, two or three hours.

GOBL 460. INDEPENDENT STUDY. Individual study of specialized topics in global studies. Senior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

GOBL 470. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in global studies. Senior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

DEPARTMENT OF MUSIC

Dr. Carter, Chair; Dr. Drake, Mr. Erb, Dr. Hasper, Dr. Huebert, Dr. Mueller, Dr. Munson, Dr. Papparone, Dr. Tedford. Additional Instructional Faculty: Ms. Agnew, Mr. Bellassai, Dr. Billock, Mr. Byo, Mr. Cameron, Mr. Churm, Mr. Fennell, Dr. Fitch, Mrs. Gregg, Mr. Heasley, Mr. Heid, Ms. Kohanski, Ms. Kubik, Mr. May, Mrs. McFarland, Mr. Mobley, Ms. Philipp, Dr. Piastro-Tedford, Mr. Scanga, Ms. Scott, Mr. Tessmer, Ms. Toth, Mr. Weber, Mrs. Young.

Course Requirements for Bachelor of Music Degree in Music (MUSI)—44 hours

Music Core (25 hours):

Music 103, 104, 105, 106, 203, 204, 205, 206, 219, 331, 332, 476; and Music 317 or 318.

Applied Music (12 hours):

Students must complete a minimum of eight (8) credits in their primary applied instrument and an additional component of four (4) credits of group music classes or

private lessons in a secondary applied area(s). Students must take an applied lesson in their primary area every semester they are enrolled at the college.

Ensemble (7 hours with a total of 10 occurrences):

Students must complete 7 credit hours in any combination of Music 100 Band, Music 101 Concert Choir, or Music 102 Orchestra. An additional 3 ensembles (credit or non-credit) must be completed, choosing from Music 100, 101, 102, 114, 115, 116, 117, 118, or 119. Students whose primary applied area is vocal, wind, string, or percussion (not piano, organ, guitar, or harp) must participate in an ensemble using their primary applied area every semester that they are enrolled in the program. All other applied areas must enroll in at least one transcript-listed ensemble each semester. Students must have a total of 10 occurrences of enrolled ensembles (7 credited ensembles and 3 additional credit or non-credit ensembles) to fulfill the degree requirement.

Recital Attendance Requirement:

Music majors must register each semester for Music 199, which requires attendance at a predetermined number of faculty, senior and student recitals.

Recommended music electives include Music 223, 224, 230, 303, 304, 311, 325, 326, 329, 330, 360, 403, 426, 460, and 488.

Courses that count in the MUSI major quality point average (MQPA):

All courses with “MUSI” prefix. A minimum MQPA of 2.00 is required to graduate.

Course Requirements for Bachelor of Music Degree in Music/Business (MUSB)—70 hours

Music Core (29 hours):

Music 103, 104, 105, 106, 203, 204, 205, 206, 219, 221, 331, 332, 476; Music 317 or 318; and two courses from Music 107, 108, 207, 209, or 307.

Applied Music (10 hours):

Students must complete a minimum of eight (8) credits in their primary applied instrument and an additional component of two (2) credits of group music classes or private lessons in a secondary applied area(s). Students must take an applied lesson in their primary area every semester they are enrolled at the college.

Ensemble (7 hours with a total of 10 occurrences):

Students must complete 7 credit hours in any combination of Music 100 Band, Music 101 Concert Choir, or Music 102 Orchestra. An additional 3 ensembles (credit or non-credit) must be completed, choosing from Music 100, 101, 102, 114, 115, 116, 117, 118, or 119. Students whose primary applied area is vocal, wind, string, or percussion (not piano, organ, guitar, or harp) must participate in an ensemble using their primary applied area every semester that they are enrolled in the program. All other applied areas must enroll in at least one transcript-listed ensemble each semester. Students must have a total of 10 occurrences of enrolled ensembles (7 credited ensembles and 3 additional credit or non-credit ensembles) to fulfill the degree requirement.

Recital Attendance Requirement:

Music majors must register each semester for Music 199, which requires attendance at a predetermined number of faculty, senior and student recitals.

Business Requirements (24 hours):

Accounting 201, 202; Economics 101; Finance 301; Management 203, 211, 303; and Marketing 204.

Courses that count in the MUSB major quality point average (MQPA):

All courses with “MUSI”, “ACCT”, “ECON”, “FNCE”, “MARK”, “MNGT” prefixes, excluding MNGT 106 and FNCE 105. A minimum MQPA of 2.00 is required to graduate.

Course Requirements for Bachelor of Music Degree in Music and PreK-12 Education Certification (MUSE)—95 hours

The Pennsylvania Department of Education recognizes this major as an approved program for meeting the requirements of the Instructional I (Provisional) teaching certificate. For teacher certification requirements, see the Dept. of Education section.

Music Core (36 hours):

Music 103, 104, 105, 106, 107, 108, 203, 204, 205, 206, 207, 209, 219, 221, 304 or 403, 307, 317, 318, 331, 332, and 476.

Applied Music (10 hours):

Students must complete a minimum of a one-credit lesson for each semester except the student teaching semester in their primary applied instrument (seven credits) and an additional component of two (2) one-credit piano lessons or piano classes and one (1) one-credit guitar lesson or guitar class.

Ensemble (7 hours with a total of 10 occurrences):

Students must complete a total of 7 credit hours in Music 100 Band, Music 101 Concert Choir, and Music 102 Orchestra. Specifically, students must take a minimum of two hours of Music 100 (comprising of one semester of Marching Band and one semester of Concert Band); two hours of Music 101; two hours of Music 102; and one additional hour using their primary applied area. An additional 3 ensembles (credit or non-credit) must be completed, choosing from Music 100, 101, 102, 114, 115, 116, 117, 118, or 119. Students whose primary applied area is vocal, wind, string, or percussion (not piano, organ, guitar, or harp) must participate in an ensemble using their primary applied area every semester that they are enrolled in the program. All other applied areas must enroll in at least one transcript-listed ensemble each semester. Students must have a total of 10 occurrences of enrolled ensembles (7 credited ensembles and 3 additional credit or non-credit ensembles) to fulfill the degree requirement.

Recital Attendance Requirement:

Music education majors must register each semester, except the student teaching semester, for Music 199, which requires attendance at a predetermined number of faculty, senior, and student recitals.

Professional Education Requirements (42 hours):

Education 202, 203, 213, 214, 313, 314, 372, 373, 435, 437, 488; Music 202; Psychology 102; and Special Education 101.

Courses that count in the MUSE major quality point average (MQPA):

All courses with “MUSI” and “EDUC” prefix; Psychology 102; and Special Education 101. A minimum MQPA of 2.00 is required to graduate. The minimum QPAs to be certified are 3.00 for the cumulative CQPA and 2.75 for the MQPA.

**Course Requirements for Bachelor of Music Degree in Music Performance (MUSP)—
68 hours**

Music Core (27 hours):

Music 103, 104, 105, 106, 203, 204, 205, 206, 219, 331, 332, 376, 475; and Music 317 or 318.

Music Electives (10 hours):

Students must complete a minimum of ten (10) credits of Music elective courses.

Recital Attendance Requirement:

Students must register each semester for Music 199, which requires attendance at a predetermined number of faculty, senior and student recitals.

Performance Concentration (31 hours):

Choose one of the following options:

Instrumental Music Concentration

Concentration Core:

Music 304, 328, 334, and one of Music 107, 108, 207, or 307.

Ensemble (8 hours with a total of 16 occurrences):

Students must complete 8 credit hours through participation in Music 100 Band or Music 102 Orchestra every semester (8 semesters). An additional 8 ensembles (credit or non-credit) must be completed, choosing from Music 100, 102, 114, 115, 117, or 118. Students must have a total of 16 occurrences of enrolled ensembles (8 credited ensembles and 8 additional credit or non-credit ensembles) to fulfill the degree requirement.

Applied Music:

Students must complete a one-hour lesson in their primary applied instrument each semester (8 semesters).

Piano Concentration

Concentration Core:

Music 127, 128, 224, and 327.

Ensemble (8 hours with a total of 12 occurrences):

Students must complete 8 credit hours through participation in Music 100 Band, Music 101 Concert Choir, or Music 102 Orchestra every semester (8 semesters). An additional 4 ensembles (non-credit) must be completed, choosing from Music 114, 115, 116, 117, 118, or 119. Students must have a total of 12 occurrences of enrolled ensembles (8 credited ensembles and 4 additional non-credit ensembles) to fulfill the degree requirement.

Applied Music:

Students must complete a one-hour piano lesson (Music 152) each semester (8 semesters). Students must also complete two (2) one-half hour organ lessons (Music 155).

Vocal Concentration

Concentration Core:

Music 209, 211, 223 (taken two times), and 333.

Ensemble (8 hours with a total of 16 occurrences):

Students must complete 8 credit hours through participation in Music 101 Concert Choir every semester (8 semesters). An additional 8 ensembles (non-credit) must be completed, choosing from Music 116 or 119. Students must have a total of 16 occurrences of enrolled ensembles (8 credited ensembles and 8 additional non-credit ensembles) to fulfill the degree requirement.

Applied Music:

Students must complete a one-hour voice lesson (Music 162) each semester (8 semesters).

Courses that count in the MUSP major quality point average (MQPA):

All courses with “MUST” prefixes. A minimum MQPA of 2.00 is required to graduate.

Course Requirements for Bachelor of Music Degree in Music/Religion (MUSR)—69 hours**Music Core (29 hours):**

Music 103, 104, 105, 106, 203, 204, 205, 206, 219, 221, 331, 332, and 476; Music 317 or 318; and choose 2 courses from Music 107, 108, 207, 209, or 307.

Applied Music (10 hours):

Students must complete a minimum of eight (8) credits in their primary applied instrument and an additional component of two (2) credits of group music classes or private lessons in a secondary applied area(s). Students must take an applied lesson in their primary area every semester they are enrolled at the college.

Ensemble (7 hours with a total of 10 occurrences):

Students must complete 7 credit hours in any combination of Music 100 Band, Music 101 Concert Choir, or Music 102 Orchestra. An additional 3 ensembles (credit or non-credit) must be completed, choosing from Music 100, 101, 102, 114, 115, 116, 117, 118, or 119. Students whose primary applied area is vocal, wind, string, or percussion (not piano, organ, guitar, or harp) must participate in an ensemble using their primary applied area every semester that they are enrolled in the program. All other applied areas must enroll in at least one transcript-listed ensemble each semester. Students must have a total of 10 occurrences of enrolled ensembles (7 credited ensembles and 3 additional credit or non-credit ensembles) to fulfill the degree requirement.

Recital Attendance Requirement:

Music majors must register each semester for Music 199, which requires attendance at a predetermined number of faculty, senior and student recitals.

Religion Requirements (23 hours):

Music 325; Religion 211, 212, 216, 246; one of Religion 221, 232, 237, or 351; one of Religion 261, 341, 342, or 362; and one of Religion 247, 251, 320, or 330.

Courses that count in the MUSR major quality point average (MQPA):

All courses with “MUST” and “RELI” prefixes. A minimum MQPA of 2.00 is required to graduate.

Applied Music

Private lessons are offered in piano, organ, voice, strings, brass, woodwinds, guitar, harp, and percussion.

Piano classes offer group instruction in a piano lab to develop skills in playing solo literature, accompaniment, harmonization, and transposition. Classes are available at various levels of proficiency.

Voice classes offering group instruction in the techniques of voice production are available at beginning and intermediate levels.

Guitar classes are available at beginning and intermediate levels.

Ensemble

Credit may be earned for membership in performing organizations during each semester. Ensembles offered for credit include Concert Band, Concert Choir, Marching Band, and Orchestra. Other ensembles are available on a non-credit basis.

The Music Department has designated courses within the Bachelor of Music degree as Writing Intensive (WI), Speaking Intensive (SI), and Information Literacy (IL). These courses provide the necessary skills that will be needed by a professional music educator, performer, conductor, composer, or scholar. Music 203, and 204 are designated as SI courses. They provide the music student with skills necessary to speak in front of an audience as part of a performance and to deliver oral presentations in the music content area. Music 331 and 332 are designated as IL and WI courses. They provide the music student with an introduction to music research skills encompassing use of musical scores, recordings, traditional library sources and Internet use. Implementing the IL and WI skills provides the necessary skills used in all areas of the music profession. Music 221 is also an IL course. This music technology course provides the student with MIDI experience, sound technology, and information access through the Internet.

Course Requirements for a minor in Music (18 hours)

A minor in Music will consist of Music 103, 104, 105; Music 331 or 332; three, ½ hour juried lessons, choosing from Music 150-191; two semesters participation (for credit) in Music 100, 101, or 102; and four additional hours of Music electives. In addition, while enrolled as a music minor, students must register each semester for Music 198, which requires attendance at four recitals per semester; perform in at least two *student* recitals while enrolled as a music minor; and attend all Music Department meetings each semester. Note: All prospective Music Minors must pass an audition before being admitted into the music minor program.

Course Requirements for a minor in Musical Theatre (24 hours)

A minor in Musical Theatre will consist of Theatre 251, 259 (taken 2 times), 261; Music 103, 105, 161 (taken 3 times); Physical Education 211, 213, 290 Jazz & Tap; and six hours from Theatre 262, 320, 351, Music 222, or Music/Theatre 210.

Students are expected to contact their advisors for a detailed schedule of courses recommended to meet requirements for a major.

MUSIC (MUSI)

MUSI 100. BAND. Fall Semester: The college marching band begins its year with band camp one week before classes begin in the fall. The band performs at home football games, selected away football games, and high school band festivals. **Spring Semester:** The symphonic band performs all styles of concert literature and presents two concerts during the semester. Auditions are held during the first week of each semester. *Semester course, one hour.*

MUSI 101. CONCERT CHOIR. Concert choir members prepare, study, and present choral literature. The choir performs two concerts each semester, as well as for special campus services when applicable. Auditions are held during the first week of each semester. *Semester course, one hour.*

MUSI 102. ORCHESTRA. The college orchestra performs a repertoire of classical as well as modern music. The orchestra performs one concert during the fall semester and two during the spring semester. Seating auditions are held the first week of fall semester, with new member auditions during the first week of spring semester. *Semester course, one hour.*

MUSI 103. MUSIC THEORY I. The first in a sequence of four music theory courses. This course covers fundamentals of music as well as beginning musical analysis, counterpoint, and four-part writing. Prerequisite: Music major, music minor, or with the permission of the instructor.

Fall semester only, three hours.

MUSI 104. MUSIC THEORY II. The second in a sequence of four music theory courses. This course covers part-writing and analysis including all diatonic chords and tonic, dominant, and pre-dominant functions. Prerequisite: Music 103.

Spring semester only, two hours.

MUSI 105. AURAL SKILLS I. An aural skills and sight singing class including melodic dictation, interval recognition, and chord identification.

Fall semester only, one hour.

MUSI 106. AURAL SKILLS II. A continuation of Music 105, including all intervals, melodic dictation with large leaps, melodic and harmonic error detection, and chord identification including I, ii, iii, IV, V, and vi triads. Prerequisite: Music 105.

Spring semester only, one hour.

MUSI 107. BRASS METHODS. Class instruction in the brass instruments with emphasis on development of the instrumental program in the schools. Prerequisite: Music major and minors only, or with the permission of the instructor.

Spring semester only, one hour.

MUSI 108. PERCUSSION METHODS. Class instruction in percussion instruments with emphasis on development of the instrumental program in the schools. Prerequisite: Music major and minors only, or with the permission of the instructor.

Fall semester only, one hour.

MUSI 114. GROVE CITY COLLEGE WIND ENSEMBLE. The Wind Ensemble is a select group of instrumental music students. This 45-member ensemble performs music of an academic nature including contemporary, classical, and standard wind literature. Enrollment is open to students of all majors by audition. Auditions are held during the first week of spring semester.

Semester course, zero hours.

MUSI 115. GROVE CITY COLLEGE CHAMBER ORCHESTRA. The Chamber Orchestra is a select group of string players and other select wind and percussion students who must audition to join. This ensemble performs more challenging works from the string and chamber repertoires. The group presents music in each orchestra concert and other selected performances during the academic year. Auditions are held during the first week of fall semester.

Semester course, zero hours.

MUSI 116. GROVE CITY COLLEGE TOURING CHOIR. The Touring Choir is comprised of selected vocalists who are committed to striving for excellence in the choral art. The choir sings for campus events, area churches, and takes a ten-day tour during a spring semester break. Auditions are held during the first week of fall semester.

Semester course, zero hours.

MUSI 117. GROVE CITY COLLEGE JAZZ ENSEMBLE. The Jazz Ensemble is an advanced instrumental performing group. This group performs Swing, Bebop, Latin, Fusion, and other modern styles of jazz literature. Improvisational and advanced comping skills are highly desirable for membership in this ensemble. The Jazz Ensemble performs two college concerts per year in addition to several off-campus events. Musicians are selected by an open audition process during the 1st and 2nd week of the fall semester.

Semester course, zero hours.

MUSI 118. GROVE CITY COLLEGE STAGE BAND. The Stage Band is an instrumental performing group that plays less demanding literature that develops jazz style, articulation, and phrasing. While improvisation skills are not required for this group, they are encouraged and developed. Musicians are selected by an open audition process during the 1st and 2nd week of the fall semester. The Stage Band typically performs two college concerts per year.

Semester course, zero hours.

MUSI 119. GROVE CITY COLLEGE SINGERS. The Grove City College Singers is comprised of auditioned female vocalists who are interested in singing a variety of sacred and secular vocal

literature. In addition to two formal concerts during the academic year, the ensemble sings at a variety of campus venues, including alumni events, and a chapel service during the fall semester. Auditions are held during the first week of fall semester. *Semester course, zero hours.*

MUSI 123. PIANO CLASS I. The first in a sequence of piano classes, this course is intended for students with no background in piano playing. Skills developed in this course include: reading pitch and rhythm; repertoire in five-finger positions in various keys; white-key major and minor scales in two octaves, hands separately; introduction of changes of position (thumb crossing, finger substitution, extension, contraction, leap); I and V 6/5 chords in all major keys. *Semester course, one hour.*

MUSI 124. PIANO CLASS II. The second in a sequence of piano courses, this course is intended for students who have the basic skills developed in Music 123 Piano Class I. The course includes: repertoire with easy changes of position; black-key major and minor scales in two octaves, hands separately; chord progressions I-V in all major and minor keys; harmonization using I and V 6/5; and sight-reading in five-finger positions. Prerequisite: Music 123 or equivalent background in piano. See instructor for placement. *Semester course, one hour.*

MUSI 125. PIANO CLASS III. The third in a sequence of piano courses, this course is intended for students who have acquired the basic skills developed in Music 124 Piano Class II. The course includes: intermediate level repertoire by standard composers; all major scales, two octaves, hands together; chord progressions I-IV-V-I in major and minor keys; harmonization using I, IV 6/4, and V 6/5 chords in major and minor keys; and sight-reading easy pieces with minimal changes of position; and transposing of simple melodies. Prerequisite: Music 124 or equivalent background in piano. See instructor for placement. *Semester course, one hour.*

MUSI 126. PIANO CLASS IV. The fourth in a sequence of piano courses, this course is intended for students who have attained the skills covered in Music 125 Piano Class III. The course includes: standard repertoire at the intermediate and advanced-intermediate levels; all major scales, two octaves, hands together; chord progressions I-IV-ii-V7-I in major and minor keys; harmonization using I, IV 6/4, and V 6/5 in various accompaniment patterns; sight-reading early intermediate repertoire; introduction of hymn playing, reading open score (SATB), and playing easy accompaniments. Prerequisite: Music 125 or equivalent background in piano. See instructor for placement. *Semester course, one hour.*

MUSI 127. ACCOMPANYING CLASS I. This course provides instruction in the art of accompanying vocalists on the piano. Various musical aspects are addressed, including following the singer's phrasing and tempo, maintaining metrical pulse and tonal balance, accompanying recitative, playing orchestra reductions, and interpreting musical style periods. Practical issues include page turning, proper deportment on stage, and rehearsal techniques. *Semester course, one hour.*

MUSI 128. ACCOMPANYING CLASS II. This course provides instruction in the art of accompanying instrumentalists on the piano. Various musical aspects are addressed, including following the soloist's phrasing and tempo, maintaining metrical pulse and tonal balance, playing orchestra reductions, and interpreting musical style periods. Practical issues include page turning, proper deportment on stage, and rehearsal techniques. *Semester course, one hour.*

MUSI 131. ORGAN CLASS. This course is for music as well as non-music majors interested in the organ and its literature. The course also studies the history and design of the organ as well as acoustics and liturgical architecture. *Semester course, one hour.*

MUSI 135. GUITAR CLASS I. This is an introductory course designed to provide the student with a means of self-expression through playing the guitar. *Semester course, one hour.*

MUSI 137. GUITAR CLASS II. This course is for the student who has a basic knowledge of the guitar. This course includes teaching correct methods for learning flamenco techniques, aural and visual analysis, and performance harmonizing. *Semester course, one hour.*

MUSI 141. BEGINNING VOICE CLASS. This course teaches vocal production and song presentation. Individuals demonstrate and perform for class members. *Fall semester only, one hour.*

MUSI 144. INTERMEDIATE VOICE CLASS. This course teaches vocal production and song presentation for students with previous experience. Individuals demonstrate and perform for class members. *Spring semester only, one hour.*

MUSI 151-152. PRIVATE PIANO LESSON. This course consists of one-half hour for one credit (151) or one full hour for two credits (152) of individual instruction at the piano. The level of repertoire

will depend upon the technical and musical abilities of the student.

Semester course, one or two hours.

MUSI 155-156. PRIVATE ORGAN LESSON. This course consists of one-half hour for one credit (155) or one full hour for two credits (156) of individual instruction at the organ. The student will study literature appropriate to the organ and also work on technical development.

Semester course, one or two hours.

MUSI 161-162. PRIVATE VOICE LESSON. This course consists of one-half hour for one credit (161) or one full hour for two credits (162) of private instruction in voice. Vocal production, language training, and performance skills for the individual singer are taught.

Semester course, one or two hours.

MUSI 163-164. PRIVATE STRING LESSON - CELLO. This course consists of one-half hour for one credit (163) or one full hour for two credits (164) of individual instruction on the cello. Students will improve technical skill as well as become familiar with string literature for the cello.

Semester course, one or two hours.

MUSI 165-166. PRIVATE STRING LESSON - VIOLIN/VIOLA. This course consists of one-half hour for one credit (165) or one full hour for two credits (166) of individual instruction on the violin or viola. Students will improve technical skill as well as become familiar with string literature for the violin or viola.

Semester course, one or two hours.

MUSI 167-168. PRIVATE BRASS LESSON - FRENCH HORN. This course consists of one-half hour for one credit (167) or one full hour for two credits (168) of individual instruction on French horn. Included in the instruction are techniques for developing embouchure; fingerings and their alternates; and solo repertoire for the French horn.

Semester course, one or two hours.

MUSI 169-170. PRIVATE BRASS LESSON - TROMBONE. This course consists of one-half hour for one credit (169) or one full hour for two credits (170) of individual instruction on the trombone. Special emphasis is placed on slide positions, embouchure, trigger fingerings, and appropriate repertoire.

Semester course, one or two hours.

MUSI 171-172. PRIVATE BRASS LESSON - TRUMPET. This course consists of one-half hour for one credit (171) or one full hour for two credits (172) of individual instruction on the trumpet. The student will become familiar with solo repertoire as well as fingerings and their alternates, tone quality, embouchure, and breathing techniques.

Semester course, one or two hours.

MUSI 173-174. PRIVATE BRASS LESSON - BARITONE/TUBA. This course consists of one-half hour for one credit (173) or one full hour for two credits (174) of individual instruction for the student to develop proficiency on one of the lower brass instruments: baritone/euphonium or tuba. Playing techniques; fingerings and their alternates; tone quality; embouchure; and a variety of appropriate literature for the instrument will be presented.

Semester course, one or two hours.

MUSI 175-176. PRIVATE BASSOON LESSON. This course consists of one-half hour for one credit (175) or one full hour for two credits (176) of individual instruction on the bassoon. The student will become familiar with fingerings, embouchure, reed making, and bassoon literature.

Semester course, one or two hours.

MUSI 177-178. PRIVATE CLARINET LESSON. This course consists of one-half hour for one credit (177) or one full hour for two credits (178) of individual instruction on the clarinet. The student will gain mastery of the basic techniques of performance including literature, intonation, hand position, articulation, fingerings, and embouchure.

Semester course, one or two hours.

MUSI 179-180. PRIVATE OBOE/ENGLISH HORN LESSON. This course consists of one-half hour for one credit (179) or one full hour for two credits (180) of individual instruction on the oboe or English horn. The student will become familiar with fingerings, embouchure, reed making and literature.

Semester course, one or two hours.

MUSI 181-182. PRIVATE PERCUSSION LESSON. This course consists of one-half hour for one credit (181) or one full hour for two credits (182) of individual instruction on all of the percussion instruments. The course teaches playing techniques, fundamentals of each instrument, and literature.

Semester course, one or two hours.

MUSI 183-184. PRIVATE FLUTE LESSON. This course consists of one-half hour for one credit (183) or one full hour for two credits (184) of individual instruction for the student who is interested in developing knowledge of flute literature; technique; tone quality and vibrato; fingerings; and embouchure.

Semester course, one or two hours.

MUSI 185-186. PRIVATE GUITAR LESSON. This course consists of one-half hour for one credit (185) or one full hour for two credits (186) of individual instruction for the student wishing to concentrate on techniques and fundamentals of guitar playing. Instruction is given on chords, harmonic structure, scales, and literature.

Semester course, one or two hours.

MUSI 187-188. PRIVATE HARP LESSON. This course consists of one-half hour for one credit (187) or one full hour for two credits (188) of individual instruction at the harp. Must have prior harp or piano experience.

Semester course, one or two hours.

MUSI 189-190. PRIVATE STRING LESSON - BASS. This course consists of one-half hour for one credit (189) or one full hour for two credits (190) of individual instruction on the string bass. Students will improve technical skill as well as become familiar with string literature for the bass.

Semester course, one or two hours.

MUSI 191-192. PRIVATE SAXOPHONE LESSON. This course consists of one-half hour for one credit (191) or one full hour for two credits (192) of individual instruction on the saxophone. The student will gain mastery of the basic techniques of performance including literature, intonation, hand position, articulation, fingerings, and embouchure.

Semester course, one or two hours.

MUSI 198. MUSIC RECITAL ATTENDANCE FOR MUSIC MINORS. Students fulfill this requirement by attending four recitals each semester they are enrolled as music minors. Students minoring in music must register for this course each semester.

Semester course, zero hours.

MUSI 199. MUSIC RECITAL ATTENDANCE FOR MUSIC MAJORS. Students fulfill this requirement by attending a predetermined number of faculty, senior and student recitals each semester. Music majors, other than those in Music Education, must register for this course each semester. Music Education majors must register for this course each semester, except for the student teaching semester. The student's academic advisor will monitor compliance with this requirement.

Semester course, zero hours.

MUSI 202. INTRODUCTION TO MUSIC EDUCATION. This course is designed for students majoring in music education. This course is intended to be taken concurrently with Foundations of

Teaching (EDUC 202). This course focuses a close lens on the many facets of music education, including the historical and philosophical foundations of music education, special education in the music classroom, curriculum/lesson/unit planning and assessment, as well as the political and social issues facing music educators today. This course requires students to participate in class discussions and to write a formal paper focusing on a topic relevant to the course. Corequisite: Education 202.

Semester course, one hour.

MUSI 203. MUSIC THEORY III. The third in a sequence of four music theory courses. Forms and analysis are covered, including binary form, ternary form, variations, rondo and sonata form. In addition, the elements of chromatic harmony, including harmonic sequences, applied chords, tonicization, modulation, modal mixture, Neapolitan chords, and augmented chords are studied. This course meets the Speaking Intensive (SI) requirement for music majors. Prerequisite: Music 103 and 104.

Fall semester only, two hours.

MUSI 204. MUSIC THEORY IV. The fourth in a sequence of four music theory courses. This course covers tonal ambiguity, enharmonic modulation, altered common tone chords, chromatic sequences, intervallic cells, and the division of the octave. Twentieth-century topics and techniques are studied, including impressionism, neo-classicism, quartal harmony, serialism, set theory, minimalism, and electronic techniques. This course meets the Speaking Intensive (SI) requirement for music majors. Prerequisite: Music 203.

Spring semester only, two hours.

MUSI 205. AURAL SKILLS III. The third in a sequence of four courses that develop aural recognition through sight singing and dictation. Skill sets include recognition of harmonic and melodic intervals, modes, triads and seventh chords, and harmonic progressions. Prerequisites: Music 105 and 106.

Fall semester only, two hours.

MUSI 206. AURAL SKILLS IV. The fourth in a sequence of four courses that develop aural recognition through sight singing and dictation. Skill sets include compound intervals, melodic dictation with modulating melodies, and progressions with seventh chords and secondary harmony. Prerequisite: Music 205.

Spring semester only, two hours.

MUSI 207. WOODWIND METHODS. Class instruction in the woodwind instruments with emphasis on the development of the instrumental program in the schools. Prerequisite: Music Major/Minors only or with the permission of the instructor.

Fall semester only, one hour.

MUSI 209 VOCAL METHODS. An overview course aimed at music education and voice performance majors including instruction concerning the mechanics of vocal sound production, vocal teaching methods, and identifying and correcting vocal faults in the private studio and the choral setting. Prerequisite: Music major and minors only, or with the permission of the instructor.

Spring semester only, one hour.

MUSI 210. INTRODUCTION TO MUSICAL THEATRE. This class is a survey of the development of musical theatre as a performing art form in America from 1750 to the present. By looking at musical theatre from multiple perspectives--historical, cultural, political, social, aesthetic – the class will explore the ways in which musicals both reflect and embody values and trends of the cultural landscape in which they were written. Included will be practical study of the format of the libretto and musical score in relationship to the major musical theatre genre. Students may only receive credit for one of Music 210 or Theatre 210.

Semester course, three hours.

MUSI 211. VOCAL DICTION. This course is aimed at music education and voice performance majors and will include instruction concerning the International Phonetic Alphabet; diction rules for singing in Italian, French, German, and English; and the accurate pronunciation of sung Italian, French, English, and German. The course meetings will consist of lecture, audio/video examples, and class participation.

Semester course, two hours.

MUSI 219. BEGINNING CONDUCTING. A study of the fundamentals of conducting and rehearsal strategies with an emphasis on beginning instrumental and choral techniques. Emphasis is placed on

developing baton technique and hand gestures, score study, and developing a comprehensive approach to conducting. *Semester course, one hour.*

MUSI 221. MUSIC TECHNOLOGY. This course provides the student with music notation experience, audio processing experience, background in music industry practices (including music copyright), and provides experience with creating social-media rich websites. This course meets the Information Literacy (IL) requirement for music majors. *Semester course, two hours.*

MUSI 222. MUSICAL THEATRE WORKSHOP. This course is designed to educate students about the musical theatre genre and all of its sub-genres through research, writing, rehearsal, and performance, and to improve their singing, acting, and performance skills. The main focus of class meetings will be rehearsal of assigned scenes according to registered students' abilities. Students will learn at least one musical theatre scene, memorize it, block it, and perform it in a public performance at the end of the semester. *Semester course, two credits.*

MUSI 223. OPERA WORKSHOP. This course will introduce the student to selected scenes from operas. There will be a focus on scene analysis and character development within the context of an operatic role. Class will encourage singers to integrate the vocal and physical connection of theater with language and music. Course may be repeated. *Semester course, one hour.*

MUSI 224. KEYBOARD PEDAGOGY. This course explores aspects of the piano teaching profession, including techniques and methods for various ability levels, repertoire selection, and the business aspects of the career field. *Alternate years, fall semester only, one hour.*

MUSI 230. JAZZ HISTORY. A study of the literature and culture of jazz music and jazz musicians of the 20th and 21st centuries. The course discusses the people, history, and compositions of jazz with a focus on the musical characteristics that define early jazz, swing, bebop, fusion, experimental and modern jazz styles. Although a background in music is helpful, it is not required. *Fall semester only, three hours.*

MUSI 260. INDEPENDENT STUDY. Individual study of a specialized topic(s) in music. Sophomore standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

MUSI 270. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in music. Sophomore standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

MUSI 290. STUDIES IN MUSIC. Intensive examination of an area of music not fully covered by regular departmental offerings. Subject matter varies each semester. *Offered periodically, semester course, one, two, or three hours.*

MUSI 302. LITERATURE OF MUSIC. A non-technical survey of the great musical compositions of Western civilization by way of classroom listening. Recommended for non-music majors. *Fall semester only, two hours.*

MUSI 303. COUNTERPOINT. A study of the contrapuntal style and practices of Palestrina and other masters of the sixteenth century; compositions of modal counterpoint in two, three and four parts. Prerequisite: Music 203 or 204. *Alternate years, semester course, one hour.*

MUSI 304. ORCHESTRATION. A study of the variety and characteristics of the brass, reed, string and percussion instrument families, progressing from solo instruments through scoring for full band and orchestra. The ability to read music and a basic understanding of music theory is desirable but not required. Prerequisite: Music 204. *Spring semester only, two hours.*

MUSI 307. STRING METHODS. Class instruction in the string instruments of the orchestra; methods of instruction for younger orchestra, with emphasis on the principles of tone production,

intonation, bowing, and phrasing. Prerequisite: Music major and minors only, or with the permission of the instructor. *Fall semester only, one hour.*

MUSI 311. KEYBOARD HARMONY. An elective course in harmonic practice at the keyboard. Prerequisite: Music 204. *Alternate years, semester course, one hour.*

MUSI 315. MUSIC METHODS FOR ELEMENTARY TEACHERS. A study of music materials and teaching methods designed to prepare the elementary and preschool teacher to engage students in musical learning experiences. Prerequisite: Sophomore standing. *Semester course, one hour.*

MUSI 317. ADVANCED CHORAL CONDUCTING. A course for students desiring further experience in conducting advanced choral material. Prerequisite: Music 219. *Fall semester only, two hours.*

MUSI 318. ADVANCED INSTRUMENTAL CONDUCTING. A course for students desiring further experience in conducting advanced instrumental material. Prerequisite: Music 219. *Spring semester only, two hours.*

MUSI 325. CHURCH MUSIC. A historical and theological study of church music, a study of hymns and practical application. *Spring semester only, two hours.*

MUSI 326. INTRODUCTION TO THE BUSINESS OF MUSIC. This course is designed as an introduction to the business of music, providing students with the latest instruction on best practices for music creators, consumers, and facilitators working in this field. Students will have the opportunity to learn the fundamental principles involved in the entrepreneurial and legal dimensions of the music business, exploring the structural and functional components of this ever-changing and rapidly-growing industry. Particular attention will be given to the challenges of starting, growing and managing a music business in the digital era. Students may only receive credit for one of Entrepreneurship 326, Management 326, or Music 326. *Semester course, three hours.*

MUSI 327. PIANO LITERATURE. This course is a study of the literature for the piano, beginning with works of the 17th century intended for harpsichord, and ending with the 20th century works for the modern piano. The course includes a general overview of keyboard music in each historical era, as well as a selective list of works from each era for in-depth study. The historical approach highlights the development of the instrument and the development of compositional styles, performance practices, pianistic idioms, and playing techniques. *Offered one semester every third year, two hours.*

MUSI 328. WIND LITERATURE. This course has been designed to prepare instrumental music majors to analyze, aurally and visually, the repertoire of the modern-day concert band. Topics to be explored include, but are not limited to, various time periods, genres and geographical influences on concert wind band composition; analysis of compositions for various compositional elements and historical background; and compositional form, instrumentation, pedagogy, and performance practices. *Offered one semester every other year, two hours.*

MUSI 329. WORLD MUSIC: AFRICA AND THE AMERICAS. This course will study the music, culture, and unique musical traditions resulting from the confluence of African culture and European culture, a result of European colonialism. The course includes various musical/cultural traditions of South America, Latin America, the Caribbean Islands, and North America. *Alternate years, spring semester only, three hours.*

MUSI 330. WORLD MUSIC: ASIA AND THE MIDDLE EAST. This course will study the musical systems of Asian music, comparing and contrasting the musical/cultural traditions of East Asia, South Asia, Southeast Asia, and Oceania (including, but not limited to, China, Japan, Korea, Thailand, Vietnam, Cambodia, and Indonesia), and the Middle East. *Alternate years, spring semester only, three hours.*

MUSI 331. MUSIC HISTORY I. A survey of music in Western civilization from ancient Greece to 1750. This course, along with Music 221 and 332, meets the Writing Intensive (WI) and Information Literacy (IL) requirements for music majors. Prerequisite: Humanities 301.

Fall semester only, three hours.

MUSI 332. MUSIC HISTORY II. A survey of music in Western civilization from 1750 to the present. This course, along with Music 221 and 331, meets the Writing Intensive (WI) and Information Literacy (IL) requirements for music majors. Prerequisite: Humanities 301. *Spring semester only, three hours.*

MUSI 333. VOCAL LITERATURE. This course will provide an overview of art songs composed in German, French, Italian, and English from the 17th through 21st centuries. The main objective of this course is to improve students' knowledge of core vocal literature in the art song genre through investigation into composers' lives, works, compositional style, and composers' relationships with poets and poetry. Issues of interpretation and performance practices will also be addressed.

Semester course, two hours.

MUSI 334. ORCHESTRAL LITERATURE. This course has been designed to prepare instrumental music majors to analyze, aurally and visually, the repertoire of the modern-day symphony orchestra. Topics to be explored include, but are not limited to, various time periods, genres and geographical influences on orchestral composition; analysis of compositions for various compositional elements and historical background; and compositional form, instrumentation, pedagogy, and performance practices.

Offered one semester every other year, two hours.

MUSI 360. INDEPENDENT STUDY. Individual study of a specialized topic(s) in music. Junior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

MUSI 370. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in music. Junior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

MUSI 376. JUNIOR RECITAL. The junior recital represents a preliminary step toward the senior capstone recital, which is the culmination of study in an area of applied performance. The recitalist demonstrates knowledge of the technique, repertoire, and stylistic interpretation that has been acquired in the applied area during the previous semesters of study. The junior recital is a one-half hour public performance. Prerequisites: Performance major with junior standing.

Semester course, one hour.

MUSI 403. COMPOSITION. An elective course in music composition. This course discusses the fundamentals of music composition in terms of melody, harmony, form, texture and timbre with both an historical perspective (referencing masterpieces from the 12th through 21st centuries) and the opportunity to develop a personal compositional style. The bulk of the course is devoted to work on original student compositions. Prerequisite: Music 204.

Fall semester only, two hours.

MUSI 426. MUSIC MARKETING. This course will provide students with an overview of key music marketing principles, terms, and practices, which together form the foundation for all music marketing plans. Students will dig into the key areas of opportunities for musicians, including publicity, advertising, promotion (online and traditional), digital distribution, touring, licensing/synch, and radio. Students will learn what companies and partners to work with to reach their core fans, how to communicate with them, and the ways to leverage the changes and new opportunities that the internet offers to marketers. In addition, they will learn marketing ideas to help them describe their vision, identify a market need, analyze an artist's fan base, learn from their competitors, set marketing plan goals, and find the perfect mix of new marketing strategies ranging from branding, product, price, place, promotion, and marketing information systems. Students may only receive credit for one of Music 426, Marketing 426, or Entrepreneurship 426. Prerequisite: Marketing 204.

Fall semester only, three hours.

MUSI 460. INDEPENDENT STUDY. Individual study of a specialized topic(s) in music. Senior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

MUSI 470. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in music. Senior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

MUSI 475-476. SENIOR CAPSTONE RECITAL. The senior capstone recital is the culmination of study in an area(s) of applied performance. The recitalist demonstrates knowledge of the technique, repertoire, and stylistic interpretation that has been acquired in the applied area(s) during the previous semesters of study. The senior recital is a public performance. Performance majors will complete a full one-hour recital (MUSI 475) for two credits. Music, Music/Business, Music K-12 Education, and Music/Religion majors will complete a one-half hour recital (MUSI 476) for one credit.

Semester course, one to two hours.

MUSI 488. SEMINAR IN MUSIC. Available only by permission of the department and the instructor involved.

Semester course, one, two or three hours.

MUSI 499. HONORS IN MUSIC. A course beyond the regular requirements for the music major. Available only to students with senior status and on an individual basis. *Semester course, one hour.*

DEPARTMENT OF PHYSICS

Dr. Clem, Chair; Dr. Brower, Dr. Marsch, Dr. Wagner, Dr. Wolinski.

Course Requirements for Bachelor of Science Degree in Physics (PHYS)—81 hours

Physics Core (32 hours):

Physics 101, 102, 135, 210, 234, 288, 303, 305, 321, 431, and Astronomy 207.

Physics Electives—choose 12 hours from:

Physics 304, 310, 340, 401 or 402, 421, or 442.

Technical Core requirements (26 hours):

Chemistry 105; Computer 141; Mathematics 161, 162, 261, 262, 263; and Physics 242.

Technical Electives (11 hours):

Courses must be approved by the department.

Courses that count in the PHYS major quality point average (MQPA):

All courses with “PHYS” and “ASTR” prefixes. A minimum MQPA of 2.00 is required to graduate.

Course Requirements for a Bachelor of Science Degree in Physics and Secondary Education Certification (PSED)—113 hours

Physics Core (32 hours):

Physics 101, 102, 135, 210, 234, 288, 303, 305, 321, 431, and Astronomy 207.

Physics Electives—choose 12 hours from:

Physics 304, 310, 340, 401 or 402, 421, or 442.

Technical Core requirements (26 hours):

Chemistry 105; Computer 141; Mathematics 161, 162, 261, 262, 263; and Physics 242.

Technical Electives (6-8 hours):

Courses must be approved by the department.

Education Requirements (37 hours):

Education 202, 203, 305, 309, 371, 431, 488; Psychology 102; and Special Education 101.

Courses that count in the PSED certification quality point average (MQPA):

All courses with “PHYS” and “ASTR” prefixes. A minimum CQPA of 3.00 and MQPA of 2.75 are required for certification.

Course Requirements for a Bachelor of Science Degree in Physics and General Science Secondary Education Certification (PGSE)—95 hours

Physics Core (26 hours):

Physics 101, 102, 135, 210, 234, 288, 321, 486, and Astronomy 207.

Technical Core requirements (26-27 hours):

Chemistry 105; Computer 141; Geology 201 or Science 204; Mathematics 161, 162, 261; and Science 202 or Biology 101.

Technical Electives (6 hours):

Courses must be approved by the department.

Education requirements (37 hours):

Education 202, 203, 305, 309, 371, 431, 488; Psychology 102; and Special Education 101.

Courses that count in the PGSE major quality point average (MQPA):

All courses with “PHYS”, “ASTR”, and “EDUC” prefixes; Psychology 102; and Special Education 101. A minimum CQPA of 3.00 and MQPA of 2.75 are required for certification.

Course Requirements for Bachelor of Science Degree in Physics/Computer (PCMP)—87-89 hours

Physics/Computer Core requirements (40 hours):

Physics 101, 102, 135, 234, 242, 288, 303, 321, 442; Astronomy 207; Computer Science 141, 244, 252, and 342.

Technical Elective (3 hours):

Choose one of the following: Physics 304, 305, 421, or 431.

Technical Core requirements (23 hours):

Chemistry 105; Mathematics 161, 162, 213, 261, 262, and 263.

Hardware or Software Option

Choose one of the following options:

Computer Software option (22-23 hours):

Computer Science 220, 222, 322, 340, 350; Physics 210; and one of Electrical Engineering 204, Computer Science 480 or Physics 470 (limit 3 hours), Computer Science 314, or any 400-level computer course; or Mathematics 222*.

* *Students who elect Mathematics 222 will also receive a minor in Mathematics.*

Computer Hardware option (21 hours):

Electrical Engineering 201, 202, 204, 251, 252, 306, 310, and Computer Science 220.

Courses that count in the PCMP major quality point average (MQPA):

All courses with “PHYS”, “ASTR”, “COMP”, and “ELEE” prefixes, MATH 222. A minimum MQPA of 2.00 is required to graduate.

Course Requirements for a minor in Physics (18 hours)

A minor in Physics will consist of Physics 101, 102, 135, 234, and six hours from Physics 303, 305, 310, 431 or 442 (Electrical Engineering majors may not take Physics 305).

Course Requirements for a minor in Astronomy (21 hours)

A minor in Astronomy will consist of Physics 101 or 121; Physics 102 or 122; and Astronomy 206, 207, 301, and 310.

Course Requirements for a minor in Medical Physics (19 hours)

A minor in Medical Physics will consist of Physics 101 or 121; Physics 102 or 122; and Physics 234, 321, 401, and 402.

Training in both oral and written communication skills is an oft-neglected part of the undergraduate science curriculum. At the same time, communicating one's ideas and results in a clear and coherent manner is an essential skill for a scientist, requiring clarity of thought and expression. In addition, a scientist must know how to find, analyze, and use information developed by others in their field. To address these concerns, all physics majors are required to take Physics 288 as a Writing Intensive (WI) course and Physics 321 as a Speaking Intensive (SI) and Information Literacy (IL) course. In tandem, these courses provide focused, discipline specific training in the areas of oral and written communications as well as the ability to gather, analyze and use information within the field of physics.

Students are expected to contact their advisors for a detailed schedule of courses recommended to meet requirements for a major.

PHYSICS (PHYS)

PHYS 101. GENERAL PHYSICS I-ENGINEERING. A calculus-based study of mechanics including kinematics, Newton's laws of motion, work, energy, momentum, equilibrium, angular motion, fluids, oscillations, and gravity. Three lectures and one lab per week. Students may not receive credit for both Physics 101 and 121. Corequisite: Mathematics 161. *Semester course, four hours.*

PHYS 102. GENERAL PHYSICS II – ENGINEERING. A survey of the fundamental principles of electricity, magnetism, Maxwell's equations, and circuit theory. Three lectures and one lab per week. Prerequisite: Physics 101. Corequisite: Mathematics 162. *Semester course, four hours.*

PHYS 121. COLLEGE PHYSICS I. A study of mechanics at the pre-calculus level with applications to the life sciences. Topics include kinematics, Newton's laws, work, energy, momentum, angular motion, fluids, oscillations, and gravity. Three lectures and one lab per week. Students may not receive credit for both Physics 101 and 121. *Fall semester only, four hours.*

PHYS 122. COLLEGE PHYSICS II. A study of electricity, magnetism, geometric and physical physics at the pre-calculus level with applications to the life sciences. Topics include electric field and potential, DC circuits, magnetism, induction, geometric and physical optics, relativity, and nuclear physics. Three lectures and one lab per week. Prerequisite: Physics 121. *Spring semester only, four hours.*

PHYS 135. HORIZONS IN PHYSICS. Discussion of current topics in physics. Since scientific journals will provide much of the content for this course, students will learn how to acquire and interpret articles from scholarly publications. In addition, students will be required to attend presentations by physicists actively engaged in research, as well as field trips to academic and industrial laboratories in the area. This course is open to all students but, in the event that the class becomes full, preference is given to physics majors. *Fall semester only, one hour.*

PHYS 210. ELECTRONICS. An introduction to electronics emphasizing those topics most useful to the experimental physicist. As such, the physics of active and passive devices (resistors, capacitors, inductors, diodes, transistors, sensors, etc.) will be discussed along with practical circuit applications (filters, operational amplifiers, voltage regulators, oscillators, timers, etc.). The bulk of this course is devoted to analog electronics but digital electronics is discussed briefly at the end of the semester. Three hours of lecture and three hours of lab per week. Prerequisite: Physics 102.

Fall semester only, four hours.

PHYS 234. MODERN PHYSICS. An introduction to modern physics. Two essential areas will be covered: the special theory of relativity and the origins of quantum mechanics. Prerequisite: Physics 122 and Mathematics 162.

Spring semester only, three hours

PHYS 242. INTRODUCTION TO THEORETICAL PHYSICS. An introduction to problem-solving techniques used to describe physical phenomena. Includes topics from complex analysis, probability theory, vector calculus, Fourier series and transforms, matrix algebra, differential equations (ordinary and partial), and special functions. Prerequisites: Mathematics 261 and Physics 102, or by permission.

Spring semester only, three hours.

PHYS 260. INDEPENDENT STUDY. Individual study of specialized topics in physics. Sophomore standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

PHYS 270. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in physics. Freshman or sophomore standing, permission of the department, and a faculty sponsor are required.

Semester course, one, two or three hours.

PHYS 288. INTERMEDIATE LABORATORY. This course is designed to teach students the *process* of scientific investigation, transitioning them from introductory, cook-book labs to actual experimental design and execution. Experiments cover a variety of topics from classical and modern physics including propagation of error, waves, thermodynamics, optics, spectrophotometry, speed of light, and the photoelectric effect. This course is designed to fulfill the requirements for a Writing Intensive (WI) course in the physics major.

Spring semester only, two hours.

PHYS 303. MECHANICS I. The application of mathematical methods to the study of the general motion of particles; Newtonian and Lagrangian mechanics; Hamilton's equations; oscillations; nonlinear dynamics including chaotic systems; and central force motion. Prerequisites: Physics 101 and either Math 262 or Physics 242, or consent of instructor.

Fall semester only, three hours.

PHYS 304. MECHANICS II. A continuation of Mechanics I. Topics covered include dynamics of a system of particles, motion in a non-inertial reference frame, dynamics of rigid bodies, coupled oscillations and waves, and statistical mechanics. Prerequisite: Physics 303.

Alternate years, spring semester only, three hours.

PHYS 305. ELECTRICITY AND MAGNETISM. A study of the fundamental principles of electricity and magnetism. Topics covered include vector calculus, electric field and potential, polarization, electric displacement, linear dielectrics, magnetostatics, and electrodynamics. Prerequisites: Physics 102 and Physics 242 or Mathematics 262.

Fall semester only, three hours.

PHYS 310. OPTICS. A study of electromagnetic waves. Topics covered include the Maxwell equations, geometric optics, interference, diffraction, polarization, coherence, holography, and topics from nonlinear optics. Prerequisites: Physics 305 or Electrical Engineering 304.

Spring semester only, three hours.

PHYS 321. RADIATION LABORATORY. An experimental study of the detection and characteristics of alpha, beta, gamma, and neutron radiation. One lecture and one lab per week. Physics 321 is designed to fulfill the requirements for a Speaking Intensive (SI) and Information Literacy (IL) course in the Physics major. Prerequisite: 234 or consent of the department.

Spring semester only, two hours.

PHYS 340. THERMODYNAMICS AND STATISTICAL MECHANICS. A study of thermodynamics and statistical mechanics that includes topics such as heat and work; ideal gases; equipartition of energy, entropy, Boltzmann, Fermi-Dirac, and Bose-Einstein distributions; and applications to heat engines, refrigeration, chemical equilibrium, phase transitions, blackbody radiation, and properties of solids. Prerequisites: Physics 234, and 242, or permission of the instructor.

Fall semester only, three hours.

PHYS 360. INDEPENDENT STUDY. An opportunity for independent study of specialized topics in physics. Junior standing, permission of the department, and a faculty sponsor are required.

Semester course, one, two, or three hours.

PHYS 370. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in physics. Junior standing, permission of the department, and a faculty sponsor are required.

Semester course, one, two or three hours.

PHYS 390. STUDIES IN PHYSICS. Examination of different areas in the field of physics not offered by regular course work. Subject matter varies each semester.

Semester course, three hours.

PHYS 401. RADIATION AND HEALTH PHYSICS. A study of radiation therapy principles in medicine. Topics include how radiation is generated and how it interacts with human tissue, dose limits and how they are calculated, radiation safety, and electron and proton beam therapy. Prerequisite: Physics 234.

Alternate years, spring semester only, three hours.

PHYS 402. MEDICAL IMAGING AND DIAGNOSTIC PHYSICS. This course serves as an introduction to x-ray radiography and advanced diagnostic medical imaging techniques like x-ray tomography (CAT), ultrasound, magnetic resonance imaging, and positron emission tomography. Prerequisite: Physics 234.

Alternate years, spring semester only, three hours.

PHYS 421. ADVANCED TOPICS. An in-depth course in an advanced physics topic (or topics) chosen by the instructor. Content can vary from year to year but may include areas such as general relativity, nuclear physics, elementary particle physics, solid-state physics, nanotechnology, etc. Prerequisites: Physics 234; and Mathematics 262 or Physics 242.

Fall semester only, three hours.

PHYS 431. QUANTUM MECHANICS. A study of wave-particle duality, the Bohr atom, and the development of quantum mechanics and its application to the periodic table and the nucleus, and solving the Schrödinger equation for several 1D systems and for the Bohr atom. Prerequisites: Physics 234, 303, and Mathematics 262 or Physics 242.

Spring semester only, three hours.

PHYS 442. COMPUTATIONAL METHODS IN PHYSICS. An advanced course in the solution of physics problems using computer programming and numerical techniques for ordinary differential equations, partial differential equations, algebraic equations, spectral analysis, optimization, and numerical integration. Corequisites: Computer 141; Physics 303; and Mathematics 262 or Physics 242.

Alternate years, spring semester only, three hours.

PHYS 460. INDEPENDENT STUDY. An opportunity for independent study of specialized topics in physics. Senior standing, permission of the department, and a faculty sponsor are required.

Semester course, one, two, or three hours.

PHYS 470. PHYSICS RESEARCH. An opportunity to conduct supervised research in physics. Senior standing, permission of the department, and a faculty sponsor are required.

Semester course, one, two, or three hours.

PHYS 480. INTERNSHIP IN PHYSICS. Selected students participate in individual field experiences under the supervision of an on-site manager and a department faculty member. Requirements include evaluation by the on-site manager, a journal of the internship experience, a final written paper, and an oral presentation describing the completed work. Prerequisite: Permission of the faculty sponsor and coordination with the internship site. *Semester course, one to six hours.*

PHYS 486. PHYSICS EDUCATION SEMINAR. This seminar assists students in their understanding of the basic principles of physics and helps them to learn teaching methods unique to physics. Students will discuss modern research-based educational approaches in physics and assist in instructing the Science 201 class. Prerequisite: Physics education majors only, or permission of the instructor. *Semester course, three hours.*

PHYS 488. SEMINAR IN PHYSICS. An opportunity for a student to undertake a project in an area of physics of special interest. Project approval and amount of credit to be given requires consent of the department. *Semester course, one, two or three hours.*

PHYS 499. HONORS IN PHYSICS RESEARCH. Seniors who have shown special aptitude in physics may, with the consent of the Department of Physics, undertake supervised physics research. A research paper and a formal presentation are required to receive Honors credit. Not to exceed two hours each semester. *Semester course, one or two hours.*

ASTRONOMY (ASTR)

ASTR 206. INTRODUCTION TO SKY MOTIONS AND PLANETS. An introduction to modern astronomy with an emphasis on the motions of the sun, moon, and stars in the sky; the solar system; and extrasolar planets. Includes observations with the campus observatory and an observational project. Open to all students. *Fall semester only, three hours.*

ASTR 207. INTRODUCTION TO STARS, GALAXIES, AND COSMOLOGY. An introduction to modern astronomy with an emphasis on the nature of the universe and objects within it. Topics include the properties of stars, the stellar life cycle, galaxies, and cosmology. Includes an observational project. Open to all students. *Spring semester only, three hours.*

ASTR 260. INDEPENDENT STUDY. Individual study of specialized topics in astronomy. Sophomore standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

ASTR 270. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in astronomy. Sophomore standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

ASTR 301. OBSERVATIONAL ASTRONOMY. Methods employed in modern optical observational astronomy. Topics covered include spherical trigonometry, time and coordinate systems, astronomical instruments, photometry, and spectroscopy. Students make extensive use of the campus observatory and the Grove City College observatory near Edinboro, Pennsylvania. Prerequisites: Astronomy 206 and 207. *Alternate years, fall semester only, four hours.*

ASTR 310. INTRODUCTION TO ASTROPHYSICS. A calculus-based introduction to modern astrophysics. Topics covered include orbital mechanics, light and matter interactions, stellar atmospheres, stellar interiors, stellar evolution, the interstellar medium, the Milky Way, other galaxies, and cosmology. Prerequisites: Astronomy 206 and 207; Mathematics 161; Physics 101 or 121; and Physics 102 or 122. *Alternate years, fall semester only, three hours.*

ASTR 360. INDEPENDENT STUDY. Individual study of specialized topics in astronomy. Junior standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

ASTR 370. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in astronomy. Junior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

ASTR 460. INDEPENDENT STUDY. Individual study of specialized topics in astronomy. Senior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

ASTR 470. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in astronomy. Senior standing, permission of the department chair, and a faculty sponsor are required.

Semester course, one, two or three hours.

DEPARTMENT OF POLITICAL SCIENCE

Dr. Stanton, Chair; Dr. Coulter, Dr. Kengor, Dr. Verbois. Additional Instructional Faculty: Mr. Ball, Mr. Bonner.

Course Requirements for Bachelor of Arts Degree in Political Science (POLS)—43 hours

Core Requirements (19 hours):

Political Science 101, 104, 201, 204, 205, and 277.

Political Science Clusters (12 hours):

Choose two courses from two of the following clusters for a total of 12 hours:

American Politics:

Political Science 304, 305, 306, 308, 309, 317, 318, or 319.

Comparative/International Relations:

Political Science 302, 303, 310, 311, 333, 335, 341, 342, or 344.

Political Theory:

Political Science 350, 351, 354, 355, 356, or 357.

Political Science Electives (12 hours):

Choose twelve additional hours of 300-400 level Political Science electives. Note: Completion of Political Science 481 (12 credits) will not fulfill the Political Science Electives in full as only six credits of internship may apply toward the major requirements. The remaining six credits will count as general elective hours.

Courses that count in the POLS major quality point average (MQPA):

All courses with "POLS" prefix. A minimum MQPA of 2.00 is required to graduate.

Effective communication and research skills are indispensable for career advancement in the variety of fields available to Political Science majors, including law, government at all levels, and business. Thus, the Political Science Department has incorporated Information Literacy (IL), Speaking Intensive (SI), and Writing Intensive (WI) instruction in Political Science 277.

Recommended electives:

Students planning to do graduate work in Political Science are encouraged to acquire backgrounds in mathematics and statistics. Courses in computer literacy are also recommended. All Ph.D. programs require competency in at least two foreign languages as well. Students pursuing law school are advised to take Accounting courses, *Business Law*, *Constitutional Law*, and *Symbolic Logic*. A broad background in the social sciences, history, and the humanities is also recommended.

Course Requirements for a minor in Political Science (18 hours)

A minor in Political Science will consist of Political Science 104, 201, 204, 205, and six hours of Political Science electives.

Course Requirements for a minor in National Security Studies (18 hours)

A minor in National Security Studies will consist of Political Science 302, 303, 335, History 336; and six hours from Political Science 310, 341, 342, 344, History 337, 338, or 375.

Course Requirements for a minor in Pre-Law (18 hours)

A minor in Pre-Law will consist of Political Science 317, 318 (or History 317, 318); Political Science 351 or Philosophy 340; Philosophy 211; and six hours from Accounting 201; Communication Studies 104; Management 303, 304, 308; Philosophy 201; Political Science 305, 308; Sociology 331, or 333.

Students are expected to contact their advisors for a detailed schedule of courses recommended to meet requirements for a major.

POLITICAL SCIENCE (POLS)

POLS 101. FOUNDATIONS OF POLITICAL SCIENCE. A review of the principal methods of studying politics, the enduring issues of politics, and main institutions of selected governments in the world today. *Semester course, three hours.*

POLS 104. INTERNATIONAL POLITICS. An analysis of the growth of national states and the factors that determine their behavior in international affairs. Particular attention is given to problems of collective security, balance of power, foreign policy, and political economy. *Semester course, three hours.*

POLS 201. COMPARATIVE POLITICS. A selective study of major governments of the industrialized and non-industrialized world. Emphasis placed on the tools of comparative analysis and their application to various nations in the developed and developing world. *Fall semester only, three hours.*

POLS 204. AMERICAN NATIONAL GOVERNMENT. A survey of national political institutions including Congress, the Supreme Court, the presidency, public bureaucracy, and a review of selected topics in public policy. *Semester course, three hours.*

POLS 205. POLITICAL PHILOSOPHY AND THE CHRISTIAN INTELLECTUAL TRADITION. This course introduces students to the study of political philosophy through an examination of selected works of political philosophers, theologians, and political actors as those works consider the intersection of theology and political life. *Semester course, three hours.*

POLS 260. INDEPENDENT STUDY. Individual study of specialized topics in political science. Sophomore standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

POLS 270. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in political science. Sophomore standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

POLS 277. RESEARCH METHODS IN POLITICAL SCIENCE. An introduction to approaches and methods of political science research, with an emphasis on research design, data collection, interpretation, and the use of computers in the discipline. This course is taught with a lab. This course

fulfills the Writing Intensive (WI), Information Literacy (IL), and Speaking Intensive (SI) requirements for the Political Science major. *Semester course, four hours.*

POLS 302. NATIONAL SECURITY. A review of American national security policy including coverage of defense policy, military deployments, and threat assessments.

Alternate years, spring semester only, three hours.

POLS 303. GREAT POWER POLITICS. An examination of Great Power Politics with an emphasis on twentieth century developments. The course covers the sources of national strength, relations of great powers to one another and minor powers, the rise and decline of nations, and the end of the Cold War.

Offered periodically, semester course, three hours.

POLS 304. THE AMERICAN PRESIDENCY. A study of the major functions of the Presidency, with an emphasis on the Office's historical development and its role in American national government.

Fall semester only, three hours.

POLS 305. AMERICAN CONGRESS. An examination of the major functions and processes of Congress, with an emphasis on presidential-congressional relationships and the formation of public policy.

Offered periodically, semester course, three hours.

POLS 306. POLITICAL PARTIES, INTEREST GROUPS, AND ELECTIONS. An overview of the functions of American political parties with special attention to the role of interest groups in the policy process.

Offered periodically, semester course, three hours.

POLS 308. PUBLIC POLICY. A study of the main issues surrounding current topics in public policy, dealing with welfare and poverty, energy, environment, labor, business, agriculture, consumer policies, and selected issues in foreign policy. Variable credit in election years.

Offered periodically, semester course, three hours.

POLS 309. STATE AND LOCAL POLITICS. An examination of state and local governments and public policies. Topics include federalism, state constitutions, governors, legislatures, judiciary, politics of local governments, and policy debates surrounding local concerns as well as unfunded mandates and meeting federal guidelines.

Offered periodically, semester course, three hours.

POLS 310. U.S. FOREIGN POLICY. This course offers a general introduction to the traditions and theories of the U.S. foreign policy. The course will cover the traditions and theories of U.S. foreign policy; processes of policy formulation; and the roles of the President, Congress, the State Department, and other government agencies.

Semester course, three hours.

POLS 311. HUMAN RIGHTS. This course is a study of the ideological and theological foundations of human rights and the roles of states, international organizations, and non-governmental organizations in creating and managing human rights regimes.

Semester course, three hours.

POLS 317. CONSTITUTIONAL LAW OF THE UNITED STATES I. A study of the development of the United States Constitution through use of the case study method. This course especially focuses on the constitutional powers of the three branches of government, the relationship between state and federal governmental powers, and property rights and economic liberties. Students may not receive credit for both Political Science 317 and History 317.

Fall semester only, three hours.

POLS 318. CONSTITUTIONAL LAW OF THE UNITED STATES II. A study of the development of the United States Constitution through the use of the case study method. This course especially focuses on the idea of equality and the equal protection clause, due process, privacy and liberty rights, freedom of speech, press and religion and other Bill of Rights issues. Students may not receive credit for both Political Science 318 and History 318.

Spring semester only, three hours.

POLS 319. PUBLIC ADMINISTRATION. A study of the development, operation, and politics of administrative agencies and the public bureaucracy.

Semester course, three hours.

POLS 333. MAJOR EUROPEAN GOVERNMENTS. A comparative study of European politics with special emphasis on the major governments of Western Europe and the emerging republics of the former Soviet Union. Problems of European integration and the development of democracy in Eastern Europe are stressed.
Offered periodically, semester course, three hours.

POLS 335. TERRORISM AND COUNTER-TERRORISM. A survey of terrorism from ancient times to the present with an emphasis on current international groups like al Qaeda, Hezbollah and Hamas, as well as domestic terrorist groups like the Aryan Nations and Ku Klux Klan.
Offered periodically, three semester hours.

POLS 341. AFRICAN POLITICS. A comparative overview of the politics of major African states, with emphases upon the influences of the colonial past, problems of political development, relations with the major powers, the geo-strategic importance of selected countries.
Alternate years, fall semester only, three hours.

POLS 342. MIDDLE EASTERN POLITICS. A survey of major powers of the Middle East with emphases on problems of the colonial past, political development, tribal and religious influences, regional conflicts, and global strategic significance. *Alternate years, fall semester only, three hours.*

POLS 344. ASIAN POLITICS. A study of the major powers of Asia, with special reference to China, Japan and Korea, stressing problems of political and economic development, along with regional conflicts.
Alternate years, spring semester only, three hours.

POLS 350. AMERICAN POLITICAL THOUGHT. A survey of the foundations of American civilization from the origins of the republic to the present time. Special attention is given to current debates surrounding culture wars and their impact on public policy.
Offered periodically, semester course, three hours.

POLS 351. PHILOSOPHY OF LAW. This course commonly examines such topics as the nature of law, the relationship of law to morality, the problem of judicial interpretation, justice, and rights.
Alternate years, semester course, three hours.

POLS 354. MARXISM. A study of Marxism from its beginnings to its development into twentieth century totalitarianism by Lenin and his successors.
Offered periodically, semester course, three hours.

POLS 355. CLASSICAL POLITICAL THOUGHT. A study of the principle theorists and schools of thought about politics from the Pre-Socratics through the Middle Ages.
Fall semester only, three hours.

POLS 356. MODERN POLITICAL THOUGHT. A survey of the main political thinkers from Machiavelli to the present. The contributions of political theorists to the development of civilization are stressed.
Spring semester only, three hours.

POLS 357. POLITICAL IDEOLOGIES. A survey of modern ideologies including treatments of liberalism, conservatism, fascism, communism, democratic socialism, and Third World ideologies. Feminism, environmentalism, and related modern ideologies are also covered.
Offered periodically, semester course, three hours.

POLS 360. INDEPENDENT STUDY. Directed research on an individual basis. Junior standing, permission of the department chair, and a faculty sponsor are required.
Semester course, one, two or three hours.

POLS 370. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in political science. Junior standing, permission of the department chair, and a faculty sponsor are required.
Semester course, one, two or three hours.

POLS 390. STUDIES IN POLITICS. A focused study of selected topics in politics and political science, the content of which varies each semester. *Semester course, three hours.*

POLS 460. INDEPENDENT STUDY. Directed research on an individual basis. Senior standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

POLS 470. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in political science. Senior standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

POLS 480. INTERNSHIP IN POLITICAL SCIENCE. This course offers practical experience in the field of politics and political science. *Semester course, one to six hours.*

POLS 481. WASHINGTON INTERNSHIP. This program allows students to spend a semester in Washington working in a government office or for a private organization that deals regularly with public policy matters. For more information, see the "Washington Internship Program" section under General Education and Degree Programs. *Semester course, twelve hours.*

POLS 488. SEMINAR IN POLITICAL SCIENCE. Special topics in political science, the content of which varies each semester. Open to majors and non-majors with department approval. *Semester course, three hours.*

POLS 499. HONORS IN POLITICAL SCIENCE. Open only to qualified majors with department approval. *Semester course, one, two or three hours.*

DEPARTMENT OF PSYCHOLOGY AND SOCIAL WORK

Dr. Seybold, Chair; Dr. M. E. Bright, Ms. Hollenberger, Dr. K. Homan, Dr. Horton, Dr. Hosack, Dr. Houk, Dr. Throckmorton, Dr. Welton.

Course Requirements for Bachelor of Arts Degree in Psychology (PSYC)—48 hours

Core Requirements (26 hours):

Psychology 101, 201, 204, 208, 301, 310, 316, and 404.

Psychology Clusters (18 hours):

Choose two courses from each of the following clusters:

Experimental:

Psychology 306, 318, or 401.

Clinical:

Psychology 206, 207, or 312.

Developmental:

Psychology 209, 211, or 322.

Major-Related Requirements (4 hours):

Biology 101 or Science 202. (If Science 202 is taken, the other science course taken to fulfill the general science requirement cannot be a Biology course or SCIC 204.)

Courses that count in the PSYC major quality point average (MQPA):

All courses with "PSYC" prefix. A minimum MQPA of 2.00 is required to graduate.

Course Requirements for Bachelor of Science Degree in Psychology (PSYS)—54 hours

Core Requirements (42 hours):

Psychology 101, 201, 204, 208, 301, 310, 316, 318, 319, 401, 404, and nine hours of Psychology electives.

Major-Related Requirements (12 hours):

Biology 101, 102, and 233.

Courses that count in the PSYS major quality point average (MQPA):

All courses with “PSYC” prefix. A minimum MQPA of 2.00 is required to graduate.

Courses recommended for psychology majors include Philosophy 161 and 201. Students are encouraged to take an internship. No credit in independent study or internship may be counted toward the major requirements. Those students planning to do graduate work in psychology are encouraged to take Psychology 318, 401; Philosophy 161, and 201.

Psychology majors, regardless of whether they pursue graduate studies or enter the work force immediately following graduation, need to be good writers and speakers and need to know how to find, analyze, and use information. To that end, Psychology 204 and 404 are Writing Intensive (WI), Speaking Intensive (SI), and Information Literacy (IL) courses, designed to provide the necessary skills for psychology majors to be good producers and consumers of psychological information as well as effective communicators of that knowledge.

Course Requirements for Bachelor of Science Degree in Social Work (SOCW)—53 hours

Core Requirements (50 hours):

Psychology 201, 204; Social Work 101, 205, 264, 280, 302, 305, 310, 342, 364, 382, 410, 420, 425, and 426.

Social Work Electives (3 hours):

One course from Economics 102, Psychology 208, 312, or Sociology 208.

Courses that count in the (SOCW) major quality point average (MQPA):

All courses with “SOCW” prefix. A minimum MQPA of 2.00 is required to graduate.

SOCW 410 has been designated as the Writing Intensive (WI), Speaking Intensive (SI), and Information Literacy (IL) course for Social Work majors.

Course requirements for a minor in Family Studies (19 hours)

A minor in Family Studies will consist of Psychology 201; Sociology 312; one course from Psychology 204, Political Science 277, or Sociology 377; and three courses from Psychology 209, 211, 322, or Sociology 251.

Course Requirements for a minor in Psychology (18 hours)

A minor in Psychology will consist of 18 hours of Psychology courses, including Psychology 101, and excluding Psychology 102. Exercise Science 203 Exercise Psychology may also be counted toward the Psychology minor.

Course requirements for a minor in Social Work (21 hours)

A minor in Social Work will consist of Social Work 101, 264, 272, 342, 382, and six hours from Sociology 203, 208, Social Work 205, 280, 305, or Psychology 312.

Students are expected to contact their advisors for a detailed schedule of courses recommended to meet requirements for a major.

PSYCHOLOGY (PSYC)

PSYC 101. FOUNDATIONS OF PSYCHOLOGICAL SCIENCE. This course is designed to introduce the student to the field of psychology, which is defined as the scientific study of behavior and mental processes. Like other sciences, psychology seeks to explain, predict, and control the events it studies. Students will be exposed to the important theories, methods, and landmark findings that have helped to shape psychology as a field of inquiry. An integral focus of the course will be a consideration of how psychology can contribute to the synthesis of a consistent Christian worldview.

Semester course, three hours.

PSYC 102. EDUCATIONAL PSYCHOLOGY. A consideration of those aspects of psychology which form the basis for educational methods and their application in the school curriculum, including student characteristics, group and individual differences, cognitive and personality development, learning theory, measurement, and evaluation. This course satisfies the Information Literacy (IL) requirement for all education majors.

Semester course, three hours.

PSYC 105. PERSPECTIVES ON PSYCHOLOGY. This course is designed to fulfill the foundations requirement for students who have taken introductory psychology at another institution. The course will focus on the ways in which a Christian worldview impacts the study of psychology. Topics to be covered will complement those topics typically covered in the Foundations of Psychological Science course emphasizing the integration of Christianity and psychology. This course may not be taken by a student who has completed Psychology 101 at Grove City College. Prerequisite: any comparable Psychology 101 class taken at another institution.

Semester course, one hour.

PSYC 200. CROSS-CULTURAL PSYCHOLOGY. A study of the critical and comparative effects of cultural and international differences on human psychology. Topics will include cultural presuppositions and differences, cognition, emotion, intelligence, testing, motivation, conflict, and mental health, with a particular emphasis on human development, social psychology, and conflict.

Semester course, three hours.

PSYC 201. STATISTICAL METHODS. This course will examine the mathematical reasoning and methodology underlying decision-making in the sciences. Students will develop skills in the analysis and interpretation of data from scientific experiments, enabling them to be informed consumers of the professional literature. Topics will include descriptive statistics, probability theory, and inferential statistics. Students may only receive credit for one of Psychology 201, Management 201, or Mathematics 201.

Semester course, three hours.

PSYC 202. PSYCHOLOGY OF RELIGION. A psychological approach to the understanding of religious life with special emphasis on the Judeo-Christian tradition. In addition to traditional areas in the psychology of religion (e.g., religious development, measurement of religion and spirituality, forgiveness, religious conversion, religious orientation and attitudes, etc.) the course will consider issues surrounding the integration of psychology and theology, the innateness of spirituality, the nature of the soul or self, the neuroscience of religious experience, and the role of religion and spirituality in health. Prerequisite: Psychology 101.

Semester course, three hours.

PSYC 204. RESEARCH METHODS. Introduction to laboratory techniques in psychological science. Methods of controlled investigation, use of databases for psychology, evaluation of results using SPSS, and writing reports of experiments using APA format will be emphasized. Three lectures and two hours of lab per week. This course meets the Information Literacy (IL) requirement for the Psychology major. Prerequisites: Psychology 101 or Social Work 101, and Psychology 201.

Spring semester only, four hours.

PSYC 206. INTRODUCTION TO PROFESSIONAL COUNSELING. An introduction to the theories, practices and ethical issues employed in professional counseling. Prerequisites: Psychology 101 and 207.

Semester course, three hours.

PSYC 207. PSYCHOLOGY OF PERSONALITY. A study of the major psychological theories of personality development and their application to applied psychology. Prerequisite: Psychology 101.
Semester course, three hours.

PSYC 208. SOCIAL PSYCHOLOGY. The scientific study of the way individuals think, feel, and behave under the actual, imagined, or implied presence of others. Our study of social psychology will investigate the relationship between attitudes and behavior, attribution theory, cultural influences, conformity, prejudice, aggression, attraction, altruism, conflict, etc. We will concentrate on applying social psychology to real world experiences and will include in-depth analysis of original literature.
Semester course, three hours.

PSYC 209. CHILD DEVELOPMENT. This course is a survey of the child development field. Students will be encouraged to develop an appreciation for the value of science for understanding children and their development. Key theories and research regarding cognition, language, attachment, moral reasoning, and the effects of family and peers will be considered. This course is required for all Early Childhood and Elementary Education majors.
Semester course, three hours.

PSYC 211. ADULT DEVELOPMENT AND AGING. Investigation of the psychological, biological, and social aspects of early, middle, and late adult development emphasizing both the opportunities and limitations of aging.
Semester course, three hours.

PSYC 214. INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY. The psychology of work and organizations. Introduction to the use and application of psychology in the workplace. Prerequisites: Psychology 101 and 208.
Semester course, three hours.

PSYC 260. INDEPENDENT STUDY. Individual study of specialized topics in psychology. Sophomore standing, permission of the department chair, and a faculty sponsor are required.
Semester course, one, two or three hours.

PSYC 270. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in psychology. Sophomore standing, permission of the department chair, and a faculty sponsor are required.
Semester course, one, two or three hours.

PSYC 301. HISTORY AND SYSTEMS OF PSYCHOLOGY. A study of the philosophical and scientific antecedents and trends that have culminated in contemporary psychological science. Beginning in the Classical world and moving through the Middle Ages, Renaissance, and the scientific revolution of the 16th – 18th centuries, this course will trace how psychology emerged as an independent discipline at the end of the 19th century. Significant questions raised by psychology, changing views of the soul or self, and how American culture in the 21st century has become a psychological society will be considered. Primary works of influential philosophers and scientists will be read. Prerequisite: Twelve hours of psychology.
Semester course, three hours.

PSYC 305. HEALTH PSYCHOLOGY. Health psychology is devoted to understanding psychological influences on how people stay healthy, why they become ill, and how they respond when they do get ill. This course explores the psychological and social factors that lead to the enhancement of health, the prevention and treatment of illness, and the evaluation and modification of health policies that influence health care.
Semester course, three hours.

PSYC 306. SENSATION AND PERCEPTION. This course covers the physiological basis of sensation and the psychological aspects of perception. Vision, audition, the chemical and the cutaneous senses are investigated as are the perception of time, music, speech and pain. Prerequisite: Psychology 101.
Semester course, three hours.

PSYC 310. PSYCHOLOGICAL ASSESSMENT. This course will include a) an analysis of psychometric principles, including reliability, validity, and standardization; b) an analysis of intelligence, personality, and interest testing, including in-depth investigation of various tests; and c) an analysis of current issues including discrimination in testing. Prerequisites: Psychology 101 and 201. *Semester course, three hours.*

PSYC 312. ABNORMAL PSYCHOLOGY. This course provides an overview of the various psychological disorders, as well as theoretical, clinical, and experimental perspectives of the study of psychopathology. Emphasis is placed on classification, etiology, assessment and treatment of the major disorders. Prerequisites: Psychology 101 and three hours of psychology. *Semester course, three hours.*

PSYC 315. FORENSIC PSYCHOLOGY. This course introduces the student to psychological research, principles and practice as applied to the legal system. Emphasis will be placed on the interface between clinical work and the courts, as well as the psychology of the offender. Prerequisite: Psychology 101. *Semester course, three hours.*

PSYC 316. BEHAVIORAL NEUROSCIENCE. A study of the biological bases of behavior. Neuroanatomy and fundamental principles of neurophysiology and neural communication will be covered as will be the physiological mechanisms operating in sensation, emotion, consciousness, ingestive behavior, learning and memory, reinforcement, addiction, and psychiatric disorders such as schizophrenia. Prerequisite: Psychology 101 or permission of the instructor. *Semester course, three hours.*

PSYC 318. COGNITIVE PSYCHOLOGY. A study of human mental processes such as memory, reasoning, decision-making, judgment, and social cognition. Included will be a cognitive neuroscience perspective on mental processing and the practical implications of these processes in social evaluation, culture, and public policy. Prerequisites: Psychology 101, 201 and 204. *Semester course, three hours.*

PSYC 319. COGNITIVE PSYCHOLOGY LABORATORY. Using computer simulations of cognitive psychology methods, students will investigate human mental processes such as memory, attention, recognition, decision-making, problem-solving, and social evaluation. Prerequisites: Psychology 101, 201 and 204. *Semester course, one hour.*

PSYC 322. MARRIAGE & FAMILY: ASSESSMENT AND INTERVENTION. The course examines assessment and intervention in marriage and family with an emphasis on marriage. Primary sources examining empirically developed and tested approaches will be considered. The focus will be on scientific understanding rather than the development of counseling skills. Prerequisite: Psychology 101; and Psychology 201, Management 201 or Mathematics 201. *Semester course, three hours.*

PSYC 326. PREPARATION FOR THE COUNSELING PROFESSION. This course will provide an in-depth review of current applications of counseling and psychotherapy tailored for students planning to attend graduate school in mental health delivery or employment post-graduation. Students will review current theories and trends of mental health service delivery in the United States. Principles of professional development will be covered leading to a personal plan of professional development for each student. Students will review current ethical and theoretical issues in counseling and psychotherapy. Prerequisites: Psychology 101, 206, 207. *Semester course, three hours.*

PSYC 360. INDEPENDENT STUDY. Individual study of specialized topics in psychology. Junior standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

PSYC 370. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in psychology. Junior standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

PSYC 390. STUDIES IN PSYCHOLOGY. This course, which varies each semester, involves the examination of different areas of psychology with a focus on new areas not covered in regular coursework. *Offered periodically, semester course, one, two or three hours.*

PSYC 401. ADVANCED STATISTICS. An introduction to multivariate statistics by using computer statistical packages as applied to social science research including such topics as multiple regression, discriminant analysis, factor analysis, multivariate analysis of variance (MANOVA), path analysis, and other frequently used multivariate statistical techniques. Prerequisites: Psychology 101, 201 and 204. *Alternate years, fall semester only, three hours.*

PSYC 404. ADVANCED RESEARCH METHODS. A study of advanced research methods, including an independent research project. An IRB proposal, data collection, and formal written and oral presentation of the study are required. This course meets the Writing Intensive (WI) and Speaking Intensive (SI) requirements for the psychology major. Prerequisites: Psychology 101, 201 and 204. *Semester course, four hours.*

PSYC 460. INDEPENDENT STUDY. Individual study of specialized topics in psychology. Senior standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

PSYC 470. INDEPENDENT RESEARCH. An opportunity to conduct supervised research in psychology. Senior standing, permission of the department chair, and a faculty sponsor are required. *Semester course, one, two or three hours.*

PSYC 480. INTERNSHIP IN PSYCHOLOGY. An opportunity for upper class psychology majors, with a minimum of fifteen hours in psychology, to participate in individual field experiences in clinical or counseling settings under the professional supervision of the staff of cooperating institutions. Prerequisite: Permission of the department chair. *Semester course, one to six hours.*

PSYC 499. HONORS IN PSYCHOLOGY. Open only to senior psychology majors who have honors grades. Application must be made to the department and a proposal for the study approved before registering. The student studies under the guidance of department staff and must submit evidence of superior achievement. *Semester course, one, two or three hours.*

SOCIAL WORK (SOCW)

SOCW 101. FOUNDATIONS OF SOCIAL WORK. This foundational course introduces students to the rich and diverse discipline of social work and its widespread societal contributions. Students will learn the fundamentals of generalist social work; the ethics, tenets, and history of the profession; and gain an overview of the social delivery system in America. To facilitate the ability to discuss critical points of convergence and divergence, examination of predominant social work values, philosophical assumptions, and theories will occur throughout the course. Discussions of the diverse populations and settings served by social workers will be integrated into the course. The course will additionally explore both the methods widely utilized in social work research and be exposed to contemporary research examples. Students will be encouraged to examine their own values and aspirations with respect to the profession. Careful examination of the ways that a Christian worldview intersects with the values of social work and means of integrating the two realms form integral aspects of the course. *Semester course, three hours.*

SOCW 205. ADMINISTRATION IN SOCIAL WORK. This course introduces students to conceptualizing social problems through careful problem analysis and the development of effective programmatic responses. Because social service agencies are widely funded through public and private grants, students will also be introduced to the process of grant writing. Emphasis is placed throughout the course on responding to human need through service that demonstrates compassion, competence, and a commitment to promoting human dignity and flourishing. Prerequisite: Social Work 101. *Semester Course, three hours.*

SOCW 264. HUMAN BEHAVIOR IN THE SOCIAL ENVIRONMENT I. This course provides a solid understanding of human behavior and development as it is manifested and developed within families, groups, organizations, and communities. The relationships among biological, social, psychological, cultural, and spiritual realities are examined for the ways they impact and inform human behavior. Discussions of human behavior and development will be specifically targeted to forming a solid understanding and foundation for the practice of social work. Prerequisite: Social Work 101.

Fall semester only, three hours.

SOCW 272. SOCIAL WORK PRACTICUM. This practicum will be structured around a professional field experience of 140 on-site hours completed at a local organization providing quality social services. This experience is a critical component of preparing for a Social Work career. In addition to the field experience, students will attend a weekly, one-hour meeting led by a professor from the department with the purpose of collectively discussing case scenarios as well as interpersonal dynamics with relevance to the development of competent social work practice. Practicum objectives include: directly observing how professional social work practice is implemented within a specific setting, integrating an introductory generalist theory with practice, obtaining knowledge about macro social service delivery systems, applying critical thinking skills to specific case situations, and demonstrating increased self-awareness related to interest areas within the field of social work. Prerequisites: Social Work 101, 264, and 382.

Semester course, three hours.

SOCW 280. INTERNATIONAL SOCIAL DEVELOPMENT. This course, designed both for students of social work and students of any major interested in issues of international social justice, examines the history and development of these problems from micro and macro perspectives, exploring the social, political, and economic dynamics that catalyze and perpetuate unjust practices as well as the everyday experiences of those directly impacted. A social development model will be introduced, as well as case studies and readings from the Global South that encourage students to consider cross-cultural perspectives on the efficacy of social development practices. Not solely a theoretical examination, the course will encourage students to formulate and integrate ideas grounded in knowledge about cross-cultural social work practice, human development, and theology. Prerequisite: Social Work 101 and 264.

Semester course, three hours.

SOCW 302. GENERALIST PRACTICE I. This course introduces the generalist practice model of social work including theoretical frameworks, epistemological foundations, values and ethics, and practice approaches with individuals and families situated in a diverse range of environments. The study of social work functions, knowledge formation, and foundational skills are integral to the course. Additionally, the development of micro-level observation, assessment, interviewing, and clinical analysis utilizing a problem-solving approach is a primary emphasis. Prerequisites: Social Work 101 and 264.

Fall semester only, three hours.

SOCW 305. CHILD WELFARE. Children represent a group that is critically important to the future, yet also a group without the ability to advocate for themselves. This course will examine child welfare, society's response to providing services for children who lack adequate adult care and nurturing. The history, philosophies, programs, policies, and practices which comprise past and current child welfare services will be examined for both their efficacy and intended and unintended consequences upon some of the most vulnerable persons within our society. Case studies that illustrate the complexities of providing ethical and competent child welfare practice will also be integrated into the course. Prerequisite: Social Work 101.

Semester course, three hours.

SOCW 310. GENERALIST PRACTICE II. This course builds upon the preceding course, Generalist Practice I, by extending the study of social work theory and practice to task and treatment groups and to social service institutions. The course focuses on developing and evaluating the practice skills and interventions that are necessary for facilitating effective change within each of these levels. A section on case management theory and skills, as well as an introduction to motivational interviewing are also included. Special attention will be given to interventions that are particularly geared toward individuals on the margins of society including the poor, disabled, elderly, and other at-risk populations. Prerequisite: Social Work 302.

Spring semester only, three hours.

SOCW 342. SOCIAL WELFARE POLICY ANALYSIS. This course carefully analyzes and evaluates social welfare policies and programs as responses to defined social problems within their historical, political, and economic contexts. Past and present social welfare policies will be evaluated from a generalist perspective and students will be encouraged to critically analyze policies for both their efficacy and intended and unintended consequences. Policies related to poverty, advocacy, mental health, homelessness, racism, and child welfare will be specifically examined for their relevance to the practice of social work. Prerequisite: Social Work 101. *Semester course, three hours.*

SOCW 364. HUMAN BEHAVIOR IN THE SOCIAL ENVIRONMENT II. This course explores the frameworks, values, and skills inherent to meeting micro-level—individual and family—needs through an examination of the “mediating layers of society” of our organizations and communities. The underlying assumption of the course is there is a reciprocal relationship between individuals and families and the larger contexts in which they are situated. Therefore, working for change on any level requires an understanding of the full range of social contexts that both positively and negatively affect groups of people. This course explores the middle context which lies between that of the individual and macro-level social welfare policies. Particular emphasis will be given to exploring ways of intervening in society’s middle layers that utilize best practices (including subsidiary) and promote human flourishing. Prerequisites: Social Work 264. *Spring only semester, three hours.*

SOCW 382. HUMAN DIVERSITY IN SOCIAL WORK PRACTICE. This course highlights the ways in which an understanding of human diversity informs all aspects of social work including practice and policy. Attention to some of the ways humans are diverse including race and socioeconomic status will be carefully examined as they relate to the practice of social work. Case studies will also be utilized to explore ways in which individuals and groups are negatively affected psychologically, economically, and spiritually by biased or unjust systems and structures. Prerequisite: Social Work 101. *Semester course, three hours.*

SOCW 410. SOCIAL WORK CAPSTONE. This course requires students to demonstrate integration of the courses in the social work major in a final research project. The project entails research into a specific social work practice or social welfare policy and involves study design, implementation, analysis, and presentation. This course meets the Writing Intensive (WI), Speaking Intensive (SI), Information Literacy (IL) requirements for the social work major. Prerequisites: Social Work 101. *Semester course, three hours.*

SOCW 420. FIELD PLACEMENT. In this course, students are placed in social service organizations under the supervision of social work practitioners who are “teachers” in the field (field instructors) and under the careful guidance of the on-campus faculty. Students do not simply “work” in the setting, but are guided by specific learning outcomes. The goals of the field placement experience are to link the traditional curriculum with experiential learning through the development of a professional self and the development of foundational generalist practice skills with clients and client systems. Prerequisites: Senior status and faculty approval. *Semester course, eight hours.*

SOCW 425. FIELD PLACEMENT SEMINAR I. The purpose of the seminar is to collectively discuss case scenarios, as well as interpersonal dynamics with relevance to the development of competent social work practice. Some of the course seminars will also be topical in nature, covering experiential components of social work practice such as confidentiality, boundaries, ethics, integration of faith and practice, and professional self-care. Prerequisites: Senior standing and faculty approval. *Fall semester only, one hour.*

SOCW 426. FIELD PLACEMENT SEMINAR II. The purpose of the seminar is to collectively discuss case scenarios, as well as interpersonal dynamics with relevance to the development of competent social work practice. Some of the course seminars will also be topical in nature, covering experiential components of social work practice such as confidentiality, boundaries, ethics, integration of faith and practice, and professional self-care. Prerequisites: Senior standing and faculty approval. *Spring semester only, one hour.*

Directories

BOARD OF TRUSTEES

Grove City College, as an independent institution, is governed in all its affairs by a Board of Trustees composed of private citizens.

Term Expires June 2019

2001	Breen, Edward D. '78	<i>New Hope, PA</i>
2018	Bulette, Elizabeth, Ed.D.	<i>Frederick, MD</i>
2010	Chafuen, Alejandro A., Ph.D. '84	<i>McLean, VA</i>
2013	Forney, Rev. David G., Ph.D.	<i>Charlottesville, VA</i>
2016*	Gordon, Lisa Adams '78	<i>Erie, PA</i>
2000	Mehaffey, William J. '64	<i>Pittsburgh, PA</i>
2012	Peters, Raleigh '95	<i>New York, NY</i>
2010	Sandman, Dan D.	<i>Vero Beach, FL</i>
2018	Schwab, John A., Esq. '98	<i>Pittsburgh, PA</i>
2013	Sveda, Allyson Baird '88	<i>Gibsonia, PA</i>
2016	Wicker, Douglas K. '88	<i>Sewickley, PA</i>
2002	Zuschlag, Charlotte A. '73 (Vice Chair)	<i>Gibsonia, PA</i>

Term Expires June 2020

2012	Blackwell, J. Kenneth.	<i>Cincinnati, OH</i>
1998	Casolari, Samuel G. Jr., Esq. '83	<i>Cincinnati, OH</i>
2008	Gasiewicz, Philip W. (Treasurer)	<i>New Wilmington, PA</i>
2012	Holt, Deborah '84	<i>Wexford, PA</i>
2018	Jones, Craig W. '74	<i>Norman, OK</i>
2017*	Mackie, John C. '00	<i>Wexford, PA</i>
2014	McClelland, Anne M. '81	<i>Raleigh, NC</i>
2004	Miller, Ronald H. '75	<i>Sewickley, PA</i>
2008	Owens, Dawn '90	<i>Minneapolis, MN</i>
1995	Shlapak, Milton W. '59	<i>Atlanta, GA</i>
2014	Skinner, Kiron K., Ph.D.	<i>Pittsburgh, PA</i>
2018	Templin, Donald C. '84	<i>Findlay, OH</i>

Term Expires June 2021

2006	Batchelder, Alice, Hon.	<i>Medina, OH</i>
2018*	Calhoun, John H. '90	<i>Earlsville, VA</i>
2006	Cashdollar, David '71	<i>Grove City, PA</i>
2012	Ellis, Diane	<i>Allison Park, PA</i>
2009	Gummel, Joseph '75	<i>Springfield, OH</i>
2010	Jones, Robb M., Esq. '75	<i>Ashburn, VA</i>
2006	Mathie, Jody, M.D. '77	<i>Denver, CO</i>
2015	Meakem, Glen T.	<i>Sewickley, PA</i>
2012	Muetzel, Douglas '80	<i>Venetia, PA</i>
2006	Porter, David, Esq. '88	<i>Bradford Woods, PA</i>
1992	Rathburn, David R. '79 (Chair)	<i>Keswick, VA</i>
2004	Stewart, William C. '61	<i>Butler, PA</i>

*Alumni Trustee



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Johnson, Stanley M. '60

Landin, Thomas M. Esq. '59

Morledge, Rev. Richard A. '54

Nutt, Robert L. Esq. '67

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OFFICERS OF THE COLLEGE (2018-2019)

NOTE: Date indicates year of initial employment

- McNulty '80, Paul J. (2014)*President*
 B.A., Grove City College; J.D., Capital University Law School.
- T.B.A.*Provost and Vice President for Academic Affairs*
- Buckman '82, Michael R. (2017) *Vice President for Business and Finance*
 B.S., Grove City College; M.B.A., University of Pittsburgh.
- DiStasi '88, Vincent F. (1998)..... *Vice President-Chief Information Officer*
 B.S., Grove City College; Ph.D., Indiana University.
- Hardesty, Larry E. (2008).....*Vice President for Student Life and Learning*
 B.A., M.S., Geneva College.
- Inman, John G. (1994)..... *Vice President for Enrollment Services and Registrar*
 B.A., Geneva College; M.B.A., D.Sc., Robert Morris University.
- Lopresti, James M. (2013) *Vice President for Operations*
 B.S., M.B.A., University of Pittsburgh.
- Prokovich '89, Jeffrey D. (2001)*Vice President for Institutional Advancement*
 B.A., Grove City College; M.S., Geneva College.
- Wishing '83, Lee S. (1994)..... *Vice President for Student Recruitment*
 B.A., Grove City College; M.S., Geneva College.

ADMINISTRATION (2018-2019)

- Ayers, David J. (1996)..... *Dean for the Alva J. Calderwood School of Arts and Letters*
 B.A., Edinboro University; M.A., American University; Ph.D., New York
 University; Montgomery College.
- Kemeny, Paul C. (2000)*Assistant Dean for the Alva J.*
Calderwood School of Arts and Letters
 B.A., Wake Forest University; M.A.R., M.Div., Westminster Theological Seminary;
 Th.M., Duke University; Ph.D., Princeton Theological Seminary.
- McFeaters '88, '02, Michelle (1995)*Assistant Dean for the Alva J.*
Calderwood School of Arts and Letters
 B.A., M.S., Grove City College; D.B.A., Anderson University.
- Mobley '99, Jennifer A. (2006) *Assistant Dean for Service Learning*
 B.A., Grove City College; M.A., Ph.D., Ohio University.
- Mohr, Timothy A. (1993)*Interim Dean for the Albert A. Hopeman, Jr. School of*
Science, Engineering, and Mathematics, and Professor of Electrical Engineering
 B.S., M.S., Ph.D., Montana State University.

- Pazehoski '01, Kristina O. (2011)..... *Interim Assistant Dean for the Albert A. Hopeman, Jr. School of Science, Engineering, and Mathematics, and Professor of Biology*
B.S., Grove City College; Ph.D. Duquesne University.
- Welton, Gary L. (1991)..... *Assistant Dean for Institutional Assessment*
B.A., Cedarville College; M.A., Slippery Rock University; M.A., Ph.D., State University of New York at Buffalo.
-
- Ball '88, Thomas G. (2006)..... *Director of Financial Aid*
B.A., Grove City College; M.A., Pennsylvania State University.
- Gibbs, Sarah E. (2012)..... *Director of Admissions*
B.A., Geneva College; M.S., Robert Morris University.
- Houk, Suzanne N. (2005) *Director of Counseling Services*
B.S., M.A., Geneva College; Ph.D., Duquesne University.
- Johnson, Lois L. (1995) *Director of the Office of International Education*
B.S., Geneva College; M.Ed., Slippery Rock University; Ed.D., Pennsylvania State University; Slippery Rock University.
- Kengor, Paul G. (1997)..... *Executive Director of The Center for Vision & Values at Grove City College*
B.A., University of Pittsburgh; M.A., The American University; Ph.D., University of Pittsburgh.
- MacLeod '96, Melissa A. (2004) *Senior Director of Alumni and College Relations*
B.S., Grove City College.
- Muller, Jacquelyn P. (2014)..... *Senior Director of Marketing and Communications*
B.S., M.A., Slippery Rock University.
- Munnell '92, Barbra M. (1994)..... *Director of Library Services*
B.A., Grove City College; M.S.L.S., Clarion University.
- Powell '03, Brian M. (2014)..... *Senior Director of Development*
B.A., Grove City College; M.A., Geneva College.
- Reuber, Mark O. (1989)..... *Field Director for the Office of International Education*
B.E., M.E., Carleton University; Ph.D., University of Illinois at Chicago; Yale University.
- Sposato '00, Amanda L. (2000)..... *Director of Career Services*
B.A., Grove City College; M.A., Geneva College.
- Tallerico, Betty L. (1991) *Assistant to the President*
B.A., Washington and Jefferson College; M.Div., Princeton Theological Seminary; University of Tuebingen, Germany.
- Wagner, Marci K. (2008)..... *Director of Human Resources*
B.S., M.S., Geneva College.

Williams '01, Michelle M. (2002)*Director of Financial Services*
 B.S., Grove City College.

Wolfe, Terry D. (2015)*Director of Facilities Management*
 B.Arch., Texas Tech University; M.B.A., Oklahoma City University.

FULL-TIME FACULTY (2018-2019)

Al Moakar, Lory J. (2013) *Assistant Professor of Computer Science*
 B.S., American University of Science and Technology, Ph.D., University of Pittsburgh.

Allison, Blair T. (1999)..... *Professor of Mechanical Engineering*
 B.S., Carnegie Mellon University; M.S., Ph.D., Massachusetts Institute of
 Technology.

Anderson, Erik J. (2006).....*Associate Professor of Mechanical Engineering*
 B.S., Gordon College; M.S., St. Francis Xavier University; Ph.D. Massachusetts
 Institute of Technology.

Anderson, William P., Jr. (1987)..... *Professor of Sociology*
 B.A., Lambuth College; M.A., Ph.D., University of Connecticut.

Antoszewski, Lisa M. (2014)..... *Interim Chair of the Department of Biology and*
Associate Professor of Biology
 B.S., Susquehanna University; Ph.D., University of North Carolina at Chapel Hill.

Archibald, C. Mark (1996) *Professor of Mechanical Engineering*
 University of Alabama; B.S.M.E., University of Alabama at Huntsville;
 M.S.M.E., Ph.D., Virginia Polytechnic Institute and State University.

Augspurger, Joseph D. (1996)*Chair of the Department of Chemistry and*
Professor of Chemistry
 B.S., Ph.D., University of Illinois Urbana, Cornell University.

Ault, Dana L. (2015).....*Assistant Professor of Exercise Science*
 B.S., Slippery Rock University; M.S., The University of Akron; Ph.D., Kent State
 University.

Ayers, David J. (1996).....*Dean for the Alva J. Calderwood School*
of Arts and Letters and Professor of Sociology
 B.A., Edinboro University; M.A., American University; Ph.D., New York
 University; Montgomery College.

Baglia, David S. (1995) *Chair of the Department of Accounting and Finance*
and Professor of Accounting
 A.S., Jamestown Community College; B.A., Westminster College; M.B.A., Syracuse
 University; D.B.A., Cleveland State University; Certified Public Accountant.

Bancroft, Eric D. (2011)*Associate Professor of Mathematics*
 A.A., Seminole State College of Florida; B.S., University of Central Florida;
 M.S., Ph.D., North Carolina State University.

- Bancroft '07, Erin E. (2011) *Associate Professor of Mathematics*
 B.S., Grove City College; M.S., Ph.D., North Carolina State University.
- Bandy, Gregory A. (2018) *Associate Professor of Communication Studies*
 B.A., Asbury College; M.A., M.F.A., University of Georgia.
- Bardy, Erik R. (2006) *Assistant Chair of the Department of Mechanical Engineering
 and Professor of Mechanical Engineering*
 B.S., M.S., Ph.D., University of Buffalo.
- Bibza, James (1977)..... *Professor of Biblical and Religious Studies and Philosophy*
 B.A., C.W. Post College; M.Div., Gordon-Conwell Theological Seminary;
 Ph.D., Princeton Theological Seminary.
- Biddle '87, Wayne A. (1987)..... *Professor of Business*
 B.A., Grove City College; M.B.A., Clarion University of Pennsylvania, D.B.A.,
 Anderson University.
- Blackburn '94, Gina M. (2009)..... *Professor of Education*
 B.A., Grove City College; M.S. Butler University; Ph.D., Indiana University.
- Bonomo, Kelleen H. (2007)..... *Professor of Mathematics*
 B.S., Westminster College; M.S., Ph.D., University of Notre Dame.
- Brenner, Frederic J. (1969) *Professor of Biology*
 B.S., Thiel College; M.S., Ph.D., Pennsylvania State University. Certified
 Senior Ecologist; Certified Wildlife Biologist.
- Bright, Martin E. (2008) *Professor of Psychology and Social Work*
 A.A., B.A., Thiel College; M.A., Edinboro University of Pennsylvania;
 Ed.D., Argosy University of Sarasota.
- Bright, Myron “Mike” W. (1998) *Chair of the Department of Electrical and Computer
 Engineering and Professor of Electrical and Computer Engineering*
 B.S., Purdue University; M.S., George Washington University; Ph.D., Pennsylvania
 State University.
- Brower, Shane C. (1999) *Professor of Physics*
 B.S., Bucknell University; M.S., Ph.D., UMBC.
- Brown, Daniel S. (2001)..... *Professor of Communication Studies*
 B.A., Bob Jones University; M.A., Miami University; Ph.D., Louisiana
 State University.
- Buxton, Jeffrey D. (2012) *Assistant Professor of Exercise Science*
 B.S., Pennsylvania State University; M.S., California University of Pennsylvania.
- Byun, Seulgi L. (2016) *Chair of the Department of Biblical and Religious
 Studies and Philosophy and Associate Professor of Biblical and Religious Studies*
 B.A., Gordon College; M.A., M. Div., Gordon-Conwell Theological Seminary; Ph.D.,
 University of Cambridge.

- Campbell, George V. (2000)..... *Assistant Chair of the Department of Biblical and Religious Studies and Philosophy and Professor of Sociology and Biblical and Religious Studies*
 B.S., Bryan College; Th.M., Dallas Theological Seminary; Ph.D., University of Pittsburgh.
- Carson, Kenneth P. (2015)..... *Academic Assessment Coordinator, Chair of the Department of Management and Marketing, and Professor of Business*
 B.S., B.A., Geneva College; M.A., Ph.D., University of Akron.
- Carter, Beverly H. (1992) *Chair of the Department of Music and Professor of Music*
 B.M., Furman University; M.A., Eastman School of Music; Ph.D. Ohio University; Fulbright Scholar, University of Vienna.
- Chapman '04, Jarrett M. (2012)..... *Associate Professor of Education*
 B.S., Grove City College; M.S., Slippery Rock University; D.Ed., Indiana University of Pennsylvania.
- Chinn, James H. (2003) *Associate Professor of Exercise Science*
 B.S., Ohio State University; M.Ed., Norwich University; Ed. D., Argosy University.
- Christman, Alan M. (1988)..... *Professor of Electrical Engineering*
 B.S.M.P.E., M.S. Mng. E., Pennsylvania State University; B.S.E.E., M.S.E.E., West Virginia University; Ph.D., Ohio University.
- Chu, Kuan-Lun (2011)..... *Associate Professor of Electrical Engineering*
 B.S., National Taiwan University; M.B.A., National Taipei University; M.Eng., Cornell University; Ph.D., University of Illinois.
- Clauss '83, Michelle A. (1991)..... *Chair of the Department of Mechanical Engineering and Professor of Mechanical Engineering*
 B.S., Grove City College; Ph.D., Carnegie Mellon University.
- Clem, James L. (2013)..... *Chair of the Department of Physics and Assistant Professor of Physics*
 B.Sc., University of Arkansas; M.Sc., Ph.D., University of Victoria.
- Coulter '91, Michael L. (1995)..... *Professor of Political Science and Humanities*
 B.A., Grove City College; M.A., Ph.D., University of Dallas.
- Craig '77, Betsy J. (1981)..... *Professor of English and Theatre*
 A.B., Grove City College; Leeds University, Bretton Hall Drama, England; M.A., New York University.
- Cramer, Kristen M. (2014) *Assistant Professor of Exercise Science*
 B.A., Grove City College; M.S., Slippery Rock University.
- Cramer, Susan J. (2002)..... *Professor of Chemistry*
 B.A., Malone University; M.S., University of Toledo; Ph.D., University of Akron.

- Crute, Christy L. (2018).....*Professor of Business*
B.A., University of Akron; Ph.D., Kent State University.
- Culbertson '84, Linda D. (2000)..... *Professor of Education*
B.A., Grove City College; M.Ed. Certification, Edinboro University of
Pennsylvania; Ed.D., Indiana University of Pennsylvania.
- Dean, Daniel A. (1980).....*Associate Professor of Mathematics*
B.S., Wheaton College; M.A., Indiana University; University of Pittsburgh.
- Dellinger '07, Brian J. (2013)..... *Assistant Professor of Computer Science*
B.S., Grove City College; M.S., Ph.D., North Carolina State University.
- DiDonato '10, Andrew J. (2014)*Assistant Professor of Exercise Science*
B.S., Grove City College; M.S., California University of Pennsylvania.
- DiStasi '88, Vincent F. (1998).....*Vice President-Chief Information Officer, Associate
Professor of Chemistry and Guest Lecturer in Business*
B.S., Grove City College; Ph.D., Indiana University.
- Dixon '05, John M. (2017)*Assistant Professor of Mechanical Engineering*
B.S.M.E., Grove City College; M.S., Ph.D., University of Minnesota.
- Drake, Joshua F. (2004).....*Professor of Music and Humanities*
B.M., Union University; M.Mus., Ph.D., University of Glasgow.
- Dreves '97, Michael F. (2006).....*Assistant Athletic Director and
Assistant Professor of Exercise Science*
B.A., Grove City College, M.S., Slippery Rock University.
- Dreves '97, Susan M. (2004).....*Instructor of Education*
B.A., Grove City College; M.A., Westminster College.
- Dudt, Jan F. (2004)..... *Professor of Biology*
B.A., Covenant College; M.Ed., University of Pittsburgh; M.S., Ph.D., Emory
University.
- Edwards, Jason R. (2003)*Professor of History*
B.A., Asbury College; M.A., Ph.D., University of Kentucky.
- English '97, Yvonne J. (2011)..... *Executive Director of Entrepreneurship and
Innovation, and Assistant Professor of Entrepreneurship*
B.A., Grove City College; M.P.S., University of Maryland.
- Erb, Andrew S. (2018).....*Associate Professor of Music*
B.A., Westminster College; M.M., Youngstown State University.
- Fair '85, Mark C. (2004)..... *Professor of Mechanical Engineering and Physics*
B.S., Grove City College; Ph.D., Carnegie Mellon University.

- Falcetta, Michael F. (2003)..... *Professor of Chemistry*
B.S., State University of New York College at Oswego; Ph.D., University of Pittsburgh.
- Farone, Tracy S. (2010) *Professor of Biology*
B.S., St. Vincent College; D.V.M., Ohio State University Veterinary College.
- Fecich, Samantha J. (2014)..... *Assistant Professor of Education*
B.S., California University of Pennsylvania; M.Ed., Ph.D., Penn State University.
- Flanders '04, Steven T. (2016) *Assistant Professor of Mathematics*
B.S., Grove City College; M.Ed., Gannon University; Ed.D., University of Pittsburgh.
- Forteza, Deborah R. (2017) *Assistant Professor of Spanish*
B.A., Northland International University; M.A., M. Div., Central Baptist Theological Seminary; M.A., University of St. Thomas; Ph.D., University of Notre Dame.
- Franklin, Christopher E. (2014) *Associate Professor of Philosophy*
B.A., Biola University; M.A., University of California, Riverside; Ph.D., University of California, Riverside.
- Fritz '94, David C. (2002) *Aquatics Director and
Assistant Professor of Exercise Science*
B.S., Grove City College; M.S., Duquesne University, Slippery Rock University.
- Fuller '13, Caleb S. (2017) *Assistant Professor of Economics*
B.A., Grove City College; M.A., Ph.D., George Mason University.
- Fuss, L. Michelle "Chelle" (2006)..... *Assistant Professor of Exercise Science*
B.A., M.A., Geneva College.
- Genareo, Phyllis P. (1995)..... *Associate Chair of the Department of Education and
Professor of Education*
B.S., M.A., Slippery Rock University; Youngstown State University; Clarion University; Ed.D., Duquesne University.
- Gibson '02, Todd D. (2004)..... *Athletic Director and
Assistant Professor of Exercise Science*
B.A., Grove City College; B.A., Youngstown State University; M.S., California University of Pennsylvania.
- Gordon, T. David (1999) *Professor of Biblical and Religious Studies*
B.L.A., Roanoke College; M.A.R., Th.M., Westminster Theological Seminary; Ph.D., Union Theological Seminary.
- Graham, Mark W. (2003) *Professor of History*
B.A., Bob Jones University; M.A., University of South Carolina; Ph.D., Michigan State University.
- Grimm, Richard C. (1997)..... *Professor of Finance*
B.S.B.A., M.B.A., Youngstown State University; Ph.D., Kent State University.

- Guevara, Holly M. (2017)..... *Assistant Professor of Chemistry*
B.A., Eastern Nazarene College; Ph.D., University of New Hampshire.
- Harmon, Rebecca C. (2011)..... *Chair of the Department of Modern Languages and
Professor of French*
B.A., Dartmouth College, M.A., University of Pennsylvania; M.A., Ph.D., Princeton
University.
- Harp, Gillis J. (1999) *Chair of the Department of History and Professor of History*
B.A., Carleton University; M.A., Ph.D., University of Virginia.
- Harvey, Andrew J. (2007)..... *Professor of English*
B.A., James Madison University; M.A., Ph.D., University of North Carolina at
Chapel Hill.
- Hasper, Joseph J. (2017)..... *Associate Professor of Music*
B.F.A., Carnegie Mellon University; M.Ed., American Intercontinental University;
M.M., D.M.A., University of Oklahoma.
- Havrilla '87, Laura R. (2012) *Associate Professor of Business*
B.A., Grove City College; M.B.A., Duke University.
- Herbener, Jeffrey M. (1997) *Chair of the Department of Economics and Sociology
and Professor of Economics*
B.S., Nebraska Wesleyan University; M.S., Ph.D., Oklahoma State University.
- Hogsette, David S. (2014)..... *Writing Program Director and Professor of English*
B.A., M.A., Ph.D., The Ohio State University.
- Hollenberger, Jennifer C. (2018) *Assistant Professor of Social Work*
A.A., Liberty University; B.A., M.S.W., University of Pittsburgh.
- Homan, Kristin N. (1992)..... *Associate Professor of Psychology*
B.S., University of Wisconsin; Ph.D., University of Minnesota.
- Homan, Timothy C. (1991)..... *Professor of Chemistry*
B.S., Gardner-Webb College; Ph.D., University of Colorado, University of Minnesota.
- Horton, Joseph J. (2002) *Professor of Psychology*
B.S., Kutztown University; M.S., Ph.D., Pennsylvania State University.
- Hosack, Lisa L. (2013) *Director of the Social Work Program
and Associate Professor of Social Work*
B.A., Moody Bible Institute; M.S.W., University of Illinois-Chicago; Ph.D.,
Michigan State University.
- Houk, Suzanne N. (2005) *Director of College Counseling
and Assistant Professor of Psychology*
B.S., M.A., Geneva College; Ph.D., Duquesne University.
- Howley, George B. (2008)..... *Assistant Professor of Entrepreneurship*
B.A., Westminster College; M.P.M., Carnegie Mellon University.

- Huebert, Melva H. (1998).....*Professor of Music*
B.M., M.M., Youngstown State University; M.A., Ph.D., Kent State University.
- Hunt, Alyssa A. (2014).....*Assistant Professor of Exercise Science*
B.S., California Baptist University; M.S., California Baptist University.
- Hutchins, Jonathan O. (2018) *Assistant Professor of Computer Science*
B.S., Virginia Tech; Ph.D., University of California, Irvine.
- Inman, John G. (1994) *Vice President for Enrollment Services, Registrar,
and Guest Lecturer in Business and Computer Science*
B.A., Geneva College; M.B.A., D.Sc., Robert Morris University.
- Jackson, Michael A. (2007) *Professor of Mathematics*
B.S., Pennsylvania State University; M.S., Ph.D., Purdue University.
- Jacobs, Cathy E. (1988)*Assistant Professor of Exercise Science*
B.S.E., M.Ed., Delta State University.
- Jenkins, Stephen P. (1992).....*Professor of Biology*
B.A., Covenant College; M.S., Ph.D., The University of Georgia.
- Johnson, Lois L. (1995)*Director of the Office of International Education
and Professor of Education*
B.S., Geneva College; M.Ed., Slippery Rock University; Ed.D., Pennsylvania
State University.
- Johnson-Osho, Lorie A. (2010) *Director of Multicultural Recruiting and Retention
and Assistant Professor of Education*
B.A., M.Ed., Duquesne University; Ed.D., Roosevelt University.
- Kemeny, Paul C. (2000)*Assistant Dean for the Alva J. Calderwood School of Arts
and Letters, and Professor of Biblical and Religious Studies and Humanities*
B.A., Wake Forest University; M.A.R., M.Div., Westminster Theological
Seminary; Th.M., Duke University; Ph.D., Princeton Theological Seminary.
- Kengor, Paul G. (1997).....*Executive Director of The Center for Vision & Values at
Grove City College and Professor of Political Science*
B.A., University of Pittsburgh; M.A., The American University; Ph.D.,
University of Pittsburgh.
- Kocur '87, Richard D. (2009)..... *Assistant Professor of Business*
B.S., Grove City College; M.B.A., University of Pittsburgh.
- Kriley '88, Charles E. (1996)..... *Professor of Chemistry*
B.S., Grove City College; Ph.D., Purdue University.
- Lamie, Melissa D. (1993) *Senior Women's Administrator and Associate Athletic
Director for Leadership Development, and Assistant Professor of Exercise Science*
B.S., Calvin College; M.A., University of Northern Colorado.

- Lamie '85, Steven S. (1997) *Assistant Professor of Exercise Science*
 B.S., Grove City College; M.A., Kent State University.
- Loretto '05, Adam J. (2015) *Assistant Professor of English*
 B.A., Grove City College; M.A.T., Ph.D., University of Pittsburgh.
- Madsen, Kelsey B. (2018) *Assistant Professor of French*
 B.A., M.A., Ph.D., University of Oklahoma.
- Markley '82, Andrew W. (1991) *Professor of Business*
 B.A., Grove City College; J.D., Case Western Reserve University; M. Public
 and International Affairs, University of Pittsburgh. Admitted, State Bar
 in Pennsylvania and U. S. Supreme Court.
- Marsch, Glenn A. (2004) *Professor of Physics*
 B.S., Clemson University; Ph.D., Florida State University.
- Mayo, Joshua A. (2015) *Assistant Professor of English*
 B.A., Grove City College; M.A., University of Mississippi; M.A., Ph.D., University of
 Dallas.
- McFeaters '88, '02, Michelle R. (1995) *Assistant Dean for the Alva J. Calderwood*
School of Arts and Letters, and Professor of Accounting
 B.A., M.S., Grove City College; D.B.A., Anderson University.
- McIntyre, Dale L. (1985) *Professor of Mathematics*
 B.A., Houghton College; M.S., Virginia Polytechnic Institute and State
 University; Ph.D., Clemson University; University of Pittsburgh.
- McIntyre, M. Susan (2015) *Instructor of Mathematics*
 B.S, University of Louisville; M.S. Clemson University.
- Messer, H. Collin (2006) *Chair of the Department of English and Professor of English*
 B.A., Emory University; M.A., Ph.D., University of North Carolina.
- Miller, Kimberly M. (2004) *Chair of the Department of Communication*
and Visual Arts and Professor of Communication Studies
 B.S., M.A., Slippery Rock University; Ph.D., Indiana University of Pennsylvania.
- Mitchell, Andrew J. (2008) *Associate Professor of History*
 B.A., Hillsdale College; M.A., Ph.D., Ohio State University.
- Mobley '99, Jennifer A. (2006) *Assistant Dean for Service Learning and*
Professor of Communication Studies
 B.A., Grove City College; M.A., Ph.D., Ohio University.
- Moeller '93, Julie C. (2005) *Professor of Biblical and Religious Studies*
 B.A., Grove City College; M.A., Reformed Theological Seminary; Ph.D.,
 University of Gloucestershire.

- Mohr, Timothy A. (1993)*Interim Dean for the Albert A. Hopeman, Jr. School of Science, Engineering, and Mathematics and Professor of Electrical Engineering*
 B.S., M.S., Ph.D., Montana State University.
- Moore, Sarina G. (2015) *Assistant Professor of English*
 B.A., Wheaton College, IL; Ph.D., University of Virginia.
- Mucha, Nathanael E. (2012)*Director of Design and Visual Arts and Assistant Professor of Design*
 B.A., Grove City College; M.F.A., Kent State University.
- Mueller, Katherine E. (2014)*Assistant Professor of Music and Director of Choral Activities*
 B.M., Susquehanna University; M.M., New England Conservatory of Music;
 M.M., Carnegie Mellon University; D.M.A., Shenandoah University.
- Munson, Jolene K. (2017)*Director of the Grove City College Early Education Center and Assistant Professor of Education*
 B.S., M.A., Edinboro University.
- Munson, Paul A. (2004)*Professor of Music*
 B.Mus., Wheaton College; M.A., Ph.D., University of Michigan.
- Nichols '93, Constance N. (2001)*Chair of the Department of Education and Professor of Education*
 B.A., Grove City College; M.S., Duquesne University; Ed.D., University of Pittsburgh.
- Paparone '93, Stacy A. (2008)*Associate Professor of Music*
 B.Mus., Grove City College; M.Ed., Indiana Wesleyan University; D.M.A., Boston University.
- Pazehoski '01, Kristina O. (2011)*Interim Assistant Dean for the Albert A. Hopeman, Jr. School of Science, Engineering, and Mathematics, and Professor of Biology*
 B.S., Grove City College; Ph.D. Duquesne University.
- Potter, Eric A. (2000) *Professor of English*
 B.A., Wheaton College; M.A., Ph.D., University of Virginia.
- Powell, Scott K. (1991)*Professor of Business*
 B.A., Anderson University; M.B.A., University of Pittsburgh; D.B.A., Anderson University.
- Prins, Philip J. (2014) *Chair of the Department of Exercise Science and Assistant Professor of Exercise Science*
 B.S., M.S., Georgia Southern University; Ph.D., University of Pittsburgh.
- Quintero, Julio A. (2014)*Associate Professor of Spanish*
 B.A., Universidad de Santo Tomás; M.A., Universidad de Antioquia;
 Ph.D., University of Cincinnati.

- Reuber, Mark O. (1989).....*Field Director for the Office of International Education and Professor of Mechanical Engineering*
B.E., M.E., Carleton University; Ph.D., University of Illinois at Chicago; Yale University.
- Rhoades, Kathy J. (2002).....*Associate Professor of Visual Arts*
B.F.A., Clarion University; M.F.A., University of New Mexico.
- Rine, C. Rebecca (2015)..... *Assistant Professor of Biblical and Religious Studies*
B.A., Campbell University, M.A., University of North Carolina at Charlotte, Ph.D., University of Virginia.
- Ritenour, Shawn R. (2001) *Professor of Economics*
B.A., Northwestern College; Ph.D., Auburn University.
- Robbins, David W. (2018).....*Professor of Christian Ministries*
B.A., University of North Carolina; M. Div., Gordon-Conwell Theological Seminary; D. Min., Fuller Theological Seminary.
- Russin, Amy C. (2016) *Associate Professor of Accounting*
B.S., B.A., M.B.A., Geneva College.
- Schaefer, Paul R. (1997).....*Professor of Biblical and Religious Studies*
B.A., University of Pennsylvania; Harvard University; Westminster Theological Seminary; M.T.S., Emory University; D. Phil., Oxford University.
- Scheffler, Patricia S. (2006)..... *Professor of Education*
B.A., Covenant College; M.Ed., University of Mississippi; Ed.D., University of Pittsburgh.
- Severson, Sean K. (2004)*Assistant Professor of Exercise Science*
B.A., University of Minnesota; M.A., Adams State College.
- Seybold, Kevin S. (1985)..... *Chair of the Department of Psychology and Social Work and Professor of Psychology*
B.A., Greenville College; M.A., Marquette University; Ph.D., University of Wisconsin-Milwaukee.
- Shaw '95, Kevin L. (2000) *Professor of Biology and Chemistry*
B.S., Grove City College; Ph.D., Texas A&M University.
- Shepson III, Donald R. (2018).....*Professor of Christian Ministries*
B.A., Wheaton College; M.Div., Gordon-Conwell Theological Seminary; Ph.D., Talbot School of Theology, Biola University.
- Snyder, Richard W. (2016)..... *Assistant Professor of Business*
B.S., B.A., J.D., Duquesne University; L.L.M., New York University; M.B.A., Carnegie Mellon University.
- Stanton, Samuel S. (2006) *Chair of the Department of Political Science and Professor of Political Science*
B.A., M.A., Arkansas State University; Ph.D., Texas Tech University.

- Stauff '05, Devin L. (2011) *Associate Professor of Biology*
B.S., Grove City College; Ph.D., Vanderbilt University.
- Stephens, John H. (1994) *Professor of Education*
B.S., Pennsylvania State University; American University; M.Ed., Westminster
College; Ph.D., University of Pittsburgh.
- Stone, J. Nicole (2014) *Director of the Business Program, Assessment Coordinator*
for the Business Program, and Assistant Professor of Accounting
B.S., M.S., Grove City College; Certified Public Accountant.
- Su, Shuhui (2009) *Professor of Modern Languages*
Diploma, M.A., Fujian Teacher's University; Ph.D., University of Hawaii.
- Sweet '85, Timothy J. (2005) *Chair of the Department of Entrepreneurship*
and Associate Professor of Entrepreneurship
B.A., Grove City College; Gordon-Conwell Theological Seminary; M.Div.,
Pittsburgh Theological Seminary; University of Pittsburgh.
- Tedford '00, Jeffrey M. (2011) *Director of Orchestral Activities and*
Associate Professor of Music
B.M., Grove City College; M.M., Carnegie Mellon University; D.M.A., Shenandoah
University.
- Thompson, Gary L. (1996) *Chair of the Department of Mathematics and*
Professor of Mathematics
B.S., Wake Forest University; M.S., M. Ed., University of Illinois;
Ph.D., University of Virginia.
- Thrasher '80, James T. (1984) *Senior Fellow for Vocational Guidance and Associate*
Professor of Biblical and Religious Studies and Humanities
B.A., Grove City College; M.A., Slippery Rock University of Pennsylvania;
Reformed Presbyterian Theological Seminary; Ed.D., Nova Southeastern University.
- Throckmorton, E. Warren (1994) *Professor of Psychology*
B.A., Cedarville College; M.A., Central Michigan University;
Ph.D., Ohio University.
- Tinkey '75, Patricia A. (2004) *Professor of Spanish*
B.A., Grove City College; M.A., Geneva College; M.Ed., Gannon University;
Ed.D., Duquesne University.
- Trueman, Carl R. (2018) *Professor of Biblical and Religious Studies*
M.A., St. Catharine's College, University of Cambridge; Ph.D., King's College,
University of Aberdeen.
- Ulrich, Vernon W. (2005) *Professor of Mechanical Engineering*
B.S., Bridgewater College; M.S., Ph.D., University of Virginia.

- Valentine, David W. (2018).....*Professor of Computer Science*
 B.S., Clarkson University; M.Div., Trinity Evangelical Divinity School; Ph.D.,
 University of Buffalo.
- Verbois, Caleb, A. (2014).....*Associate Professor of Political Science*
 B.A. Oglethorpe University, M.A., Ph.D. University of Virginia.
- Wagner, Doris J. “DJ” (2001)..... *Professor of Physics*
 B.S., College of William and Mary; M.S., Ph.D., Vanderbilt University.
- Waha, Kristen B. (2015) *Assistant Professor of English*
 B.A., Westmont College; Ph.D., University of California, Davis.
- Walker, Lawrence A. (2013)*Assistant Professor of Electrical*
and Computer Engineering
 B.S., D. Eng., Morgan State University.
- Welton, Gary L. (1991)..... *Assistant Dean for Institutional Assessment and*
Professor of Psychology
 B.A., Cedarville College; M.A., Slippery Rock University; M.A., Ph.D., State
 University of New York at Buffalo.
- West, Ryan D. (2016) *Assistant Professor of Philosophy*
 B.A., Biola University; M.A., Talbot School of Theology; M.A., Ph.D., Baylor
 University.
- Wolfe, Britton D. (2015)..... *Chair of the Department of Computer Science and*
Associate Professor of Computer Science
 B.S., Carnegie Mellon University; Ph.D., University of Michigan.
- Wolinski, Jeffrey P. (2001)..... *Professor of Physics*
 B.A., Rutgers University; M.A., Ph.D., Harvard University.
- Wong, Venney (2015).....*Assistant Professor of Chemistry*
 B.S., Southern Illinois University; Ph.D., Southern Illinois University.
- Zhang, Youhui “Owen” (2015).....*Assistant Professor of Finance*
 B.S., M. Mgmt., Dalian University of Technology; Ph.D., University of Massachusetts
 Amherst.

ADJUNCT FACULTY (2018-2019)

- Barbour, Kristin A. (2007).....*Adjunct Assistant Professor of Theatre*
 B.A., Northwestern College; M.A., Kansas University; Ph.D., Kent State University.
- Bradley, Anne R. (2017).....*Adjunct Professor of Economics*
 B.S., James Madison University; M.S., Ph.D., George Mason University.
- Hendrickson, Mark W. (2004).....*Adjunct Professor of Economics and Entrepreneurship*
 B.A., Albion College; M.A., Ph.D., International College.
- Ligo, Carla V. (2006)..... *Adjunct Professor of Modern Languages*
 B.S., Universidad de las Americas; M.A., Slippery Rock University.

Martin, Tammi S. (2011) *Adjunct Professor of Special Education*
 B.S., M.A., Slippery Rock University; M.Ed., California University of Pennsylvania.

ADDITIONAL INSTRUCTIONAL FACULTY (2018-2019)

Agnew, Rochelle L. (2017)..... *Music Lesson Instructor in Violin/Viola*
 B.M., M.M., Duquesne University.

Anderson, Kathryn S. (2004)..... *Guest Lecturer in Humanities*
 B.A., Lambuth College; M.A., University of Mississippi.

Ball '88, Thomas G. (2006)..... *Guest Lecturer in Political Science*
 B.A., Grove City College; M.A., Pennsylvania State University.

Bellassai, Anthony C. (2014)..... *Music Lesson Instructor in String Bass*
 B.S., Towson University.

Billock, Rebecca L. (2013) *Music Lesson Instructor in Piano*
 B.M., Walla Walla College; M.M., University of Redlands; D.M.A., University of Washington.

Blaine, Jonathan A. (2009) *Manager, Computer Services & Support and*
Guest Lecturer in Business
 B.S., Clarion University.

Bodamer '99, Amy S. (2005)..... *Guest Lecturer in Education*
 B.S., Grove City College; M.A. Slippery Rock University of Pennsylvania.

Bonner, Timothy R. (2014)..... *Guest Lecturer in Political Science*
 B.A., Westminster College; J.D. University of Notre Dame.

Brown, Jeremy H. (2017) *Guest Lecturer in Computer Science*
 Associate of Specialized Technology in Computer Animation, Art Institute of Pittsburgh.

Byo, Donald W. (1994)..... *Music Lesson Instructor in Bassoon/Woodwind*
 B.Mus., Youngstown State University; M.Mus., Kent State University.

Cameron '91, Glenn R. (2013) *Assistant Marching Band Director*
 B.M., Grove City College.

Churm, George W. (2000) *Music Lesson Instructor in Guitar*
 B.F.A., Carnegie Mellon University; M.Mus., Youngstown State University.

Cook, Adam J. (2016)..... *Guest Lecturer in Physical Education*
 B.S., Slippery Rock University; M.B.A., Clarion University of Pennsylvania.

Coyne '04, John M. (2004) *Guest Lecturer in Business*
 B.A., Grove City College; M.A., Geneva College.

- DiSpirito, James D. (2017) *Guest Lecturer in Communication Studies*
 B.A., M.A., University of Pittsburgh.
- Dolan, Brenda L. (2014) *Guest Lecturer in Exercise Science*
 B.S., Slippery Rock University.
- DuCarne '81, Richard E. (2004) *Guest Lecturer in Accounting*
 B.S., Grove City College; M.S., Carnegie Mellon University.
- English, Kyle P. D. (2017) *Guest Lecturer in Entrepreneurship*
 B.A., Bishop's University.
- Falconi '82, James A. (2004) *Guest Lecturer in Accounting*
 B.S., Grove City College; C.P.A.; C.F.E.
- Fennell, Drew R. (2007) *Music Lesson Instructor in Trumpet*
 B.F.A., Carnegie Mellon University.
- Fitch, Bradley A. (2017) *College Organist and Music Lesson Instructor in Organ*
 B.M., Oberlin College; M.M., Indiana University; D.M.A., University of Oklahoma.
- Garvey, Kevin A. (2014) *Guest Lecturer in Exercise Science*
 B.A., Point Park University.
- Gregg '84, Jane G. (2000) *Music Lesson Instructor in Violin/String*
 B.A., Grove City College.
- Habbershon, Jonathan R. (2017) *Guest Lecturer in Entrepreneurship*
 B.S., Grove City College; M.B.A., Philadelphia University.
- Hammond, Ryan M. (2017) *Guest Lecturer in Communication Studies and Visual Arts*
 B.A., Grove City College; M.F.A., Kent State University.
- Heasley, Daniel G. (2011) *Music Lesson Instructor in Saxophone*
 B.M., Youngstown State University.
- Heid, Ronald J. (2003) *Guest Lecturer in Music, Marching Band Staff Assistant,
 and Music Lesson Instructor in Percussion*
 B.S., M.S., Duquesne University.
- Herald, Sandra L. (2015) *Guest Lecturer in Education*
 B.S., M.Ed., Slippery Rock University.
- Howley, Brian H. (2014) *Guest Lecturer in Entrepreneurship*
 B.S., University of Pittsburgh; J.D., Barry University School of Law.
- Klenowski, Paul M. (2009) *Guest Lecturer in Sociology*
 B.A., M.B.A., Wheeling Jesuit University; Ph.D., Indiana University of
 Pennsylvania.
- Kohanski, Elisa C. (2005) *Music Lesson Instructor in Cello*
 B.M., Eastman School of Music; M.M., Carnegie Mellon University.

- Kubik, Paula A. (2005).....*Music Lesson Instructor in Piano/Organ*
B.M., Youngstown University; M.M., Colorado State University.
- Lewis, Cedric E. (2013)..... *Guest Lecturer of Entrepreneurship and Business*
B.B.A., Stetson University; M.B.A., J.D., Nova Southeastern University.
- Marsch, Cynthia L. (2016)..... *Guest Lecturer in Writing*
B.A., M.A., Florida State University.
- May, Douglas L. (1996)..... *Assistant Marching Band Director and*
Music Lesson Instructor in Trombone
B.S., Clarion University of Pennsylvania; M.Mus., Eastern New Mexico University.
- McCullough '10, Jacqueline (2016).....*Guest Lecturer in Biology*
B.S., Grove City College; M.S., Slippery Rock University.
- McFarland, Joanne (1999) *Music Lesson Instructor in Voice*
B.S., Indiana University of Pennsylvania.
- Mobley, Timothy P. (2015) *Guest Lecturer in Music*
B.S., Roberts Wesleyan College; M.M., University of Hartford.
- Omasits '05, Christopher J. (2016)*Guest Lecturer in Education*
B.S., Grove City College; M.Ed., Gannon University.
- Philipp, Hilary C. (2015)*Music Lesson Instructor in Oboe*
Diploma (B.M.), Longy School of Music; M.M., University of Massachusetts.
- Philson, Cynthia L. (2014)..... *Guest Lecturer in English*
B.A., Grove City College; M.Ed., Slippery Rock University.
- Piastro-Tedford, Sasha E. (2011).....*Guest Lecturer in Music and*
Music Lesson Instructor in Voice
B.F.A., Carnegie Mellon University; M.M., Penn State University; D.M.A.,
Shenandoah Conservatory.
- Pritchard, Patricia R. (2017)*Guest Lecturer in Communication Studies and Visual Arts*
B.A., M.A., Duquesne University.
- Renninger, Paula D. (2007) *Guest Lecturer in Exercise Science*
B.S., Pennsylvania State University; M.S., Slippery Rock University.
- Reuber, Debra D.A. (2006)..... *Guest Lecturer in Modern Languages*
B.A., Universite D'Ottawa; M.A., University of Illinois.
- Sanders, Glen E. (2014)..... *Guest Lecturer in Visual Arts and Education*
B.F.A., Edinboro University.
- Scanga, James V. Jr. (1996)..... *Guest Lecturer in Music*
and Music Lesson Instructor in French Horn
B.S., Indiana University of Pennsylvania; M.Mus., Youngstown State University.

- Schnur '87, Joyce O. (2015) *Guest Lecturer in Business*
 B.A., Grove City College; M.B.A., Duquesne University.
- Scott, Julia A. (2006) *Music Lesson Instructor in Harp*
 B.F.A., M.A., Ohio University; M.M., Indiana University; Artist Diploma in
 Performance, Pappert School of Music, Duquesne University.
- Snyder, David O. (2011) *Guest Lecturer in Education*
 B.S.Ed., Edinboro University of Pennsylvania; M.Ed., Old Dominion University.
- Strain, Joy G (2012) *Guest Lecturer in Biology*
 B.S., University of Tennessee at Martin; M.S., Memphis State University.
- Tessmer, David P. (1996) *Music Lesson Instructor in Flute*
 B.A., Houston Baptist University; M.Mus., Duquesne University.
- Toth, Rebecca G. (2010) *Music Lesson Instructor in Voice*
 B.M., Grove City College.
- Weber, Brent A. (2016) *Music Lesson Instructor in Voice*
 B.M., Kansas State University; M.M., University of Missouri; M.M., Yale University.
- Westra, Kathryn A. (2017) *Pew Fine Arts Center Gallery Director and Guest*
Lecturer in Communication Studies and Visual Arts
 B.A., Grove City College.
- Young, M. Susan (2000) *Guest Lecturer in Music and*
Music Lesson Instructor in Voice/Opera
 B.M., University of Houston; M.Mus., Duquesne University.

RETIRED ADMINISTRATION

- Bowne, Anne Parr (1980-1999) *Director of Financial Aid*
- Champion, Harold S. (1993-1999) *Director of Physical Plant*
- DeVelde, Everett C. Jr. (1980-2000) *Director of Technical Services and Assistant*
Professor of Computer Science
- Grundy '65, Diane H. (1969-2013) *Director of Library Services and Assistant Professor*
of English
- Jewell '67, Richard G. (2003-2015) *President Emeritus and Professor of Business Law*
and Public Policy
- Keehlwetter, F. Stanley (1999-2018) *Dean of the Chapel and Guest Lecturer in Humanities*
- Moore, John H. (1996-2003) *President Emeritus and Professor of Economics*
- Morledge '54, Richard A. (1984-1999) *Dean of the Chapel*
- Moser '53, John H. (1959-1995) *Registrar and Associate Professor of Music*
- Paxton '54, Nancy L. (1976-2004) *Vice President for Student Affairs and Dean of*
Students
- Smith '59, Robert W. (1970-2001) *Registrar*
- Sparks '66, John A. (1976-2013) *Dean for the Alva J. Calderwood School of Arts and*
Letters and Professor of Business
- Towle '68, Roger K. (1995-2016) *Vice President for Financial Affairs*

RETIRED FACULTY

- Allgaier, Darrell E. (2003-2011) *Professor of Mathematics*
- Arnold, Edwin P. (1975-2013) *Chair of the Department of Music and Fine Arts Director of the Pew Fine Arts Center and Professor of Music*
- Barr, John F. (1972-1998) *Assistant Professor of Physical Education*
- Bowne, Dale R. (1963-1999) *Samuel P. Harbison Professor of Religion*
- Brown, Janice B. (1994- 2015) *Professor of English*
- Browne, Douglas A. (1981-2014) *Professor of Music*
- Burckle, Jay C. (1961-1999) *Professor of Physics*
- Bussel, William D. (1992-2000) *Professor of Education*
- Calaboyias, Peter J. (1995-2014) *Adjunct Professor of Art and Artist in Residence*
- Carlson '62, Ralph E. (2000-2014) *Professor of Mathematics*
- Chab, Donald E. (1964-1996) *Associate Professor of Chemistry*
- Cole, J. Harvey (1962- 2015) *Adjunct Full Professor of German and English*
- Conder, Harold L. (1973-2016) *Professor of Chemistry*
- Dixon, Diane M. (1997-2015) *Professor of English and Communication Studies*
- Dixon, James G. III (1976-2015) *Professor of English*
- Duda, Frank T., Jr. (1979-2011) *Professor of Electrical Engineering*
- Dupree, James V. (1990-2014) *Professor of Business and Entrepreneurship*
- Ellison, John H. (1970-2008) *Professor of Mathematics*
- Fabian '52, Michael W. (1964-1993) *Professor of Biology*
- Fleming, Larry D. (1974-2007) *Professor of Accounting*
- Folkertsma, Marvin J., Jr. (1974-2014) *Chair of the Department of Political Science and Professor of Political Science*
- Forrester, Cynthia A. (1967-2014) *Professor of Spanish*
- Foster, Ross A. (1969-2000) *Professor of Humanities and Philosophy*
- Foster, William S. (2004-2014) *Adjunct Professor of Education*
- Hamilton, Lois J. (1968-1994) *Assistant Professor of Art*
- Hart, William R. (1960-1994) *Professor of English Literature and Communications*
- Hartman, Grace G. (1967-2004) *Associate Professor of Biology*
- Helfinstine, Robert A. (1987-2006) *Professor of Mechanical Engineering*
- Henry, Marvin C. (1962-2003) *Professor of Mathematics*
- Henry, Patricia Zbell (1964-1993) *Assistant Professor of Physical Education*
- Hinton, William M. (1991-2015) *Professor of Business*
- Jenny, Frederick J. (1984-2014) *Professor of Computer Science and Educational Technology and Director of Instructional Technology*
- Jones, David H. (1990-2008) *Professor of Biochemistry*
- Ketler '71, Bruce W. (1977-2018) *Professor of Business*
- Konzen, Richard A. (1992-2017) *Facilities Director, Pew Fine Arts Center; Professor of Music; and College Organist*
- Leo, Richard A. (1967-2004) *Professor of Physics*
- Léon, Celine T. (1970-2017) *Adjunct Professor of French*
- Lillie, W. Thomas (1983-1996) *Associate Professor of Political Science*
- Lyle, Donald L. (1972-2015) *Chair of the Department of Physical Education and Athletics, Athletic Director, and Professor of Physical Education*
- Mech, Timothy S. (1998-2017) *Professor of Business/Finance and Entrepreneurship.*
- Mitchell-Emigh, L. Kay (1986-2017) *Head Athletic Trainer and Assistant Professor of Exercise Science*
- Naegele, Sara K. (1966-1990) *Assistant Professor of Chemistry*
- Otto, John F. (1973-2010) *Associate Professor of Business*

- Patterson '73, Carolyn M. (1998-2017) *Assistant Director of the Grove City College Early Education Center and Instructor in Education*
- Patterson, Jeffrey L. (1995-2013) *Professor of Accounting*
- Ray, Durwood B. (1994-2011) *Professor of Biology*
- Rice, Alan W. (1979-1999) *Professor of Mechanical Engineering*
- Roberts, Susan K. (1985-2014) *Associate Director of Athletics for Women and Professor of Physical Education*
- Rose, Thomas G. (1979-1995) *Associate Professor of Economics*
- Shannon, William T. (1986-1996) *Professor of Education*
- Smith '72, Christopher W. (1979-2016) *Athletic Director and Associate Professor of Exercise Science*
- Smith '72, Gary S. (1978-2017) *Chair of the Department of History, Professor of History, and Coordinator of the Humanities Core*
- Sodergren, Arnold W. (1973-2011) *Professor of Biology*
- Spradley, Garey B. (1991-2011) *Professor of Philosophy*
- Stansberry, Gloria J. (1966-2006) *Professor of English*
- Stephens, Barbara C. (1977-2006) *Associate Professor of Education*
- Stringer, Randy C. (1993-2017) *Professor of Biblical and Religious Studies*
- Thorne, James D. (1976-1994) *Professor of Education*
- Tilford, Earl H. (2001-2008) *Professor of History*
- Trammell, Catherine M. (1981-2011) *Professor of Modern Languages*
- Trammell, Richard L. (1971-2014) *Professor of Philosophy*
- Van Til, Kathryn A. (1996-2008) *Associate Professor of English and Education*
- Van Til, L. John (1972-2004) *Professor of Humanities and Business*
- Voltz, Ramon J. (1971-2007) *Professor of Mathematics*
- Walters, Cynthia Ann (1966-1998) *Associate Professor of Physical Education*
- Walters, Joseph D. (1972-2012) *Associate Director of Athletics for Men and Professor of Physical Education*
- Wentworth, Theodore O., Jr. (1996-2018) *Professor of Spanish*
- Yeager, Dorian P. (1995-2015) *Professor of Computer Science and Mathematics*
- Yeager, M. Carol (1995-2015) *Adjunct Professor of Biology*

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