

# ALL CAS COURSE LIST

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**ANT 200U • Introduction to Anthropology 3 Credits**

Study of humankind with an emphasis on human social and cultural systems. Focus on one non-Western culture in anthropological perspective. Study of the discipline, methods, and theories of anthropology.

*Prerequisites: GES 130 or GES 244 (may be taken concurrently). Offered: Fall.*

**ANT 241UZ • Peoples and Cultures of Africa 4 Credits**

Comparative ethnography of contemporary African societies and cultures with particular reference to the Sub-Saharan region. Examination of Africa's geography and historical context. Topics include: politics and economies of the region, population and urbanization, social institutions, women's issues, the family, and religion.

*Prerequisites: GES 130 (may be taken concurrently) or GES 244 (may be taken concurrently). Offered: Occasionally summer.*

**ARH 222 • Survey of Art History 4 Credits**

Survey of history from prehistoric painting to the contemporary period, examining major developments, artists, aesthetic concepts, stylistic practices, and use of materials. Compares the way material use and thematic ideas are addressed in different historical and geographic regions around the globe.

*Offered: Spring.*

**ARH 305 • History of Design 3 Credits**

Examination of the history of design from the invention of writing to interactive digital spaces. Looking at the development of aesthetics, materials, style, and function in design as it develops in response to cultural and historical changes.

*Offered: Fall.*

**ARH 440 • Topics in Art History 3 Credits**

Art history investigation focused on a specific time period, culture, medium, or theme designed to provide students with a deep knowledge of the major features, artists, and contexts of the designated topic. Specific topics will be announced prior to registration.

*Offered: Occasionally fall, Occasionally interim, Occasionally spring.*

**ART 100A • Foundations: Color, Composition, and Ideation 3 Credits**

An exploration of foundational aspects of visual expression, including the elements and principles of design, color theory, experimentation, and critique. Students gain experience in a variety of materials and processes through both solo and collaborative projects.

*Offered: Fall, Interim, Spring, Occasionally summer.*

**ART 101A • Foundations: Materials, Space, and Meaning 3 Credits**

An introductory level investigation of three-dimensional form and making. Diverse materials and media are explored and applied to both formal and expressive studio problems. Developmental approaches to artmaking are emphasized.

*Offered: Fall, Occasionally interim, Spring.*

**ART 103A • Foundations: Drawing 3 Credits**

Development of visual perception through observation, drawing, and a study of structural form and space relationships. Experiences in line, value, texture, basic perspective, and composition using various materials and techniques.

*Offered: Fall, Spring.*

**ART 106A • Screen Printing 3 Credits**

Screen printing as a means of creating hand-printed, multi-color fine art prints. Methods include handmade and photo emulsion stenciling and studio art practice.

*Offered: Occasionally interim.*

## All CAS Course List 2

### **ART 107A • Clay Forms** 3 Credits

Explores hand building and wheel throwing techniques in the formation of archetypal ceramic forms and processes.

*Offered: Fall, Occasionally interim, Occasionally spring.*

### **ART 203 • Advanced Drawing** 3 Credits

Advanced work in drawing medium with emphasis on individual, conceptual development and material exploration.

*Prerequisites: ART 103A. Offered: Spring, even # years.*

### **ART 206 • Sculpture** 4 Credits

Sculptural concepts, processes, and materials are used within a guided studio experience that includes an introduction to public art. Students are not required to have specific fabrication skills.

*Offered: Fall, Occasionally spring.*

### **ART 210A • Painting** 4 Credits

An introduction to the fundamentals of painting and personal painting practices. Students develop subject matter as well as the ability to organize pictorial space and compositional ideas.

*Offered: Fall, Spring.*

### **ART 211 • Printmaking** 3 Credits

Hand-printing processes with an emphasis on drawing and composition. Experience in such media as etching, lithography, woodcut, linocut, collagraphy, monotype and color printing.

*Prerequisites: ART 100A or ART 103A. Offered: Fall, Spring.*

### **ART 240 • Creative Practices** 3 Credits

Exploration of creative processes that moves past introductory ways of generating visual ideas to developing self-sustaining and self-directed investigation and enriching techniques for the artist.

*Corequisites: Another 200-level or above ART or DES course, recommended course be taken sophomore year.*

*Offered: Spring.*

### **ART 250A • Introduction to Photography** 3 Credits

Photography as a means of aesthetic and conceptual ideas within the fine arts, rather than for family and vacation snapshots, through both digital and analog forms. Includes technical instruction in camera operation, black and white film developing, printing, and basic Adobe Photoshop. Introduction to photo history and contemporary theory.

*Offered: Fall, Occasionally interim, Spring.*

### **ART 306 • Advanced Sculpture** 4 Credits

Self-directed studio projects are pursued with particular focus on individual growth and development. Art for public spaces is more fully engaged, with students making works for specific audiences and locations.

*Prerequisites: ART 206. Offered: Fall, Occasionally spring.*

### **ART 310 • Advanced Painting** 4 Credits

A continued exploration of painting, including various material experiments and exposure to new processes. Emphasis on the development of visual vocabulary and understanding of contemporary issues in painting. Invention and investigation are stressed.

*Prerequisites: ART210. Offered: Spring.*

### **ART 311 • Advanced Printmaking** 4 Credits

Advanced work in selected media with emphasis on individual research and development.

*Prerequisites: ART 211. Offered: Fall, Spring.*

### **ART 315 • Artist Books and Publications** 3 Credits

Various book forms are explored (hardcover, softcover, newspaper, magazine, and sculptural forms) as an artistic medium engaging sequence, narrative, time, text, and image. Engages the history of artists' books as artworks. Students learn a number of forms for making one-of-a-kind and large edition books.

*Prerequisites: ART 100A or DES 105. Offered: Spring, even # years.*

**ART 334 • Photo Manipulation** 3 Credits

Introduction to use and manipulation of photography in contemporary art practice. Utilizing photographs for conceptual ends, examining process, materiality, and the truth value of photography. Advanced skills developed with the camera, scanners, Adobe Photoshop, and ink jet printers. Software used to alter, manipulate, and composite photographs.

*Offered: Spring, odd # years.*

**ART 336 • Advanced Photography** 4 Credits

Individual aesthetic and conceptual development within the photographic medium, advanced skills in digital or black and white wet photography processes, and investigation of photo history and critical theory (as it relates to photography).

*Prerequisites: ART 250A. Offered: Spring, odd # years.*

**ART 419 • Photography Portfolio** 4 Credits

Individual aesthetic and conceptual development of personal vision into a professional portfolio and investigation of photo history and critical theory (as it relates to individual student's portfolio).

*Prerequisites: ART330, ART332, ART 334, or Consent of instructor. Offered: Spring, odd # years.*

**ART 481 • Internship in Art** 1-4 Credits

Educational and practical experience in applying understanding and skill in an off-campus, professional setting. An internship can be arranged in advertising studios, agencies, printmaking studios, artists' studios, and art museums. Supervised by an art faculty member.

*Prerequisites: Five studio Art courses; Major in art; Consent of department. Offered: Fall or Spring.*

**ART 496 • Senior Art & Design Exhibition** 0 Credit

Installation and completion of Senior thesis work in an exhibit with other seniors. Activities include preparing work for the exhibit, installation, lighting, didactics, hosting an opening, participating in the Art Matrix, and deinstalling work.

*Prerequisites: ART 499. Offered: Spring.*

**ART 498 • Professional Practices: Making Art Your Career** 3 Credits

Prepares students to continue their own studio practice after graduation and graduate school, exhibitions, grants, and residencies. Teaches students the skills for presenting their work in a professional and compelling manner within the forms and procedures expected from the art world.

*Prerequisites: major in the Department of Art and Design, Consent of department. Offered: Spring.*

**ART 499 • Senior Seminar/Thesis Exhibition** 3 Credits

Development of creative independence, culminating in the senior exhibition program or portfolio.

*Prerequisites: ART 240; major in the Department of Art and Design; Consent of department. Offered: Fall.*

**ASL 101 • Introductory American Sign Language I** 4 Credits

Enables students with no knowledge of American Sign Language (ASL) to communicate comfortably in a variety of situations. Focuses on development of expressive, receptive, and visual readiness skills in basic ASL. Introduces conversational vocabulary, fingerspelling, grammatical principles, and syntax. Includes information about deaf culture.

*Offered: Fall, Spring.*

**ASL 102S • Introductory American Sign Language II** 4 Credits

Continuation of functional and practical understanding and communicative use of ASL. Further study of the history and culture of the deaf community through films, discussions, and readings.

*Prerequisites: ASL 101 or Placement exam. Offered: Fall, Spring.*

**ATH 200 • Introduction to Art Therapy** 3 Credits

Introduces the field of art therapy through theory, history, principles, and practices. Engages these topics through reading, writing, lecture, discussion, and experiential exercises. Explores the various techniques and qualities of various art media, and how they impact the healing process.

*Offered: Spring, even # years.*

## All CAS Course List 4

### **ATH 481 • Internship in Art Therapy** 3-4 Credits

Students will do internships in approved settings arranged with museums, galleries, libraries, hospitals, clinics and therapy centers in order to gain first-hand knowledge, experience and basics skills in the practice of art therapy. Internship sites are with approved professional settings, and are supervised by Bethel faculty and site supervisor.

*Prerequisites: ATH 200. TR; Fall, Spring.*

### **BIB 101 • Introduction to the Bible** 3 Credits

Traces the journey of God's people from Abraham and Sarah through the New Testament church, highlighting the unifying self-disclosure of God in the various cultures and types of writing of the Old and New Testaments. A holistic approach is used to introduce students to both historical and thematic content as well as broad but basic exegetical principles.

*Offered: Fall, Interim, Spring.*

### **BIB 205 • Introduction to Spiritual Formation** 3 Credits

Examines key Old and New Testament texts underlying Christian spirituality, differentiating it from other forms of spirituality. The study and practice of historic spiritual disciplines and readings of classic and contemporary works in Christian spirituality, including African, Asian, Hispanic, and European perspectives.

*Prerequisites: BIB 101. Offered: Spring, even # years*

### **BIB 210 • History of Ancient Israel** 3 Credits

Focus on the history of the coastlands along the southern half of the eastern Mediterranean from the Early Bronze through the Maccabean eras, with an emphasis on the rise and history of ancient Israel.

*Prerequisites: BIB 101. Offered: Fall or Spring.*

### **BIB 212 • Reading the Hebrew Bible** 3 Credits

Study of select foundational themes and difficult areas for Christians reading the Hebrew Bible today, with an introduction to a range of methods in interpretation. Topics discussed may include: creation, capital punishment, social justice, violence and holy war, and the status of women.

*Prerequisites: BIB 101. Offered: Fall or Spring.*

### **BIB 220 • The Pentateuch** 3 Credits

Study of mosaic books of the Old Testament, with particular interest in the Genesis account of world beginnings, the Patriarchs, the Exodus and founding of the nation of Israel, and the faith and religion of the Hebrews.

*Prerequisites: BIB 101. Offered: Occasionally.*

### **BIB 230Z • Israel Study Tour** 3 Credits

Historical geography and onsite investigation of the Holy Land with emphasis on sites from the Early Bronze through Byzantine eras. Particular emphasis on sites that underlie the Hebrew Bible, the intertestamental period, and the New Testament.

*Prerequisites: BIB 101. Offered: Occasionally interim.*

### **BIB 236 • Archaeology of the Southern Levant** 3 Credits

Explores the objectives, history, methodology, and results of archaeology of the coastlands along the southern half of the eastern Mediterranean from the Early Bronze through Early Roman eras.

*Prerequisites: BIB 101. Offered: Occasionally.*

### **BIB 240 • Topics in Biblical Studies** 3 Credits

Study of a biblical area or topic. The specific subject is announced when the course is offered.

*Prerequisites: BIB 101. Offered: Occasionally.*

### **BIB 260 • The Life and Teachings of Jesus** 3 Credits

Main events of the life of Jesus and the form and message of His teaching in the light of first century Jewish culture. Use of the Old Testament in the gospels, the structure of the gospels, and their literary genre.

*Prerequisites: BIB 101. Offered: Fall or Spring.*

**BIB 264Z • Greece-Italy Study Tour** 3 Credits

Onsite investigation of the sites and regions that underlie the people, movements, and events of the Early Christian era. The area is examined in light of the historical, geographical, and rich cultural context of the classical Greek and Roman worlds.

*Prerequisites: BIB 101. Offered: Occasionally interim.*

**BIB 265 • The Life and Teachings of Paul** 3 Credits

Life of Paul, his strategic role in the expansion of Christianity, and the contribution of his theology and thought as reflected in his writings.

*Prerequisites: BIB 101. Offered: Fall or Spring.*

**BIB 301J • The Faith of Abraham in Genesis, Paul and James** 3 Credits

The faith of Abraham as reflected in biblical and extra-canonical traditions, with emphasis on Genesis, Romans, Galatians, and the book of James. Attention to the theological and exegetical perspectives of the various documents, unity and diversity within the canon, and contemporary application.

*Prerequisites: BIB 101; GES 160 or GES 244; Sophomore standing. Offered: Occasionally.*

**BIB 302J • Biblical Law in Christian Belief and Practice** 3 Credits

Biblical law as an expression of the character and will of God; the form, content, and use of law throughout Scripture; and the relationship of law and grace. Modern viewpoints on the abiding relevance of biblical law for individuals and societies.

*Prerequisites: BIB 101; GES 160 or GES 244; Sophomore standing. Offered: Occasionally.*

**BIB 304J • Messianic Concepts** 3 Credits

Development of such terms as "Son of Man," "Son of God," and "Messiah" is traced from origins in Old Testament texts of poetry and prophecy to New Testament fulfillment in the Gospels and Epistles.

*Prerequisites: BIB 101; GES 160 or GES 244; Sophomore standing. Offered: Occasionally.*

**BIB 305J • Sleep, Surrender, and Sabbath** 3 Credits

The theology and ethics of rest from a biblical perspective. Focus on key passages in Scripture regarding sleep, dreams, and Sabbath. Explores topics such as creation, the human condition, divine relationality, human dependency, prayer, and social responsibility. Interdisciplinary approach, utilizing historical records of Sabbath practices, scientific research, and sociological analyses.

*Prerequisites: BIB 101; GES 160 or GES 244; Sophomore standing. Offered: Occasionally.*

**BIB 306J • Covenant, Promise, and Fulfillment** 3 Credits

Major covenants between God and humans in both the Old and New Testaments. Relationships between these covenants, especially regarding the theme of promise and fulfillment.

*Prerequisites: BIB 101; GES 160 or GES 244; Sophomore standing. Offered: Occasionally.*

**BIB 307J • Jerusalem: Earthly City and Spiritual Symbol** 3 Credits

Jerusalem as the means of studying God's plans for worldwide redemption. The city where much of biblical history took place and its symbolism as God's earthly and heavenly kingdoms: its geography, history, and relationship to the Biblical covenants.

*Prerequisites: BIB 101; GES 160 or GES 244; Sophomore standing. Offered: Occasionally.*

**BIB 308J • Biblical Theology of Reconciliation** 3 Credits

The goal of reconciliation in personal and socio-political conflicts is examined in light of biblical texts relating to liberation from oppression, establishment of justice, practice of forgiveness, and promotion of peace.

*Prerequisites: BIB 101; GES 160 or GES 244; Sophomore standing. Offered: Occasionally.*

**BIB 309J • A Biblical Theology of Poverty** 3 Credits

Responses to poverty in the Old Testament, intertestamental literature, and the New Testament in light of the socioeconomic setting of these records. Construction of a biblical perspective and implications for Christian communities in North America.

*Prerequisites: BIB 101; GES 160 or GES 244; Sophomore standing. Offered: Occasionally.*

**BIB 310J • Holiness in Biblical Perspective** 3 Credits

Exegetical and theological foundations underlying the biblical notion of holiness in both the Old and New Testaments. Biblical texts in their historical-cultural context, with a view to uncovering biblical understandings of holiness and integrating them into a Christian worldview.

*Prerequisites: BIB 101; GES 160 or GES 244; Sophomore standing. Offered: Occasionally.*

**BIB 311J • Worship in Biblical Perspective** 3 Credits

Exegetical and theological foundations of worship. Old Testament and New Testament patterns of worship and their relevance for the church today.

*Prerequisites: BIB 101; GES 160 or GES 244; Sophomore standing. Offered: Occasionally.*

**BIB 312J • Female and Male in Biblical Perspective** 3 Credits

Significant Old and New Testament passages related to past and current discussions of gender, roles, and ministry in the church.

*Prerequisites: BIB 101; GES 160 or GES 244; Sophomore standing. Offered: Occasionally.*

**BIB 313J • A Biblical Theology of Justice** 3 Credits

Justice, in the full biblical sense, is employed as an integrating focus for the task of God on earth for restoring humankind. Elements of continuity and discontinuity between the Old Testament and New Testament. Location of each major block of biblical data in historical, literary, and social context.

*Prerequisites: BIB 101; GES 160 or GES 244; Sophomore standing. Offered: Occasionally.*

**BIB 314J • The "Word" in Biblical Tradition** 3 Credits

"Word" in its creative, redemptive, active, prophetic, and prescriptive significance in the Christian canon. Beginning with the concept of "word" in creation through "The Word as Law" and "The Prophetic Word," and ending with emphasis on "The Incarnate Word" and the words of the cross, the preacher, and the sacraments.

*Prerequisites: BIB 101; GES 160 or GES 244; Sophomore standing. Offered: Occasionally.*

**BIB 315J • God, Evil, and Spiritual Warfare** 3 Credits

Study of God's ongoing battle with spiritual forces from Genesis to Revelation. Origin, power, activity, and end of Satan and evil angels are traced throughout Scripture. Discussion of implications of these concepts for the problem of evil, a theology of providence, and spiritual formation.

*Prerequisites: BIB 101; GES 160 or GES 244; Sophomore standing. Offered: Occasionally.*

**BIB 316J • Vocation and Calling: A Biblical Perspective** 3 Credits

An investigation of the biblical understandings of vocation and calling in both Old and New Testaments. Examination of foundational issues such as definitions of ministry, personal and spiritual gifting, the role of the church in contemporary context, and calling and vocation as they relate to being Christ-followers.

*Prerequisites: BIB 101; GES 160 or GES 244; Sophomore standing. Offered: Occasionally.*

**BIB 317J • Family in Biblical Perspective** 3 Credits

Biblical perspective of family developed through an examination of family in ancient biblical cultures and a study of family in the Old and New Testaments. A biblical perspective integrated with an exploration of the cultural and historical influences on our contemporary understanding of family.

*Prerequisites: BIB 101; GES 160 or GES 244; Sophomore standing. Offered: Occasionally.*

**BIB 319J • Eschatology: The Last Things in the Church's Scriptures** 3 Credits

Examines "the last things" in the Pentateuch, historical works, poetry, gospels, letters, and apocalypse. Exegesis of the Bible's statements regarding the last things in order to learn how they functioned in their original setting, how they function in Scripture, and how they function in living out a Christian worldview today.

*Prerequisites: BIB 101; GES 160 or GES 244; Sophomore standing. Offered: Occasionally.*

**BIB 321 • Issues in Biblical Studies** 3 Credits

Theoretical and practical introduction to academic study in biblical disciplines. Major theories that influence current study along with methods for research and investigation in these fields.

*Prerequisites: 200-level course in biblical studies; THE 201; Interpreting Biblical Themes (J) course. Offered: Fall.*

**BIB 326 • The Prophets of Israel** 3 Credits

The basic meaning of prophecy and the function of the prophets in Israel; analysis of the context and message of the great Hebrew prophets. Inductive studies bring out theological truths and relate them to the New Testament as well as Christian life as experienced today.

*Prerequisites:* *Interpreting Biblical Themes (J) course or a 200-level biblical studies course. Offered: Occasionally.*

**BIB 331G • Cultural World of the New Testament** 3 Credits

Historical and cultural backgrounds of the New Testament in their Jewish, Greek, and Roman contexts.

*Prerequisites:* *[GES 130; GES 160; Contemporary Western Life and Thought (L) course; World Cultures (U) course] or [GES 244; World Cultures (U) course]. Offered: Occasionally.*

**BIB 334G • Cultural World of the Old Testament** 3 Credits

Historical, cultural, and archaeological backgrounds of the Old Testament in their Ancient Near Eastern contexts.

*Prerequisites:* *[GES 130; GES 160; Contemporary Western Life and Thought (L) course; World Cultures (U) course] or [GES 244; World Cultures (U) course]. Offered: Occasionally.*

**BIB 336 • Poetic Books of the Old Testament** 3 Credits

Doctrinal and devotional themes of Job, Psalms, Proverbs, Ecclesiastes, and Song of Songs. The literary structure of these books and of individual psalms, the nature of Hebrew poetry, and its use in the New Testament and the church.

*Prerequisites:* *Interpreting Biblical Themes (J) course or a 200-level biblical studies course. Offered: Occasionally.*

**BIB 370 • Romans** 3 Credits

A widely influential letter of Paul with emphasis on the themes of justification by faith, ethics (good works), and life in the Spirit. Discussion of the letter's significance for original and contemporary readers.

*Prerequisites:* *Interpreting Biblical Themes (J) course or a 200-level biblical studies course. Offered: Spring, odd # years.*

**BIB 375 • First Corinthians** 3 Credits

Paul's letter to the Corinthian church in its first century setting. Topics include sexuality, divorce, spiritual gifts, the Christian ministry, resurrection, and the contemporary application of these.

*Prerequisites:* *Interpreting Biblical Themes (J) course or a 200-level biblical studies course. Offered: Spring, even # years.*

**BIB 440 • Topics in Biblical Studies** 3 Credits

Advanced course on a biblical area or topic. The specific subject is announced when the course is offered.

*Prerequisites:* *Interpreting Biblical Themes (J) course or a 200-level biblical studies course. Offered: Occasionally.*

**BIB 499 • Seminar: Biblical Studies** 3 Credits

A selected topic in biblical studies related to a course theme. A major research project is followed by an oral and written presentation of its results.

*Prerequisites:* *BIB 321; Interpreting Biblical Themes (J) course; Major in biblical and theological studies. Offered: Spring. Special Notes: Carries cross-credit with theological studies.*

**BIO 100 • Principles of Biology** 3 Credits

Basic principles of modern biology. Topics include the scientific method, biology of the cell, genetic principles, anatomy and physiology of humans, plant biology, and environmental biology.

*Corequisites:* *Registration in BIO 100D is required. Offered: Occasionally.*

**BIO 100D • Principles of Biology Lab** 1 Credit

Laboratory experience accompanying BIO 100.

*Corequisites:* *Registration in BIO 100 is required. Offered: Occasionally.*

**BIO 104 • Human Biology** 3 Credits

Study of the biological aspects of the human species. Includes basic molecules of life, human cell biology, tissue types, anatomy and physiology of the 10 systems, human embryology and development, human genetics, nutrition, disease, and health.

*Corequisites: Registration in BIO 104D is required. Offered: Fall, Spring.*

**BIO 104D • Human Biology Lab** 1 Credit

Laboratory experience accompanying BIO 104.

*Corequisites: Registration in BIO 104 is required. Offered: Fall, Spring.*

**BIO 105 • Medical Terminology** 2 Credits

Study of medical terms. Students study material independently and take proctored examination to demonstrate knowledge of medical language.

*Prerequisites: Consent of instructor. Offered: Fall, Spring.*

**BIO 114D • Introduction to Biodiversity, Ecology, and Adaptation** 4 Credits

An introduction to the diversity, interrelationships, and origins of living organisms. Focuses on three themes: an overview of kinds and diversity of organisms found in six kingdoms, the interaction of organisms with each other and their environment, and the change of organisms through time.

*Offered: Occasionally.*

**BIO 120 • Introduction to Molecular and Cellular Biology** 3 Credits

An introduction to cellular and subcellular aspects of living organisms. Includes a study of basic chemistry, biological molecules, cells, enzymes, metabolism, classical genetics, and molecular genetics.

*Corequisites: Registration in BIO 120D is required. Offered: Fall, Spring. Special Notes: This course is intended for nursing and other science related majors.*

**BIO 120D • Introduction to Molecular and Cellular Biology Lab** 1 Credit

Laboratory experience accompanying BIO 120.

*Corequisites: Registration in BIO 120 is required. Offered: Fall, Spring.*

**BIO 122 • Introduction to Organismic Biology** 3 Credits

An introduction to how living things work. Focuses on two main themes: the correlation between structure and function, and the capacity of organisms to adjust their internal environment in response to short-term and long-term fluctuations in the external environment.

*Corequisites: Registration in BIO 122D is required. Offered: Fall, Spring.*

**BIO 122D • Introduction to Organismic Biology Lab** 1 Credit

Laboratory experience accompanying BIO 122.

*Corequisites: Registration in BIO 122 is required. Offered: Fall, Spring.*

**BIO 124 • Integrative Biology: Genes, Cells, Change** 3 Credits

In a complex world, understanding challenges like infectious disease or environmental change requires a fundamental knowledge of biology. Using relevant examples, students will explore molecules, DNA, biotechnology, evolution, populations, ecosystems, disease, and human systems (e.g. digestive, immune) to gain a perspective on global health and personal responsibility to life.

*Prerequisites: Major in biology, environmental science, environmental studies, biochemistry/molecular biology, neuroscience, or secondary education life science OR a Minor in biology. Corequisites: Registration in BIO 124D is required. Offered: Fall, Spring.*

**BIO 124D • Integrative Biology: Genes, Cells, Change Lab** 1 Credit

Laboratory experience accompanying BIO 124.

*Corequisites: BIO 124. Offered: Fall, Spring.*



**BIO 128 • Integrative Biology: Metabolism, Energy, Biodiversity** 3 Credits

Living organisms face challenges requiring them to either adapt, move, acclimate or perish. Through real-world examples, students will gain a fundamental understanding of homeostasis, enzymes, metabolism, energy flow, movement, human systems (e.g., circulatory, nervous, excretory), photosynthesis, cellular respiration, extinction, biodiversity, transformation of matter and acclimation. *Prerequisites: Major in biology, environmental science, environmental studies, biochemistry/molecular biology, neuroscience, or secondary education: life science OR a Minor in biology. Corequisites: Registration in BIO 128D is required. Offered: Fall, Spring.*

**BIO 128D • Integrative Biology: Metabolism, Energy, Biodiversity Lab** 1 Credit

Laboratory experience accompanying BIO 128.  
*Corequisites: BIO 128. Offered: Fall, Spring.*

**BIO 132 • The Science of Birds** 3 Credits

An overview of the Minnesota avifauna and bird biology. Bird identification is discussed and practiced in the field. Selected topics from bird biology (migration, flight, reproduction, behavior, food, and conservation) are presented through lectures, numerous slide shows, and videos. These topics provide an introduction to the prevailing themes in modern biology.  
*Corequisites: Registration in BIO 132D is required. Offered: Occasionally spring.*

**BIO 132D • The Science of Birds Lab** 1 Credit

Laboratory experience accompanying BIO 132.  
*Corequisites: Registration in BIO 132 is required. Offered: Occasionally spring.*

**BIO 214 • Human Anatomy** 3 Credits

Detailed study of the anatomy and histology of the human body in relation to its functional systems. Laboratory includes human cadaver prosections.  
*Prerequisites: One of the following: BIO 104/104D, BIO 120/120D, BIO 122/122D, BIO 124/124D, BIO 128/128D. Corequisites: Registration in BIO 215 is required. Special Notes: Not open to students who have taken BIO 238/239 except by department consent. Offered: Fall, Spring.*

**BIO 215 • Human Anatomy Lab** 1 Credit

Laboratory experience accompanying BIO 214.  
*Corequisites: Registration in BIO 214 is required. Offered: Fall, Spring.*

**BIO 216 • Human Physiology** 3 Credits

Integration of basic principles of cell biology and mechanisms of physiology to the functions of the major organ systems of the human body; centered around the theme of homeostasis.  
*Prerequisites: BIO 214/215 and one of the following: BIO 104/104D, BIO 120/120D, BIO 218. Corequisites: Registration in BIO 217 is required. Special Notes: Not open to students who have taken BIO 238/239 except by department consent. (A course in chemistry is a recommended prerequisite.) Offered: Fall, Spring.*

**BIO 217 • Human Physiology Lab** 1 Credit

Laboratory experience accompanying BIO 216.  
*Corequisites: Registration in BIO 216 is required. Offered: Fall, Spring.*

**BIO 218 • Biology in a Changing World** 3 Credits

Through the exploration of interactions between genes and their environments, students articulate integrative topics (e.g., evolution, transformation of matter, and energy, information flow, systems and structure/function), identify career options and desired skill sets, make a growth plan and articulate an intellectual autobiography, including faith integration.  
*Prerequisites: BIO 124/124D and BIO 128/128D. Offered: Fall, Spring.*

**BIO 234 • Microbiology** 3 Credits

Microorganisms and viruses with respect to their structure, physiology, genetics, identification, control, host-microbe relationships, and exploitation by humans. Topics include pathogenic organisms, the infectious diseases they cause, and the events and products of vertebrate immune responses.  
*Prerequisites: One of the following: BIO 218 (may be taken concurrently), BIO 120/120D; One course in chemistry (A second course in chemistry is recommended). Corequisites: Registration in BIO 235 is required. Offered: Fall, Spring.*

**BIO 235 • Microbiology Lab 1 Credit**

Laboratory experience accompanying BIO 234.

*Corequisites: Registration in BIO 234 is required. Offered: Fall, Spring.*

**BIO 238 • Human Anatomy and Physiology 3 Credits**

Anatomy and physiology of the human body, with a major emphasis on the principle of homeostasis.

*Prerequisites: One of the following: BIO 104/104D, BIO 120/120D, BIO 218, (may be taken concurrently).*

*Corequisites: Registration in BIO 239 is required. Special Notes: A course in chemistry is a recommended prerequisite. Not open to students who have taken BIO 214/215 or BIO 216/217. Offered: Spring.*

**BIO 239 • Human Anatomy and Physiology Lab 1 Credit**

Laboratory experience accompanying BIO 238.

*Corequisites: Registration in BIO 238 is required. Offered: Spring.*

**BIO 244 • Pathophysiology and Pharmacology 3 Credits**

An integrated exploration of disease processes and the drugs used to treat them. The functional and structural changes that accompany a particular injury, disease, or syndrome are correlated with the study of drugs and their actions on the body.

*Prerequisites: BIO 214/215; BIO 216/217 (may be taken concurrently); BIO 218, (may be taken concurrently); two semesters of chemistry. Corequisites: Registration in BIO 245 is required. Offered: Spring.*

**BIO 245 • Pathophysiology and Pharmacology Lab 1 Credit**

Laboratory experience accompanying BIO 244.

*Corequisites: Registration in BIO 244 is required. Offered: Spring.*

**BIO 248 • Clinical Pathophysiology and Pharmacology 3 Credits**

An integrated exploration of disease processes and the drugs used to treat them. The functional and structural changes that accompany a particular injury, disease, or syndrome are correlated with the study of drugs and their actions on the body.

*Prerequisites: Acceptance into the Nursing program or Consent of instructor. Corequisites: Registration in BIO 249 is required. Offered: Spring. Special Notes: Not open to students who have taken BIO 244/245.*

**BIO 249 • Clinical Pathophysiology and Pharmacology Lab 1 Credit**

Laboratory experience accompanying BIO 248.

*Corequisites: Registration in BIO 248 is required. Offered: Spring.*

**BIO 316 • Wildlife Ecology and Management 3 Credits**

Analysis of terrestrial vertebrate populations, communities, and habitats. Exploration of how these analyses are applied to the manipulation, exploitation, protection, and restoration of animal populations and communities.

*Prerequisites: BIO 218 (may be taken concurrently) or (two of: BIO 122/122D, BIO 128/128D, ENS 104/104D) and Junior or senior standing. Corequisites: Concurrent registration in BIO 317 is required. Special Notes: Carries cross-credit in environmental science. Offered: Spring, even # years.*

**BIO 317 • Wildlife Ecology and Management Lab 1 Credit**

Laboratory experience accompanying BIO 316. Includes some outdoor and off-campus investigations.

*Corequisites: Registration in BIO 316 is required. Offered: Spring, even # years.*

**BIO 318KZ • Ecology in the Tropics: Natural History and Future Prospects 4 Credits**

Travel in Kenya or Ecuador surveying the land, climate, plants, animals, homes, transportation, and industries, noting especially the impact of human presence. Ecuador includes the Amazon rainforest, Andean cloud forests, volcanic mountains, highlands, towns, cities, and the Galapagos Islands. Kenya includes Nairobi, African savanna, the Rift valley, and Masai Mara.

*Prerequisites: Laboratory Science (D) course and Mathematics (M) course. Offered: Interim. Special Notes: Carries cross-credit in environmental science and general studies.*

**BIO 324 • Human Ecology** 3 Credits

Interrelationships between humans and the natural environment. Overpopulation, resource use, and pollution studied from biological, social, and economic standpoints, and skill development in the critical examination of the impacts of humans and our technology on the natural world.

*Prerequisites:* One year of chemistry; *BIO 218* (may be taken concurrently) or both *BIO 122/122D* and *ENS 104/104D*; Junior or senior standing. *Corequisites:* Registration in *BIO 325* is required. *Offered:* Occasionally.

**BIO 325 • Human Ecology Lab** 1 Credit

Laboratory experience accompanying *BIO 324*.

*Corequisites:* Registration in *BIO 324* is required. *Offered:* Occasionally.

**BIO 326 • Vertebrate Histology** 3 Credits

Microscopic structure of cells, tissues, and organs in vertebrate animals, with special emphasis on the way structural units are integrated. At all times efforts are made to correlate structure with specific physiological functions.

*Prerequisites:* *BIO 218*. *Corequisites:* Registration in *BIO 327* is required. *Offered:* Occasionally.

**BIO 327 • Vertebrate Histology Lab** 1 Credit

Laboratory experience accompanying *BIO 326*.

*Corequisites:* Registration in *BIO 326* is required. *Offered:* Occasionally.

**BIO 328 • Invertebrate Biology** 3 Credits

A survey of invertebrate groups from protozoa to prochordates with emphasis on organizational, functional, and ecological significance. Special attention is given to the morphology, life histories, and physiology of invertebrates within the context of survival in specialized environments.

*Prerequisites:* *BIO 218* (may be taken concurrently) or two of the following: *BIO 122/122D*, *BIO 128/128D*, *ENS 104/104D*. *Corequisites:* Registration in *BIO 329* is required. *Offered:* Spring, odd # years.

**BIO 329 • Invertebrate Biology Lab** 1 Credit

Laboratory experience accompanying *BIO 328*.

*Corequisites:* Registration in *BIO 328* is required. *Offered:* Spring, odd # years.

**BIO 330 • Ecology** 3 Credits

Structure and function of wild nature. Topics include interrelationships of organisms with their environments, factors that regulate such interrelationships, and various roles that humans play in modifying patterns and processes of nature at organism, community, and ecosystem levels.

*Prerequisites:* *BIO 218* (may be taken concurrently) or two of the following: *BIO 122/122D*, *BIO 126/127*, *BIO 128/128D*, *ENS 104/104D*. *Corequisites:* Registration in *BIO 331* is required. *Special Notes:* This is a designated research course. *Offered:* Fall, odd # years.

**BIO 331 • Ecology Lab** 1 Credit

Laboratory experience accompanying *BIO 330*.

*Corequisites:* Registration in *BIO 330* is required. *Offered:* Fall, odd # years.

**BIO 332 • Genetics** 3 Credits

Principles that control inheritance, with examples chosen from plant and animal research, population genetics, cytogenetics, molecular genetics, and current work on human genetics.

*Prerequisites:* *BIO 218* (may be taken concurrently) or *BIO 120/120D* and Two courses in chemistry.

*Corequisites:* Registration in *BIO 333* is required. *Offered:* Fall.

**BIO 333 • Genetics Lab** 1 Credit

Laboratory experience accompanying *BIO 332*.

*Corequisites:* Registration in *BIO 332* is required. *Offered:* Fall.

**BIO 336 • Entomology and Parasitology** 3 Credits

A comparative study of the major invertebrate groups from anatomical, physiological, and ecological perspectives with attention to insects and parasitic invertebrates.

*Prerequisites:* *BIO 218* (may be taken concurrently) or (two of the following: *BIO 122/122D*, *BIO 126/127*, *BIO 128/128D*, *ENS 104/104D*) and Junior or senior standing. *Corequisites:* Registration in *BIO 337* is required.

*Offered:* Occasionally.

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### **BIO 337 • Entomology and Parasitology Lab 1 Credit**

Laboratory experience accompanying BIO 336.

*Corequisites: Registration in BIO 336 is required. Offered: Occasionally.*

### **BIO 338 • Endocrinology 3 Credits**

Processes by which hormones exert control over many aspects of reproduction, development, growth, metabolism, and behavior. Topics include the chemical nature of hormones, receptors and signaling pathways, morphology and histology of endocrine organs, regulation of hormone synthesis and secretion, and mechanism of action in target tissues.

*Prerequisites: BIO 218 (may be taken concurrently) or NSC 130/130D, BIO 120/120D and BIO 122/122D.*

*Corequisites: Registration in BIO 339 is required. Offered: Fall, even # years. Special Notes: A course in physiology is a recommended prerequisite.*

### **BIO 339 • Endocrinology Lab 1 Credit**

Laboratory experience accompanying BIO 338. Work is largely experimental, using bioassay procedures.

*Corequisites: Registration in BIO 338 is required. Offered: Fall, even # years.*

### **BIO 342 • Aquatic Biology 3 Credits**

Biological and physical aspects of natural, freshwater ecosystems, including fish and other aquatic animals, aquatic plants, algae, and their interrelationships with each other and the unique aqueous environment in which they live.

*Prerequisites: BIO 218 (may be taken concurrently) or two of the following: BIO 122/122D, BIO 128/128D, ENS 104/104D. Corequisites: Registration in BIO 343 is required. Offered: Fall, even # years.*

### **BIO 343 • Aquatic Biology Lab 1 Credit**

Laboratory experience accompanying BIO 342. Includes some outdoor and off-campus investigations.

*Corequisites: Registration in BIO 342 is required. Offered: Fall, even # years.*

### **BIO 346 • Animal Behavior 3 Credits**

Behavior from primitive invertebrates to advanced mammals, highlighting trends in behavior systems. Natural setting studies in the ethology tradition, comparative psychology studies, and biosociological principles with their implications for human social systems.

*Prerequisites: PSY 100 or BIO 218 (may be taken concurrently); Junior or senior standing. Corequisites:*

*Registration in BIO 347 is required. Special Notes: Carries cross-credit in psychology. Offered: Fall, even # years.*

### **BIO 347 • Animal Behavior Lab 1 Credit**

Laboratory experience accompanying BIO 346.

*Corequisites: Registration in BIO 346 is required. Offered: Fall, even # years.*

### **BIO 349 • Pharmacology 2 Credits**

Examination of pharmacotherapeutic agents used in the treatment of illness and the promotion, maintenance, and restoration of wellness in diverse individuals across the lifespan. Explores the principles of pharmacology with an emphasis on pharmacokinetics, pharmacodynamics, pharmacogenetics, and adverse drug reactions of selected pharmacotherapeutic agents, with a focus on concepts of safe use and monitoring the effects of pharmacotherapeutic agents.

*Prerequisites: Acceptance into the nursing program or Consent of instructor. Corequisites: NUR 202, BIO 350. Offered: Spring.*

### **BIO 350 • Clinical Pathophysiology 3 Credits**

An exploration of disease processes exploring the functional and structural changes that accompany a particular injury, disease, or syndrome, as well as explores the differences in physiologic response to health and illness in diverse populations across the lifespan from a healthcare perspective.

*Prerequisites: Acceptance into the nursing program or Consent of instructor. Corequisites: NUR 202 or BIO 349. Offered: Spring.*

**BIO 354 • Cell Biology** 3 Credits

The molecular organization and function of cells and their organelles. Understanding how cell biology information is obtained experimentally.

*Prerequisites:* CHE 224/225; BIO 218 (may be taken concurrently) or BIO 332/333 or both PSY 100 and NSC 130/130D. *Corequisites:* Registration in BIO 355 is required. *Special Notes:* This is a designated research course. *Offered:* Spring.

**BIO 355 • Cell Biology Lab** 1 Credit

Laboratory experience accompanying BIO 354.

*Corequisites:* Registration in BIO 354 is required. *Offered:* Spring. *Special Notes:* This is a designated research course.

**BIO 358 • Neurobiology** 3 Credits

Nervous system of animals and humans from the sub cellular to organismic and behavioral levels. Includes significant attention to the senses as well as mechanisms of neuronal communication, plasticity, and memory.

*Prerequisites:* BIO 218 (may be taken concurrently) or PSY 100 and NSC 130/130D; Junior or senior standing. *Corequisites:* Registration in BIO 359 is required. *Offered:* Fall. *Special Notes:* Carries cross-credit in neuroscience.

**BIO 359 • Neurobiology Lab** 1 Credit

Laboratory experience accompanying BIO 358.

*Corequisites:* Registration in BIO 358 is required. *Offered:* Fall. *Special Notes:* Carries cross-credit in neuroscience.

**BIO 362 • Developmental Biology** 3 Credits

Developmental biology asks "How does a single fertilized egg give rise to all the different cell, tissue, and organ types of the adult organism?" Developmental processes resulting in different cell, organ, and tissue types and the mechanisms underlying those processes studied at the cellular, genetic, molecular, and biochemical levels.

*Prerequisites:* BIO 120/120D or BIO 124/124D; BIO 218 (may be taken concurrently) or 8 credits of BIO courses not including BIO 124/124D and BIO 128/128D; Two courses in chemistry. *Corequisites:* Registration in BIO 363 is required. *Special Notes:* This is a designated research course. *Offered:* Spring, even # years.

**BIO 363 • Developmental Biology Lab** 1 Credit

Laboratory experience accompanying BIO 362. Includes surgical manipulation of living organisms to elucidate developmental principles.

*Corequisites:* Registration in BIO 362 is required. *Offered:* Spring, even # years. *Special Notes:* This is a designated research course.

**BIO 368 • Structure and Development of Vertebrates** 3 Credits

An integrated and systematic approach to descriptive embryology and comparative anatomy of vertebrate species.

*Prerequisites:* BIO 218 (may be taken concurrently). *Corequisites:* Registration in BIO 369 is required. *Offered:* Fall, odd # years.

**BIO 369 • Structure and Development of Vertebrates Lab** 1 Credit

Laboratory experience accompanying BIO 368.

*Corequisites:* Registration in BIO 368 is required. *Offered:* Fall, odd # years.

**BIO 372 • Plant Taxonomy and Ecology** 3 Credits

Identification and distribution of flowering plants, including field work, keying, and laboratory preservation. Biogeography and factors important in plant distribution.

*Prerequisites:* BIO 218 (may be taken concurrently) or two of the following: BIO 122/122D, BIO126/127, BIO 128/128D, ENS 104/104D. *Corequisites:* Registration in BIO 373 is required. *Offered:* Fall, odd # years.

**BIO 373 • Plant Taxonomy and Ecology Lab** 1 Credit

Laboratory experience accompanying BIO 372.

*Corequisites:* Registration in BIO 372 is required. *Offered:* Fall, odd # years.

**BIO 376 • Animal Physiology** 3 Credits

Comparative physiology of animal nerves, muscles, hormones, circulation, respiration, excretion, digestion, and the way those systems function intact with processes of feeding, energetics, osmoregulation, metabolism, locomotion, biomechanics, and temperature regulation necessary for an organism's survival.

*Prerequisites:* Two courses in chemistry and BIO 218 (may be taken concurrently) or both PSY 100 and NSC 130/130D. *Corequisites:* Registration in BIO 377 is required. *Offered:* Spring, even # years.

**BIO 377 • Animal Physiology Lab** 1 Credit

Laboratory experience accompanying BIO 376.

*Corequisites:* Registration in BIO 376 is required. *Offered:* Spring, even # years.

**BIO 380 • Environmental Plant Biology** 3 Credits

Explores the significant roles plants play in the environment: driving and responding to carbon, water availability, nutrient levels and light. The influence of abiotic factors on photosynthetic pathways, productivity, and the movement of matter and energy reveal how plants respond to rapid environmental changes. Includes work with data and statistics.

*Prerequisites:* BIO 218 (may be taken concurrently) or two of the following: BIO 122/122D, BIO126/127, BIO 128/128D, ENS 104/104D; one semester of chemistry. *Corequisites:* Registration in BIO 383 is required. *Special Notes:* This is a designated research course. *Offered:* Spring, odd # years.

**BIO 383 • Environmental Plant Biology Lab** 1 Credit

Laboratory experience accompanying BIO 380. Includes some outdoor and off-campus investigations.

*Corequisites:* Registration in BIO 380 is required. *Offered:* Spring, odd # years. *Special Notes:* This is a designated research course.

**BIO 384 • Immunology** 3 Credits

Study of the molecular and cellular mechanisms that allow organisms to recognize, control, and eliminate "nonself" entities such as bacterial pathogens, foreign tissue grafts, and even transformed (cancerous) cells.

*Prerequisites:* Two semesters of chemistry and either BIO 218 (may be taken concurrently) or BIO 120/120D and BIO 122/122D. (One of the following: BIO 234/235, BIO 332/333, BIO 354/355 is strongly recommended). *Corequisites:* Registration in BIO 387 is required. *Special Notes:* This is a designated research course. *Offered:* Fall, odd # years.

**BIO 387 • Immunology Lab** 1 Credit

Laboratory experience accompanying BIO 384.

*Corequisites:* Registration in BIO 384 is required. *Offered:* Fall, odd # years. *Special Notes:* This is a designated research course.

**BIO 388 • Biochemistry I** 3 Credits

Physical and chemical properties of living systems with an emphasis on macromolecular interaction, structure, and function. Structure, classification, purification, and function of nucleic acids, proteins, carbohydrates, and lipids, including membrane transport and enzymology.

*Prerequisites:* BIO 120/120D or BIO 124/124D; CHE 226/227 (BIO 128/128D recommended). *Corequisites:* Registration in BIO 389 is required. *Special Notes:* Not open to students who have taken CHE 304/305, Carries cross-credit in chemistry. *Offered:* Fall.

**BIO 389 • Biochemistry I Lab** 1 Credit

Laboratory experience accompanying BIO 388. Techniques include spectroscopy, chromatography, centrifugation, electrophoresis, and enzyme kinetics.

*Corequisites:* Registration in BIO 388 is required. *Offered:* Fall.

**BIO 396 • Molecular Biology** 3 Credits

Modern advanced molecular genetic research. Topics covered include regulation of gene expression during development, molecular biology of cancer, animal virology, eukaryotic gene organization, and methods in gene manipulation.

*Prerequisites:* BIO 332/333; one additional biology course; CHE 224/225; CHE 226/227. *Corequisites:* Registration in BIO 397 is required. *Special Notes:* This is a designated research course. *Offered:* Spring.

**BIO 397 • Molecular Biology Lab** 1 Credit

Laboratory experience accompanying BIO 396. Consists of research projects utilizing recombinant DNA/genetic engineering techniques.

*Corequisites: Registration in BIO 396 is required. Offered: Spring. Special Notes: This is a designated research course.*

**BIO 399 • Introduction to Research** 1 Credit

An introduction to research methodology in the biological sciences, with experience in the use of biological literature and an examination of how to distinguish and evaluate different types of scientific writing and presentations. Experience in the development of a research proposal.

*Prerequisites: BIO 218 and major in biology, biochemistry/molecular biology, or science education 9-12: life science emphasis; Junior standing. Special Notes: Carries cross-credit in environmental studies. Offered: Fall, Spring.*

**BIO 400 • Ultrastructure** 3 Credits

Electron microscopy as a tool in the sciences with emphasis on its use in biological investigation. Students prepare a portfolio of micrographs on a variety of material. Demonstrations, discussions, seminars, field trips, and individual practice.

*Prerequisites: BIO 124/124D; Junior or senior standing. Corequisites: Registration in BIO 401 is required. Offered: Occasionally.*

**BIO 401 • Ultrastructure Lab** 1 Credit

Laboratory experience accompanying BIO 400.

*Corequisites: Registration in BIO 400 is required. Offered: Occasionally.*

**BIO 409 • Advanced Human Gross Anatomy** 4 Credits

For the undergraduate pre-health professions student. A regional approach to the study of anatomy through the supervised and directed student dissection of human cadavers. Identification of detailed structures and understanding of their significance to the body.

*Prerequisites: BIO 214/215 or Consent of instructor. Offered: Interim.*

**BIO 481 • Internship in Biology** 3 Credits

A learning/practicing experience in which the student applies biological understanding and skills in an off-campus professional setting.

*Prerequisites: Major or minor in biology and Junior or senior standing. Offered: Fall, Spring.*

**BIO 493 • Literature Review in Biology** 1 Credit

Thorough review of the primary and secondary literature pertaining to a particular question, problem, or phenomenon in the biological sciences. Culminates in written report that is presented orally in BIO 499.

*Prerequisites: BIO 399; Senior standing; Consent of instructor. Offered: Fall, Spring.*

**BIO 495 • Biology Seminar** 2 Credits

Readings and discussions of topics that relate biology to one's Christian faith.

*Prerequisites: BIO 399; Senior standing. Offered: Fall, Spring.*

**BIO 496 • Biology Research** 1 Credit

Students collect original data through independent laboratory research or field research under the supervision of a faculty member.

*Prerequisites: BIO 399; Completion or co-completion of a tagged research course; Consent of instructor. Special Notes: May be repeated once for credit. Offered: Fall, Spring.*

**BIO 497 • Advanced Biology Research** 1 Credit

Working under the supervision of a faculty mentor, students analyze the results of their original research completed in BIO 496 and write up their findings in a formal scientific paper. Results will be presented in class and possibly outside venues.

*Prerequisites: BIO 496 and Consent of instructor. Offered: Fall, Spring.*

**BIO 499 • Biology Symposium** 1 Credit

The presentation of scientific research and literature. Culminates in departmental symposium in which students present their original research or literature review.

*Prerequisites:* BIO 493 or BIO 496. *Special Notes:* Carries cross-credit in environmental studies. Offered: Fall, Spring.

**BUS 100M • Business Calculus** 3 Credits

A non-trigonometric-based introduction to the concepts of the derivative and the integral with a focus on applications in business and economics.

*Prerequisites:* At least two years of high school algebra. Offered: Fall, Interim.

**BUS 106 • Introduction to Business Applications** 1 Credit

A basic understanding of business applications software. Students gain a working knowledge of word processing, presentation software, spreadsheets, desktop publishing, and Internet Research.

*Offered:* Fall, Interim, Spring.

**BUS 130 • Business Problem Solving** 3 Credits

A foundation for understanding and solving business and economic problems. Introduction to business and economic concepts, terminology, and problems along with the mathematical skills needed to solve problems. Emphasis on understanding problems, solutions, and decision making, as well as developing critical-thinking skills needed for success in business and economics.

*Offered:* Fall, Spring.

**BUS 200 • Individual Tax Preparation** 3 Credits

A practical study of taxation through the eyes of the poor, elderly, and recent immigrants. Students gain an understanding of an urban community and barriers that keep residents from filing tax returns. Tax return preparation for the poor, elderly, and recent immigrants is studied.

*Prerequisites:* BUS 210. Offered: Interim.

**BUS 202Z • Introduction to International Business** 3 Credits

An introduction to international business involving off-campus study to expose students to critical concepts and the day-to-day practice of global business. Students interact with a culture through a series of activities. The countries under study vary from year to year.

*Offered:* Interim.

**BUS 210 • Financial Accounting** 4 Credits

Basic financial accounting concepts and their application to the recording and reporting of business events.

*Prerequisites:* BUS 100M, BUS 130, or MAT 124M. Offered: Fall, Spring.

**BUS 212 • Personal Finance** 3 Credits

Management and planning of personal and family finances. Emphasis given to budgeting, investments, individual income tax, and insurance.

*Offered:* Interim.

**BUS 220 • Principles of Marketing** 4 Credits

Role of marketing in society and the economy. The business firm as a marketing system. Management of the firm's marketing effort.

*Prerequisites:* Sophomore standing or prior approval of course instructor Offered: Fall, Spring.

**BUS 230 • Principles of Management** 4 Credits

Fundamentals of managerial activities: planning, organizing, leading, and controlling organizational activity.

*Offered:* Fall, Spring.

**BUS 231 • Human Resource Management** 3 Credits

Role of human resource management within organizations. Overview of human resource planning, job analysis, staffing and selection, training, development, compensation and benefits, and employee relations. Understanding how employment and discrimination law affects the workplace.

*Prerequisites:* BUS 230 or (COM 248 If a non-Business/Economics department student). Offered: Fall, Spring.



**BUS 232 • Innovation and Entrepreneurship 3 Credits**

Practical problems associated with starting and operating a small business, including feasibility analysis, innovation, entrepreneurship, legal and financial aspects, accounting, marketing, and personnel management.

*Prerequisites: BUS 220 and BUS 230. Offered: Spring.*

**BUS 300 • Topics in Business and Administration 3 Credits**

Special topics in business, particularly as they relate to current issues and contemporary developments. Specific topics and prerequisites announced in advance of registration.

*Prerequisites: Related courses as specified. Offered: Occasionally.*

**BUS 306 • Public Administration 3 Credits**

How public policy is put into effect through the administrative agencies of government, the management problems of such agencies, and their relations with the public.

*Prerequisites: POS 100 recommended. Offered: Spring. Special Notes: Carries cross-credit in political science.*

**BUS 309 • Brand Management 3 Credits**

Theoretical and practical knowledge necessary for successful management of brands and the creation of strategies that build and preserve brand equity. Introduces qualitative and quantitative methods of evaluating brand equity, brand strategy at different stages of the product life cycle, developing brand positioning, managing total brand experience and brand relevancy.

*Prerequisites: BUS 220. Offered: Fall, Spring.*

**BUS 310 • Intermediate Accounting I 4 Credits**

Theories of accounting, accounting practice related to current asset measurement, and reporting. Analysis and evaluation of the measurement and reporting on noncurrent assets and current liabilities.

*Prerequisites: BUS 210. Offered: Fall.*

**BUS 311 • Intermediate Accounting II 4 Credits**

Current and alternative accounting theories relating to long-term liabilities, stockholders' equity, special income determination problems, and other accounting topics of current interest.

*Prerequisites: BUS 310. Offered: Spring.*

**BUS 312Z • Federal Income Taxes 3 Credits**

Current federal income tax law as it pertains to individuals, corporations, and partnerships. Includes the concept of taxable income and covers tax planning and tax determination within the provisions of the law.

*Prerequisites: BUS 200. Offered: Spring.*

**BUS 313 • Strategic Managerial Accounting 3 Credits**

Compilation and utilization of internal accounting information for managerial decision making.

*Prerequisites: BUS 210. Offered: Fall, Spring.*

**BUS 315 • Sales and Sales Management 3 Credits**

Emphasizes the concepts and practices of selling and sales management. Provides a guide for preparing sales presentations, one-on-one selling techniques, persuasive communication, oral and verbal presentation skills useful for one-to-one presentations, and the unique concepts of managing a sales team.

*Prerequisites: BUS 220. Offered: Fall.*

**BUS 317 • Business Analytics 4 Credits**

Applies descriptive and predictive analytics of data and facts to decision making in business. Covers techniques of advanced data visualization, multiple regression analysis, time series forecasting, cluster analysis, association rules and machine learning. Uses a variety of business analytics software.

*Prerequisites: Junior standing; MAT 207M or MAT 330. Offered: Spring.*

**BUS 318G • Global Marketing** 3 Credits

Study of marketing concepts and decision-making processes relative to individuals and firms engaged in the global marketplace. An examination of key strategies of global marketing and mission-critical variables including cultural distinctives, role of language and values, politics and laws, pricing norms, product values, and promotional environment.

*Prerequisites:* [GES 130; GES 160; *Contemporary Western Life and Thought (L) course*; *World Cultures (U) course*] or [GES 244; *World Cultures (U) course*] and BUS 220. *One business course recommended. Offered: Fall, Interim, Spring.*

**BUS 319 • Advertising and Promotion** 3 Credits

Principles and techniques of advertising, sales promotion, and public relations. Considers customer motivation, ad copy, physical layout of ads and promotional pieces, media selection, advertising budgets, and coordination of advertising and sales promotion campaigns.

*Prerequisites:* BUS 220. *Offered: Fall, Interim.*

**BUS 321 • Marketing Research** 3 Credits

Marketing research methods, including design, sampling, data collection, and report writing. A research design project is an integral part of the course.

*Prerequisites:* BUS 220 and MAT 207M. *Offered: Fall, Spring.*

**BUS 324 • Consumer Behavior** 3 Credits

A systematic examination of the behavioral, economic, cultural, and systemic factors that influence the behavior of the consumer. Students read relevant research in consumer behavior and design and complete a series of projects exploring the major course topics.

*Prerequisites:* BUS 220. *Offered: Fall, Spring.*

**BUS 325 • Business Analysis** 3 Credits

An understanding of business analysis principles, practices, tools, and techniques. Real-world applications involving the use of Enterprise Business Applications and an Agile project management approach.

*Prerequisites:* BUS 106 or successful completion of the *Business Application Competency Assessment*; BUS 230. *Offered: Fall.*

**BUS 326 • Business Information Systems** 3 Credits

Business information systems and their role in today's organizations. Explores computing hardware, security, networking, databases, enterprise application software, business analysis, project management, and other technology necessary for effective organizations. Strengthens proficiency in business applications.

*Prerequisites:* BUS 106 or successful completion of the *Business Application Competency Assessment*. *Offered: Fall.*

**BUS 327 • Marketing and Management in Spain** 3 Credits

Theoretical and practical concepts of marketing and management in the semi-globalized world. Understand the significant challenges globalization presents to management and marketing, specifically in the context of Spain. Business terminology and reality in a Spanish business environment.

*Prerequisites:* SPA 202UZ. *Offered: Spain Term, Fall. Special Notes: Carries cross listing in languages and cultures. This class is taught and assignments are completed in Spanish.*

**BUS 329 • Student Managed Investment Fund** 1 Credit

Students develop investment-related skills, including but not limited to wealth management, relationship management, marketing, operations, performance reporting, quantitative analysis, and economic analysis. These skills are applied as part of the student-managed investment fund, the Royals Investment Fund, LLC (the Fund).

*Prerequisites:* BUS 210; BUS 344 (*May be taken concurrently*), and selection by the faculty advisor through an application and interview process; *Additional prerequisite for Chief Investment Officer and Fund Managers:* BUS 390. *Offered: Fall, Spring.*

**BUS 330 • Compensation Theory and Practice 3 Credits**

Compensation and reward practices in organizations' wage and salary administration. Theories of design and implementation of pay programs using job evaluation, salary surveys, job and skill-based pay, incentive pay, and other compensation systems.

*Prerequisites: BUS 231. Offered: Fall.*

**BUS 331 • Staffing, Training and Development 3 Credits**

Theories and strategies for maximizing the potential of an organization's workforce. Explores methods for recruiting and selecting employees, orienting them to an organization, using training to properly equip them for their positions, and facilitating career development. Hands-on approach to designing and analyzing surveys, selection tests, and needs assessments.

*Prerequisites: BUS 231. Offered: Spring.*

**BUS 333 • Entrepreneurship Strategies and Tools 3 Credits**

Strategic and tactical tools associated with starting and operating a small or entrepreneurial business. Students develop an understanding of how to move from the development of a business plan to actually financing and running a small business.

*Prerequisites: BUS 210; BUS 232; ECO 201. Offered: Fall.*

**BUS 334 • Principles of Project Management 3 Credits**

Theory and practice of effective project management, including project planning, risk analysis, execution/implementation, and control. Explores project management styles, critical success factors, organizational support systems, project authority and politics, and ethics in project execution. Uses project management software to develop and track project plans for case studies and project simulations.

*Prerequisites: BUS 230, COM 248, or COS 216. Offered: Spring.*

**BUS 335 • Organizational Behavior 3 Credits**

Factors that influence the effectiveness of organizations. Topics include the role of the individual (motivation, personality, learning, work-related attitudes), the group (teamwork, conflict and cooperation, communication), and the organization (organizational design and structure, culture, change processes) in organizational performance.

*Prerequisites: BUS 230. Offered: Spring.*

**BUS 342GZ • International Market Issues 3 Credits**

Intensive study of economics and marketing in an international context. Students study the dynamics of the economy and markets through site visits, thereby developing cross-cultural competencies for the global marketplace.

*Prerequisites: [GES 130; Contemporary Western Life and Thought (L) course; World Cultures (U) course] or [GES 246; World Cultures (U) course]; Consent of instructor. Offered: Occasionally interim.*

**BUS 344 • Managerial Finance 4 Credits**

Principles of financial management, including financial analysis, capital structures, working capital management, and investment decisions.

*Prerequisites: BUS 210. Offered: Fall, Spring.*

**BUS 352 • Financial Modeling & Valuation 3 Credits**

Builds on principles of finance through the use of case studies and Excel modeling to identify, quantify, and manage business risks. Includes developing and utilizing intermediate-level financial analysis skills, critical-thinking objectives, and demonstration of an ability to synthesize material into a defined model of financial valuation.

*Prerequisites: BUS 344. Offered: Fall, Spring.*

**BUS 357 • Principles of Digital Marketing 3 Credits**

Study of digital marketing strategy, content development, and media channels to help students leverage digital techniques and understand how they integrate with the marketing plan as a whole. Students will design and analyze digital campaigns within a team environment. Best practices are leveraged as the digital marketplace evolves. Hands on work emphasized.

*Prerequisites: BUS 220. Offered: Interim. Special Notes: This course carries cross credit in communication studies.*

**BUS 361 • Business Law** 3 Credits

An introduction to the legal aspects and general structure of business dealings. Topics include an overview of the American legal system, general contract law, pertinent parts of the Uniform Commercial Code, and various forms of business organizations. Some aspects of employment and real estate law are also covered.

*Prerequisites: BUS 230 and one other 200-level business course. Offered: Fall, Spring.*

**BUS 371G • International Business** 4 Credits

International business as a bridge between diverse social systems. A panorama of the most important activities in international business and a framework for thinking about them from the perspective of the company manager.

*Prerequisites: [GES 130; GES 160; Contemporary Western Life and Thought (L) course; World Cultures (U) course] or [GES 244; World Cultures (U) course]; enrollment in the Europe Term. One business course recommended. Offered: Occasionally.*

**BUS 390 • Investments** 4 Credits

Characteristics and interrelationships of investments, the operation and regulation of the markets, analysis of risk and return, valuation of speculative assets, portfolio planning, and timing and trading strategies.

*Prerequisites: BUS 344. Offered: Fall, Spring.*

**BUS 410 • Advanced Accounting** 3 Credits

Principles and problems relating to partnerships, international accounting, consolidated financial statements, corporate mergers, and governmental accounting.

*Prerequisites: BUS 311 and all business core courses except BUS 481. Offered: Fall.*

**BUS 414 • Auditing Principles and Procedures** 4 Credits

Auditing objectives, standards, and procedures employed in the examination of business enterprises and verification of their financial statements. Includes an evaluation of internal control, preparation of work papers, report writing, professional ethics, and current trends.

*Prerequisites: BUS 311 and All business core courses except BUS 481 and Senior standing. Offered: Spring.*

**BUS 416 • Business Forecasting and Data Mining** 3 Credits

Teach students business time-series forecasting, database management and querying, and some tools for data mining in business analytics. Specific application will include forecasting sales and revenue, economic trends, clustering data and classifying outcomes. Case studies, real world data, and relevant software will be used.

*Prerequisites: BUS 317 and Major in business with an emphasis in business analysis and analytics and Senior standing. Offered: Spring.*

**BUS 417 • Business Analysis and Analytics Seminar** 3 Credits

Capstone course in Business Analysis and Analytics emphasis. Integration of theories and practices learned in other courses through casework and practical exercises focused on equipping students to enter the business analysis, business analytics and business consulting market. Examines ethical questions that influence decision making.

*Prerequisites: BUS 317; BUS 334; all business core courses except BUS 481. Offered: Spring.*

**BUS 420 • Marketing Seminar** 3 Credits

Capstone course in the marketing emphasis. Main course elements include case study analysis where students integrate prior course knowledge with relevant brand examples. Students utilize critical and ethical analysis of marketing practices and develop marketing strategies and plans with a real client.

*Prerequisites: Three of the following: BUS 315, BUS 318G, BUS 319, BUS 321, or BUS 324; all business core courses except BUS 481; Senior standing. Offered: Fall, Spring.*

**BUS 430 • Strategic Management** 3 Credits

Strategy and policy formulation and implementation from the general manager's perspective. Includes written and oral analyses of comprehensive cases involving multifunctional applications.

*Prerequisites: All business core courses except BUS 481. Offered: Fall.*

**BUS 440 • Capital Markets** 3 Credits

Comprehensive overview of the capital markets with an emphasis on major financial institutions and international financial centers. Evaluation of managing risk within the context of the capital markets in both a domestic and a global economy.

*Prerequisites: All business core courses except BUS 481; BUS 390 or Consent of instructor. Offered: Fall, Spring.*

**BUS 470 • Finance Seminar** 3 Credits

Capstone course in the Finance emphasis. Systematic examination of financial, economic, cultural, ethical, and systemic factors that influence financial decision making. Through a case study approach, students integrate the theories and practices learned in other finance courses. Use of Excel to complete detailed analysis.

*Prerequisites: All business core courses (except BUS 481) and BUS 390 (may be taken concurrently). Offered: Fall, Spring.*

**BUS 475 • Innovation and Entrepreneurship Seminar** 3 Credits

Development of an individualized and intensive personal business plan as major course project. Plan is submitted to a panel of entrepreneurs to evaluate as part of a competition. Seniors are evaluated on their written plan, their presentation, and the overall viability of the proposed new venture. Includes ethical discussions, entrepreneurial guest speakers, and case analyses of entrepreneurial ventures.

*Prerequisites: All business core courses (except BUS 481) and BUS 333. Offered: Spring.*

**BUS 481 • Internship in Business** 3-4 Credits

A learning/practicing experience to apply understanding and skills in an off-campus professional setting. Includes participation in an online course with weekly assignments.

*Prerequisites: Major or minor within the Business and Economics department; Completion of 20 credits of BUS/ECO courses; Consent of department. Grade exceptions: Graded on an S/U basis. Offered: Fall, Spring, Summer.*

**BUS 493 • Seminar - Human Resource Management** 3 Credits

Capstone course in the Human Resource Management emphasis. Integration of theories and practices learned in other courses through casework and practical exercises focused on equipping students to enter the HR labor market. Examines ethical questions that influence HR decision making.

*Prerequisites: All business core courses (except BUS 481) and Senior standing in the HR emphasis. Offered: Spring.*

**CHE 101 • Introduction to Chemistry** 3 Credits

Overview of atoms—their composition, their ability to form bonds, and their ability to interact as molecules. Open to all students but tailored for nursing and allied health fields.

*Corequisites: Registration in CHE 101D is required. Offered: Fall, Spring.*

**CHE 101D • Introduction to Chemistry Lab** 1 Credit

Laboratory experience accompanying CHE 101. Provides a hands-on extension of course topics in a collaborative, laboratory environment. Topics include: reactions, thermodynamics, acids and bases, nuclear decay, and others.

*Corequisites: Registration in CHE 101 is required. Offered: Fall, Spring.*

**CHE 107 • Modern Alchemy: Chemistry for Non-Scientists** 3 Credits

The chemical world including, for example, food, agriculture, household chemicals, plastics, drugs, environmental concerns, and energy production. An overview of chemical concepts with an emphasis on applications of chemistry and their implications for society.

*Corequisites: Registration in CHE 107D is required. Offered: Occasionally.*

**CHE 107D • Modern Alchemy: Chemistry for Non-Scientists Lab** 1 Credit

Laboratory experience accompanying CHE 107.

*Corequisites: Registration in CHE 107 is required. Offered: Occasionally.*

**CHE 113 • General Chemistry I** 3 Credits

Chemical properties and principles, structure and reactivity, stoichiometry, thermodynamics, atomic and molecular theory, and states of matter.

*Prerequisites:* Two years of High school math; High school chemistry or Consent of instructor. *Corequisites:* Registration in CHE 113D is required. *Offered:* Fall.

**CHE 113D • General Chemistry I Lab** 1 Credit

Laboratory experience accompanying CHE 113 to improve experimental skills such as accurate observation, data collection, and analysis while mastering techniques used by chemists for the precise measurements of mass, volume, and concentration. Small group collaboration and experimental design are included.

*Corequisites:* Registration in CHE 113 is required. *Offered:* Fall.

**CHE 200 • Laboratory Safety and Chemical Hygiene** 1 Credit

High standards of safety and chemical hygiene make the science laboratory a safe, comfortable, interesting place to work. This course reviews the standards and federal/state guidelines pertaining to safety and hygiene in the laboratory.

*Prerequisites:* One year of High school chemistry and One semester of college-level science. *Offered:* Fall, Spring.

**CHE 208 • Accelerated General Chemistry** 3 Credits

Chemical properties and principles, stoichiometry, structure, reactivity, atomic theory, states of matter, solutions, thermodynamics, kinetics, equilibria, acids and bases, electrochemistry, descriptive inorganic chemistry, and nuclear chemistry. Intended for science and engineering students who have a strong math background.

*Prerequisites:* MAT 124M (may be taken concurrently). *Corequisites:* Registration in CHE 208D is required. *Offered:* Fall. *Special Notes:* Meets the same requirements of CHE 113/113D and CHE 214/215.

**CHE 208D • Accelerated General Chemistry Lab** 1 Credit

Laboratory experience accompanying CHE 208.

*Corequisites:* Registration in CHE 208 is required. *Offered:* Fall.

**CHE 214 • General Chemistry II** 3 Credits

Study of solutions, chemical kinetics, thermodynamics, solution equilibria, acids and bases, electrochemistry, descriptive inorganic chemistry, and nuclear chemistry.

*Prerequisites:* CHE 113/113D. *Corequisites:* Registration in CHE 215 is required. *Offered:* Spring.

**CHE 215 • General Chemistry II Lab** 1 Credit

Laboratory experience accompanying CHE 214.

*Corequisites:* Registration in CHE 214 is required. *Offered:* Spring.

**CHE 224 • Organic Chemistry I** 3 Credits

Structure, nomenclature, function, and reactivity of organic compounds. Topics include bonding theory, acid-base reactions, conformational analysis, stereochemistry, nucleophilic substitution and elimination reactions, addition reactions, radical reactions, organic reaction mechanisms, and energy relations.

*Prerequisites:* CHE 214/215 or CHE 208/208D. *Corequisites:* Registration in CHE 225 is required. *Offered:* Fall.

**CHE 225 • Organic Chemistry I Lab** 1 Credit

Laboratory experience accompanying CHE 224. Topics include an introduction to organic chemistry laboratory techniques used in the preparation and purification of organic compounds. Infrared spectroscopy, nuclear magnetic resonance spectroscopy, mass spectrometry, and computational chemistry techniques are also introduced.

*Corequisites:* Registration in CHE 224 is required. *Offered:* Fall.

**CHE 226 • Organic Chemistry II 3 Credits**

Continues CHE 224 by exploring the structure, nomenclature, function, and reactivity of additional organic compounds. Topics include the reactions of aromatic and carbonyl containing compounds, carbon-carbon bond-forming reactions, multi-step synthesis, and polymer chemistry. The chemistry of biological compounds such as carbohydrates, DNA, proteins, and lipids is also studied.

*Prerequisites:* CHE 224/225. *Corequisites:* Registration in CHE 227 is required. *Offered:* Spring.

**CHE 227 • Organic Chemistry II Lab 1 Credit**

Laboratory experience accompanying CHE 226. Laboratory includes single- and multi-step synthesis, purification, and identification of organic compounds. Infrared spectroscopy, 1D and 2D nuclear magnetic resonance spectroscopy, mass spectroscopy, and computational chemistry will be used to explore the outcomes of organic reactions and their mechanisms.

*Corequisites:* Registration in CHE 226 is required. *Offered:* Spring.

**CHE 228 • Introduction to Spectroscopy 0.5 Credits**

The basics of infrared spectroscopy, mass spectroscopy and nuclear magnetic resonance spectroscopy are introduced within the context of solving the structures of organic molecules. Structure-function relationships will also be explored using computational chemistry .

*Prerequisites:* CHE 214/CHE 215 or CHE 208/CHE 208D. *Corequisites:* Concurrent enrollment in CHE 224 is required. *Offered:* Fall 2020.

**CHE 229 • Organic I Chemistry Lab Part B 0.5 Credits**

Combined with the Introduction to Spectroscopy course (CHE 228), this course constitutes the completion of the Organic I Laboratory experience. Topics include an introduction to organic chemistry laboratory techniques used in the in the preparation and purification of organic compounds. Topics will include melting point analysis, TLC, liquid-liquid extraction, recrystallization, distillation, reflux.

*Prerequisites:* CHE 228. *Offered:* Interim 2021.

**CHE 304 • Essentials of Biochemistry 3 Credits**

A survey of the structure, function, interactions, and chemical properties of the four major macromolecules: proteins, nucleic acids, lipids, and carbohydrates. Examination of primary metabolic pathways, bioenergetics, regulation, and homeostasis.

*Prerequisites:* CHE 224/CHE 225 and BIO 120/BIO121 or BIO 124/BIO 124D. *Corequisites:* Registration in CHE 305 is required. *Offered:* Fall. *Special Notes:* Not open to students who have taken BIO 388/BIO 389 or CHE 388/CHE 389.

**CHE 305 • Essentials of Biochemistry Lab 1 Credit**

Laboratory experience accompanying CHE 304.

*Corequisites:* Registration in CHE 304 is required. *Offered:* Fall.

**CHE 306 • Advanced Organic Chemistry 3 Credits**

Bonding, kinetics, mechanisms of reactions, stereochemistry, and structure determination of organic compounds.

*Prerequisites:* CHE 226/227 and CHE 344/345. *Corequisites:* Registration in CHE 307 is required. *Offered:* Occasionally.

**CHE 307 • Advanced Organic Chemistry Lab 1 Credit**

Laboratory experience accompanying CHE 306.

*Corequisites:* Registration in CHE 306 is required. *Offered:* Occasionally.

**CHE 312 • Quantitative Analysis 3 Credits**

Principles and practice of modern quantitative analysis. Acid-base and ionic equilibria. Statistics, method selection and development, chromatography, and electrochemistry.

*Prerequisites:* CHE 214/215 or CHE 208/208D. *Corequisites:* Registration in CHE 313 is required. *Offered:* Spring.

**CHE 313 • Quantitative Analysis Lab 1 Credit**

Laboratory experience accompanying CHE 312.

*Corequisites:* Registration in CHE 312 is required. *Offered:* Spring.

**CHE 320 • Instrumental Analysis** 3 Credits

Methods of instrumental analysis. Study of chemical and physical principles and practical application of spectroscopy, spectrometry, chromatography and electroanalysis. Fundamental electronic circuitry and computer data acquisition and control.

*Prerequisites: CHE 312/313 or CHE 226/CHE 227 Corequisites: Registration in CHE 321 is required. Offered: Fall.*

**CHE 321 • Instrumental Analysis Lab** 1 Credit

Laboratory experience accompanying CHE 320.

*Corequisites: Registration in CHE 320 is required. Offered: Fall.*

**CHE 344 • Thermodynamics, Kinetics, and Statistical Mechanics** 3 Credits

Physical chemistry of the laws of thermodynamics and their application to phase and chemical equilibria. Chemical kinetics of reaction rates and reaction mechanisms. Statistical mechanics as it relates spectroscopy with thermodynamics and kinetics.

*Prerequisites: CHE 214/215 or CHE 208/208D; PHY 292/292D; PHY 296/297; MAT 125. Corequisites: Registration in CHE 345 is required. Offered: Fall.*

**CHE 345 • Thermodynamics, Kinetics, and Statistical Mechanics Lab** 1 Credit

Laboratory experience accompanying CHE 344. Includes hands-on experience with physiochemical systems and computational modeling.

*Corequisites: Registration in CHE 344 is required. Offered: Fall.*

**CHE 348 • Quantum Chemistry and Spectroscopy** 3 Credits

Physical chemistry of the laws of quantum mechanics applied to atoms and molecules. Quantum mechanical solutions of model systems and their application to chemical spectroscopy.

*Prerequisites: CHE 208/208D or CHE 214/215; PHY 292/292D; PHY 296/297; MAT 125. Corequisites: Registration in CHE 349 is required. Offered: Spring.*

**CHE 349 • Quantum Chemistry and Spectroscopy Lab** 1 Credit

Laboratory experience accompanying CHE 348. Includes hands-on experience with physiochemical systems and computational modeling.

*Corequisites: Registration in CHE 348 is required. Offered: Spring.*

**CHE 364 • Advanced Inorganic Chemistry** 3 Credits

Chemistry of elements and their compounds, including symmetry, bonding theories, solid-state chemistry, coordination compounds, organometallics, and bioinorganic compounds.

*Prerequisites: CHE 344/345 and One year of organic chemistry or Junior standing. Corequisites: Registration in CHE 365 is required. Offered: Spring.*

**CHE 365 • Advanced Inorganic Chemistry Lab** 1 Credit

Laboratory experience accompanying CHE 364. Laboratory includes synthesis and characterization of inorganic compounds.

*Corequisites: Registration in CHE 364 is required. Offered: Spring.*

**CHE 388 • Biochemistry I** 3 Credits

Physical and chemical properties of living systems with an emphasis on macromolecular interaction, structure, and function. Structure, classification, purification, and function of nucleic acids, proteins, carbohydrates, and lipids, including membrane transport and enzymology.

*Prerequisites: BIO 120/120D or BIO 124/124D; CHE 226/227 (BIO 128/128D recommended). Corequisites: Registration in CHE 389 is required. Offered: Fall. Special Notes: Not open to students who have taken CHE 304/305; Carries cross-credit in biology.*

**CHE 389 • Biochemistry I Lab** 1 Credit

Laboratory experience accompanying CHE 388. Topics include: buffers, protein expression and purification, electrophoresis, enzyme kinetics, and additional advanced techniques.

*Corequisites: Registration in CHE 388 is required. Offered: Fall.*



**CHE 393 • Research 1-4 Credits**

Utilization of the techniques and understanding of chemical principles on a term project. Use of original literature to formulate and conduct an original laboratory or computational research project under the supervision of a chemistry faculty member.

*Prerequisites: Consent of department. Repeatable course: May only be taken for credit once. Offered: Fall, Interim, Spring.*

**CHE 395 • Chemistry Seminar: Research and Professional Development 1 Credit**

Students search the chemical literature and develop a proposal for their capstone research project. Discussion of chemical careers, graduate and professional school preparation, and ethical conduct in science.

*Prerequisites: CHE 200 (may be taken concurrently); Junior standing; Major in chemistry or biochemistry/molecular biology. Offered: Fall.*

**CHE 396 • Biochemistry II 3 Credits**

Metabolic pathways, bioenergetics, metabolic regulation, and metabolism of macromolecules (carbohydrates, lipids, proteins, and nucleotides). Macromolecular synthesis of RNA, DNA, and proteins, including an introduction to biotechnology.

*Prerequisites: CHE 388/389 or BIO 388/389. Corequisites: Registration in CHE 397 is required. Offered: Spring.*

**CHE 397 • Biochemistry II Lab 1 Credit**

Laboratory experience accompanying CHE 396. Laboratory includes mammalian cell culture techniques and bioassays, and plant biochemical techniques including lipid extraction and analysis. RNA and DNA, PCR, and gene expression.

*Corequisites: Registration in CHE 396 is required. Offered: Spring.*

**CHE 490 • Chemistry Seminar: Research 2 Credits**

Students pursue an original research project in Chemistry or Biochemistry supported by a faculty mentor. Required time commitment is approximately 3.5 hours per week per credit, including weekly meeting with faculty mentor.

*Prerequisites: CHE 395 and Consent of instructor. Offered: Fall, Spring.*

**CHE 491 • Research 1-4 Credits**

Students pursue an original research project in Chemistry or Biochemistry supported by a faculty mentor. Required time commitment is approximately 3.5 hours per week per credit, including weekly meeting with faculty mentor.

*Prerequisites: CHE 490 and Consent of department. Offered: Fall, Interim, Spring.*

**CHE 494 • Chemistry Seminar: Research Presentation 1 Credit**

Students prepare and deliver formal presentations of their research results. Seminar meets weekly for discussion of current topics.

*Prerequisites: CHE 490. Offered: Fall, Spring.*

**CHI 101 • Introductory Chinese I 4 Credits**

Development of listening, speaking, reading, and writing skills with an emphasis on promoting communicative competency in Chinese. Opportunities for meaningful communication in Mandarin Chinese.

*Offered: Summer.*

**CHI 102S • Introductory Chinese II 4 Credits**

Continuation of functional and practical understanding and communicative use of the Chinese language. Further study of Chinese history and culture through films, discussions, and readings.

*Prerequisites: CHI 101 or Placement exam. Offered: Summer.*

**CHI 201 • Intermediate Chinese I 4 Credits**

Synthesis and expansion of comprehensive knowledge, grammar, and oral and written communication skills useful in daily interactions. Further development of understanding Chinese culture and societies, and preparation for possible study abroad experience.

*Prerequisites: CHI 102S or Placement exam. Offered: Occasionally.*

**COM 110 • Basic Communication** 3 Credits

Informal and formal communication patterns that characterize daily life, analysis of communication situations, and improvement of effective communication. Includes interpersonal, intercultural, small group, and speaker/audience communication settings.

*Offered: Fall, Interim, Spring.*

**COM 120 • Communication in a Virtual World** 3 Credits

Examines how communication technology and new media impact communication, including: identity formation, interpersonal relationships, group dynamics, and public presentations. Specific technologies such as online social networking and mobile devices are evaluated for their effect on users, challenging students to identify how to intentionally manage their personal use of technology.

*Offered: Occasionally.*

**COM 170A • Media Production I** 4 Credits

Equips students with the most basic “hands-on” visual media production skills in which students learn the fundamentals of visual media production, including multi-camera studio production, digital filmmaking, and digital post-production.

*Offered: Fall, Spring.*

**COM 208U • Native Americans and the Media** 3 Credits

Analysis of media portrayals of Native Americans. Emphasis on Native American cultures and voices, mainstream portrayals of Native Americans through a variety of media, and social and media critical tools for examining media mainstream images of minority groups.

*Prerequisites: GES 130 (may be taken concurrently) or GES 244 (may be taken concurrently). Offered: Occasionally interim.*

**COM 209 • Introduction to Health Communication** 3 Credits

Introduces students to communication surrounding health care. History of health care and theoretical foundations of what health and illness mean. Explores concepts such as provider-patient communication, social support, health literacy, cross-cultural barriers to health care, ethical considerations in health communication and a Christian approach to health and illness.

*Prerequisites: HAS 110 (may be taken concurrently). Offered: Fall.*

**COM 210 • Perspectives on Human Communication** 3 Credits

Examination of the communication discipline through the exploration and application of communication theories. Provides a theoretical foundation by exploring significant communication concepts in the areas of human, media, organizational, and rhetorical communication.

*Offered: Fall, Spring.*

**COM 213 • Media Communication** 3 Credits

An overview of mass media industries, including print, broadcast, cable, film, and the internet. Survey of media history, functions, and impacts on society.

*Offered: Fall, Occasionally interim, Spring.*

**COM 215 • Web Design for Mass Media** 3 Credits

An introduction to the growing world of multimedia design on the web. Students are introduced to the process and techniques used in designing and publishing for the web.

*Offered: Spring. Special Notes: No background with web design is necessary, but familiarity with the internet and a current browser is required.*

**COM 220 • Group Communication** 4 Credits

Vital role that small groups play in daily life, group problem-solving and group interaction, and greater effectiveness in working in small groups. Examination of leadership, group cohesiveness, and conflict management.

*Offered: Fall, Spring.*

**COM 248 • Organizational Communication** 3 Credits

Communication practices and problems found in organizations. Communication concerns related to organizational structure, conflict, effectiveness, roles (emphasizing leadership), work processes, and decision making. Interviewing as an organizational practice and as a research tool.

*Offered: Fall, Occasionally spring.*

**COM 264 • Storytelling** 3 Credits

An examination of communication in electronic media through the analysis and development of narrative structure and story elements as they are used in a variety of media industries. Students will learn to create compelling stories for audio and visual media through the analysis of scene, character arc, action, motif, etc.

*Prerequisites: COM 170A or Consent of instructor. Offered: Interim, even # years.*

**COM 270 • Media Production II** 4 Credits

The second of two "hands-on" media courses in which students learn the specific techniques of cinematography, audio, and editing visual productions. Training in the critical aspects of editing theory and the analysis of the post-production process.

*Prerequisites: COM 170A. Offered: Fall.*

**COM 301A • Oral Interpretation** 4 Credits

Creative process involved in the oral performance of prose, poetry, and drama. Students explore and practice methods and techniques for selecting, analyzing, understanding, and adapting literature for oral performance. Emphasizes artistic expression through the performance of compiled literary scripts individually and in groups.

*Prerequisites: Junior standing or Consent of instructor. Offered: Fall.*

**COM 302 • Media Law** 3 Credits

Examination of mass media law and policy through the use of court cases, policy documents, legislation, legal history, and legal philosophy. Special emphasis on First Amendment and ethical issues related to media practices.

*Offered: Fall, Spring.*

**COM 310K • Communication, Technology and Society** 3 Credits

An examination of the impact communication technology has on communication and society. Evaluation and exploration of technologies such as digital media, the internet, and other emerging technologies. Analysis of the ethical and spiritual implications and applications of these technologies.

*Prerequisites: Laboratory Science (D) course and Mathematics (M) course. Offered: Fall, Occasionally interim, Spring.*

**COM 314G • Gender Communication** 3 Credits

Examines the force of rhetoric on historical and social movements since 1800. Concentrates on movements that cross gender lines and impact modern men and women. Religious revivals and Christian action groups as related to the sweep of history. Considers gender differences and similarities, verbal and nonverbal.

*Prerequisites: [GES 130; GES 160; Contemporary Western Life and Thought (L) course; World Cultures (U) course] or [GES 244; World Cultures (U) course]. Offered: Fall.*

**COM 315G • European Language and Culture Area Study** 3 Credits

An introduction to specific European cultures, languages, and communication styles. Students experience European cultures through first-hand interaction, special speakers, readings, and class excursions. Language lessons equip students to complete basic social tasks. Topics include worldview, education, political economy, ecology, history, and art as reflections of regional communication style.

*Prerequisites: [GES 130; GES 160; Contemporary Western Life and Thought (L) course; World Cultures (U) course] or [GES 244; World Cultures (U) course]. Offered: Europe term; Fall, odd # years.*

**COM 318 • Argumentation and Debate** 4 Credits

Argumentation and debate principles, with application to written analysis, briefs, speeches, and debates. Analysis of an issue, reasoning and evidence, in-depth research, and oral delivery.

*Offered: Spring.*

**COM 319 • Health Campaigns and Technology 3 Credits**

Explores how health campaigns and technology influence individual and societal health behavior and attitudes. Examines both theoretical and applied approaches to health literacy, health informatics, and the process of influencing health-related choices. Culminates with the creation of a health campaign that utilizes appropriate theories, methods, and technologies.

*Prerequisites: COM 209. Offered: Spring.*

**COM 322 • Advanced Group Communication 4 Credits**

Advanced examination of group development and team building. Various theories and models of group formation and team building are analyzed and experienced as students become part of multiple Christian communities. Students learn how groups relate in differing cultures and how their Christian faith can play a role in group functioning.

*Offered: Europe term; Fall, odd # years.*

**COM 323 • Event Management & Leadership 3 Credits**

Designing integrated communication approaches for conferences, professional meetings, celebratory events, and community outreach programs. Engages the professional, interpersonal, and organizational coordination of information, people, and budgets. Specific attention to developing creative and constructive responses to unanticipated “rhetorical interruptions” and to identifying opportunities for institutional enhancement.

*Prerequisites: COM 248. Offered: Spring, odd # years.*

**COM 324 • Professional and Technical Communication 4 Credits**

Introduction to professional and technical communication skills. Topics include interviewing, technical speaking, speaking and writing to a lay audience, and visual communication skills. Students will learn how to present complex information in a variety of formats with an audience-centered approach.

*Offered: Spring, even # years.*

**COM 325 • Political Communication 3 Credits**

Analysis of the theoretical background behind political communication from a public speaking and media perspective. Attention to decision-making skills required in political campaigns. Discussion of advanced persuasive campaign theory.

*Prerequisites: COM 110 or COM 210 or Consent of instructor. Special Notes: Carries cross-credit in political science. Offered: Occasionally.*

**COM 340 • Facilitating Difficult Conversations 3 Credits**

Exploration of inter-group dialogue. Examines the challenges of engaging in difficult conversations, including topics such as perception, social identities, emotional triggers, narratives, and privilege. Students participate in dialogue on difficult topics and become skilled in listening, questioning, and facilitating small group interactions.

*Prerequisites: GES 140. Offered: Occasionally.*

**COM 350 • Corporate Communication 3 Credits**

Theories and principles of corporate communication, including issues related to public relations, media relations, corporate identity management, investor communication, and crisis communication in both for-profit and not-for-profit organizations.

*Prerequisites: BUS 230 or COM 248. Offered: Interim.*

**COM 352 • Broadcast Journalism 3 Credits**

Theories and principles of broadcast writing with practical experience in writing news stories for radio and television. Analysis of broadcast news programming and procedures.

*Prerequisites: COM 213. Offered: Fall, even # years.*

**COM 355Z • Intercultural Communication 4 Credits**

The study of socio-cultural variability and its influence on verbal and nonverbal communication.

Beginning with cultural self-awareness, the examination of theory is balanced by an examination of practical applications designed to improve intercultural competence in various contexts.

*Prerequisites: World Cultures (U) course. Special Notes: The course includes a 30-hour intercultural service learning component. Offered: Europe term; fall, odd # years, Fall, even # years, Spring.*

**COM 357 • Principles of Digital Marketing 3 Credits**

Study of digital marketing strategy, content development and media channels to help students leverage digital techniques and understand how they integrate with the overall marketing plan. Students will design and analyze digital campaigns within a team environment. Best practices are leveraged as the digital marketplace evolves. Hands on work emphasized.

*Prerequisites: BUS 220. Offered: Interim. Special Notes: This course carries cross credit in business.*

**COM 361 • Rhetorical Criticism 3 Credits**

Study of approaches to rhetorical criticism. Critical evaluation of a wide range of communication texts, their possible meanings, and their implications for various audiences and situations. Students learn methods used to analyze communication texts as well as historical and future trends in the field of rhetorical criticism.

*Prerequisites: COM 210. Offered: Fall.*

**COM 363 • Methods of Communication Research 4 Credits**

The modern foundations for study, evaluation, and research in the entire field of communication. Readings, statistics, and finished research projects are the focus of study.

*Prerequisites: COM 210 and Two courses in communication. Offered: Fall, Spring.*

**COM 365 • Crisis Communication 3 Credits**

Crisis communication is a subfunction of organizational communication. Examines examples of crises, crisis communication theory, and crisis management approaches, in addition to ethical considerations for all phases of dealing with organizational crises.

*Prerequisites: COM 350 or Consent of instructor. Offered: Occasionally fall.*

**COM 366 • Strategic Social Media in Organizations 3 Credits**

Examination of the role of social media in business marketing and public relations. Analyzes how new media are changing the way businesses sell their products, communicate with customers, make decisions, and create community.

*Offered: Occasionally fall.*

**COM 367 • Interpersonal Conflict 3 Credits**

Theories and principles of interpersonal conflict are examined. How personal history, tactics, styles of expression and strategies of interaction impact types of conflict and their eventual resolution.

Evaluates models of conflict resolution with an emphasis on issues of forgiveness and reconciliation.

*Offered: Occasionally.*

**COM 368 • Nonverbal Communication 3 Credits**

Nonverbal communication codes examined, including their structures, usages, and interrelationships. Understanding, analysis, and application of nonverbal communication through lecture, discussion, and experiential activities. Explores the impact of nonverbal communication on culture and interaction.

*Offered: Occasionally.*

**COM 370 • Interpersonal Communication 4 Credits**

Theory and pragmatics related to dyadic communication. Explores issues such as self-identity, self-esteem, listeners, emotions, conflict, relational development and maintenance, gender, and nonverbal communication. Opportunity to evaluate and develop personal interaction skills.

*Offered: Fall, Spring.*

**COM 373 • Digital Filmmaking 4 Credits**

Hands-on, single-camera production on location. Areas of study include cinema verité, documentary, and experimental/music video. All projects are edited with non-linear computer systems, and published to DVD and web.

*Prerequisites: COM 170A; COM 270, or Consent of instructor. Offered: Spring, odd # years.*

**COM 374 • Broadcast Production 4 Credits**

In-depth understanding of audience analysis, news and sports programming, advanced multi-camera, live production, and field news reporting. Implementation of new digital technologies and production techniques for webcasting.

*Prerequisites: COM 170A or Consent of instructor. Offered: Fall, odd # years.*

**COM 375 • Media Criticism and Theory** 3 Credits

Explores theoretical and critical approaches to the study of video, audio, film, and digital culture. Examines issues relating to production and authorship in the media arts, audience reception and effects, political ideology, ethics, aesthetics, cultural diversity, and schools of thought. Extensive critical writing and reading in media criticism and theory.

*Prerequisites: COM 210 and COM 213. Offered: Spring.*

**COM 376 • Public Relations Writing and Strategies** 3 Credits

Explores techniques for conducting research and writing within key public relations contexts. Essential writing skills and strategies needed to perform a variety of projects in the public relations profession, including biographies, press releases, fact sheets, backgrounders, newsletters, brochures, pitch letters, speeches, feature stories, and social media posts.

*Prerequisites: COM 248 and COM 350. Offered: Spring, even # years.*

**COM 386 • Advanced Public Speaking** 4 Credits

Preparation and delivery of speeches at an advanced level. Speeches can include persuasive, entertaining, informative, special occasion, business presentations, and storytelling.

*Prerequisites: Junior standing or Consent of instructor. Offered: Fall.*

**COM 387 • Speaking in Ministry Contexts** 4 Credits

Creation and delivery of the types of messages required in ministry contexts. Students work on biblical interpretation, adapting a biblically-based message to specific audiences and contexts, and learning to communicate in a clear and relevant manner.

*Prerequisites: Junior or senior standing or Consent of instructor. Offered: Spring, odd # years.*

**COM 400 • Family Communication** 4 Credits

Communication patterns that help or hinder relationships within the family system. Functioning in simulated family groups, students develop personal roles. Various approaches to conflict, power, stress, intimacy, and family health. The family system in light of Christian attitudes and life patterns.

*Prerequisites: Junior standing. Offered: Spring.*

**COM 460 • Topics in Organizational Communication** 3 Credits

Advanced studies in organizational communication with the specific topic announced prior to registration. Topics may include public relations, corporate communication, consulting, training and development, or media relations. Explores current issues from both a theoretical and hands-on perspective.

*Prerequisites: COM 350 and Consent of instructor. Repeatable course: May be repeated if a different topic is emphasized. Offered: Occasionally, fall.*

**COM 462 • Topics in Relational Communication** 3 Credits

Advanced studies in relational communication with the specific topic announced prior to registration. Topics may include the dark side of communication, persuasion, divorce, advanced interpersonal theory.

*Offered: Occasionally.*

**COM 463 • Topics in Communication Analysis** 3 Credits

Special and/or advanced studies in rhetorical analysis with the topic announced prior to registration. Possible topics include rhetoric of religion, crisis communication, and presidential rhetoric. Theories applied to contemporary and historical communication artifacts.

*Prerequisites: COM 210. Repeatable course: May be repeated if a different topic is emphasized. Offered: Interim, Occasionally spring.*

**COM 464 • Dating, Mating, & Relating: Lifespan Communication** 3 Credits

Explores the communication development and patterns of children and adolescents, family communication, peer-group communication, intergenerational communication, and later-life communication, as well as theoretical studies of lifespan communication development, communication during lifespan transitions, and lifespan communication research methods.

*Offered: Occasionally.*

**COM 481 • Internship in Communication** 3-4 Credits

Applies and expands communication knowledge and skills in structured, off-campus settings, such as corporations, governmental offices, nonprofit organizations, television and radio stations, and corporate media departments.

*Prerequisites: Junior standing or Consent of department. Repeatable course: May be repeated for credit.*

*Offered: Fall, Spring.*

**COM 494 • Capstone: Organizational Communication** 4 Credits

Engages students in the process of researching, structuring, conducting, and evaluating communication audits or public relations campaigns. Emphasizes synthesis and integration of skills and theories learned in the organizational communications major.

*Prerequisites: COM 350; COM 363; Senior standing. Offered: Spring.*

**COM 497 • Capstone: Relational Studies** 4 Credits

Guided exploration of “understudied relationships” specific to the relational communication discipline. Focus on synthesizing and integrating faith, communication skills, knowledge, theory, research, and competencies learned in the relational communication emphasis.

*Prerequisites: COM 220 or COM 322; COM 363; COM 370. Offered: Spring.*

**COM 498 • Capstone: Rhetoric and Public Influence** 4 Credits

Advanced study in foundational rhetorical theory as well as within a specific rhetorical tradition of the student’s choosing. A significant presentation on a specific theoretical framework and a major research paper are required.

*Prerequisites: COM230L and COM 361. Offered: Spring, odd # years.*

**COS 100 • Introduction to Programming** 3 Credits

An introduction to programming using a current procedural (imperative) programming language. Standard data types and control structures are introduced.

*Offered: Fall, Interim.*

**COS 105 • Object-oriented Design and Programming** 4 Credits

Introduction to fundamental search and sort algorithms, analysis, design methodologies, and object-oriented programming. Strong emphasis on theory. Extensive programming assignments in a current object-oriented computer language.

*Prerequisites: COS 100, COS 205, or equivalent proficiency; MAT 123M, MAT 124M, MAT 125, or equivalent proficiency. Offered: Spring. Special Notes: Not designed as a computer literacy course. Includes 6 lab hours.*

**COS 205 • Scientific Computing** 3 Credits

Introduction to programming in C and C++ with an emphasis on issues relevant to scientific computing such as machine error, performance, and implementation of common numerical algorithms.

*Prerequisites: MAT 124M with C- or higher (can be taken concurrently). Offered: Fall, Spring.*

**COS 212 • Data Structures** 4 Credits

Elementary data structures such as file structures, linked lists, and simple trees. Extensive programming assignments in a current computer language.

*Prerequisites: COS 105 with C- or higher or COS 205 with C- or higher with consent of instructor. Special Notes: Includes 6 lab hours. Offered: Fall, Spring.*

**COS 214 • Computer Architecture** 4 Credits

Assembly and machine language to study computer organization and structure, including addressing techniques, digital logic and representation of numbers and arithmetic. Also includes an introduction to C.

*Prerequisites: COS 212 with C- or higher. Offered: Spring. Special Notes: Students may not receive credit for both COS 214 and COS 235.*

**COS 216 • Algorithms and Advanced Data Structures** 3 Credits

Advanced data structures, algorithms, and algorithm analysis. Extensive programming assignments in a current object-oriented computer language.

*Prerequisites: COS 212 with C- or higher and MAT 241 with C- or higher. Offered: Fall, Spring.*

**COS 235 • Computer Systems** 4 Credits

Assembly and machine language to study computer organization and structure, including addressing techniques, digital logic and representation of numbers and arithmetic, structure of operating systems, memory management, process management, resource allocation, and operating system monitors. Also includes an introduction to C.

*Prerequisites:* COS 212 with C- or higher. *Offered:* Spring. *Special Notes:* Students may not receive credit for both COS 214 and COS 235.

**COS 301 • Operating Systems** 4 Credits

Computer organization, structure of operating systems, memory management, process management, resource allocation, and operating system monitors. Alternative approaches to operating system design.

*Prerequisites:* COS 214 with C- or higher and Knowledge of C or C++. *Offered:* Fall.

**COS 313 • Database Systems** 3 Credits

Relational and object-oriented databases, schemas, and normalization. Database management systems, SQL, concurrent transactions, logging/disaster recovery, and query optimization. Application program interaction with database management systems.

*Prerequisites:* COS 216 with C- or higher. *Offered:* Fall, even # years.

**COS 318 • Web Programming** 3 Credits

An examination of the foundational technologies used for creating web applications. Includes client and server programming, as well as fundamentals of cloud services, including security, storage, and reliability.

*Prerequisites:* COS 216 with C- or higher. *Special Notes:* Some knowledge of HTML and the basics of JavaScript are expected. *Offered:* Fall.

**COS 320 • Computer Graphics Programming** 3 Credits

Introduces the drawing methods, geometrical transforms, and illumination models that are fundamental to computer graphics programming. Modeling of 2D and 3D objects, local and global illumination simulation, shading, color models, procedural modeling, and discrete (fragment) techniques, including texture mapping. A current graphics API is used, including custom shaders.

*Prerequisites:* COS 216 with C- or higher. *Offered:* Fall, odd # years.

**COS 334 • Data Mining and Machine Learning** 3 Credits

An introduction to widely-used techniques for extracting information from large data sets such as medical databases, credit reports, weather history, and the stock market. Includes algorithms for nominal and ordinal data and metrics to measure their performance. Students will implement common algorithms with real data and choose appropriate algorithms for different applications.

*Prerequisites:* COS 216 with C- or higher. *Offered:* Spring, even # years.

**COS 335 • Computer Security** 3 Credits

An introduction to the concepts of security as applied to areas such as programming, databases, networks, systems, and applications. General concepts and specific instances of security-related threats are presented. Security risks are discussed in the context of several computer operating system and architecture components.

*Prerequisites:* COS 235 with C- or higher (COS 386 is a recommended prerequisite). *Offered:* Spring, odd # years.

**COS 337K • Behavioral Robotics** 3 Credits

Control and automation are fundamental aspects of human, animal, and machine behavior. These topics will be considered from philosophical and psychological perspectives and explored through robotics and other hands-on experimental labs, in order to develop both a practical and theoretical understanding of behavior.

*Prerequisites:* Laboratory Science (D) course and Mathematics (M) course. *Offered:* Occasionally interim.



**COS 351 • High-Performance Computing** 3 Credits

Fundamental concepts and techniques for parallel computation in C/C++ (load balancing, communication, synchronization, serial program decomposition) using an industry-standard parallel computing library.

*Prerequisites: COS 205 with C- or higher or COS 214 with C- or higher. Offered: Fall, odd # years, Interim, odd # years.*

**COS 371 • Organization of Programming Languages** 3 Credits

Formal programming language specification using various grammars and the Backus-Naur Form. Data types and structures, control structures, and data flow of several programming languages, including interpreters and compilers. Introduction to parsing and lexical analysis.

*Prerequisites: COS 216 with C- or higher. Offered: Spring, even # years.*

**COS 386 • Data Communications and Computer Networks** 3 Credits

Data communications including interprocess communication, computer networking, and associated software protocols. Topics include network topologies, point-to-point network protocols, local area networks, and interconnection of networks.

*Prerequisites: COS 301 with C- or higher. Offered: Fall, even # years.*

**COS 389 • Artificial Intelligence** 3 Credits

Basic concepts and techniques of artificial intelligence, including representation, notational structures, searches, control structures, and logic programming languages. Samples of current work in several application areas including natural language systems, expert systems, and neural networks.

*Prerequisites: COS 216 with C- or higher. Offered: Spring, odd # years.*

**COS 420 • Software Process** 3 Credits

Balancing the various real-world challenges that a software engineer encounters, including ambiguity, conflicting requirements, task-time estimation, team dynamics, requests from customers, product managers or architects. A team-based software project on a modern computer science topic will be developed during the semester.

*Prerequisites: COS 216 with C- or higher. Special Notes: Carries cross credit in engineering. COS 477 is a recommended prerequisite. Offered: Spring, odd # years.*

**COS 450 • Humans and Computers** 3 Credits

Examines the ways that humans and computers interact. Issues in user experience and human-machine interaction are explored. Christian and professional ethics in the development and application of computing technology are extensively examined.

*Prerequisites: COS 216 with C- or higher. Offered: Interim, even # years. Special Notes: Students may not receive credit for both COS 450 and GES 334K.*

**COS 477 • Software Engineering** 3 Credits

Formal approach to the design and development of software. Multiple process models discussed and compared. Other topics include design patterns, project management and estimation, team management, formal methods, documentation, system and data description, verification and validation, and process improvement.

*Prerequisites: COS 216 with C- or higher. Special Notes: Carries cross credit in engineering. Offered: Spring, even # years.*

**COS 490 • Topics in Computer Science** 3 Credits

A seminar to provide an in-depth survey of a recent trend or field in the rapidly changing discipline of computer science. Students work on a significant project and explore the future implications of the current topic.

*Prerequisites: COS 216 with C- or higher. Offered: Occasionally.*

**DES 105 • Introduction to Digital Media** 3 Credits

Understand the tools and concepts of digital art-making and graphic design with an emphasis on foundational proficiency in industry standard software and hardware. Utilize and combine digital tools to solve visual and technical problems as part of a growing design and studio art practice.

*Offered: Fall, Occasionally interim, Spring.*

**DES 150 • Typography** 3 Credits

Typography—the visual presentation of language—is a foundational component of graphic design. Identify and investigate basic principles and communicative potential through project-based exploration of the following topics: terminology, letterforms, readability, hierarchy, structure, visual syntax, history, and context.

*Offered: Spring.*

**DES 212 • Graphic Design I** 3 Credits

Explore the foundational visual components of design and their communicative and creative potential through visual experiments, isolated studies, and careful observation. Develop original content through a design process that includes idea generation, material experimentation, evaluation, and iteration.

*Prerequisites: DES 105. Offered: Fall, Spring.*

**DES 312 • Graphic Design II** 3 Credits

Combine and extend basic design and typography principles through a range of real-world project scenarios. Engage with clients and manage projects from initial ideation through production stages. Special attention to strategizing, problem-defining and solving, collaboration, client interaction, and production.

*Prerequisites: DES 150 and DES 212. Offered: Fall.*

**DES 322 • Digital Image Making** 3 Credits

Develop advanced methods for brainstorming and creating engaging, communicative, professional images, through exposure to a broad range of techniques, collaboration, critique, and revision. Work is advanced and personal image making processes are established.

*Prerequisites: DES 212. Offered: Interim, odd # years.*

**DES 324 • Interactive Design** 3 Credits

Develop and maintain a variety of interactive projects including websites, digital publishing, interactive documents, and applications. Work collaboratively to strategize solutions for complex projects that identify and respond to users' needs. Understand and adapt to the rapid evolution of technology through research and self-teaching.

*Prerequisites: DES 312 or Consent of instructor. Offered: Fall.*

**DES 412 • Graphic Design III** 3 Credits

Engage complex open-ended design problems in a collaborative environment. Utilize research, prototyping, and user interaction to develop efficient and scalable solutions. Develop personal design approach, values, ethical convictions, and portfolio materials.

*Prerequisites: DES 312 or Consent of instructor. Offered: Spring.*

**DES 481 • Internship in Design** 1-4 Credits

Educational and practical experience in applying understanding and skill in a professional setting. An internship can be arranged in a design studio, advertising firm, non-profit organization, or other appropriate workplace. Supervised by a design faculty member.

*Prerequisites: Five DES courses or Consent of instructor; Major in graphic design. Offered: Fall, Spring.*

**DIG 200A • Introduction to Digital Humanities** 3 Credits

Explores how to tell stories in the humanities with digital insights from graphic design and computer science. 3D-modeling, virtual reality, digital mapping, and data analysis are combined with the study of history, literature, philosophy, the arts, and other humanities disciplines. Students create aesthetically-informed projects accessible to a modern audience.

*Offered: Spring.*

**DIG 310 • Advanced Digital Humanities** 3 Credits

Interdisciplinary seminar deepening conversation about the digital humanities. Students collaborate with others and contribute expertise from their primary major to create sophisticated digital projects. Explores the history and theory of innovation, the personal and social impact of digitization, and the changing nature of work and leisure in a digital age.

*Prerequisites: DIG200. Offered: Fall.*

**DIG 481 • Internship in Digital Humanities 3-4 Credits**

Practical experience enabling students to hone a range of digital skills to complement their abilities in critical thinking, research, and communication. Includes collaboration with peers, staff, professors and/or off-campus partners.

*Prerequisites: DIG200; Junior or senior standing; Major in digital humanities. Offered: Fall, Interim, Spring.*

**ECO 201 • Principles of Economics 4 Credits**

Economic reasoning and concepts. Includes an examination of the role of a price system in allocating resources and income, government policies for dealing with unemployment and inflation, and moral questions raised by the free enterprise system.

*Offered: Fall, Spring.*

**ECO 225L • The Redevelopment of Central City Neighborhoods 3 Credits**

The holistic redevelopment of low-income communities using models and ideas from various disciplines: community development, urban planning, economics, federal and state government, and for-profit businesses.

*Prerequisites: GES 130 and GES 160 (may be taken concurrently) or GES 244 (may be taken concurrently).*

*Offered: Fall.*

**ECO 301 • Intermediate Microeconomics 3 Credits**

Models of consumption, production, and pricing in competitive and noncompetitive markets.

*Prerequisites: ECO 201. Offered: Fall, Spring.*

**ECO 302 • Intermediate Macroeconomics 3 Credits**

Models of real output and monetary behavior. Policies affecting unemployment, inflation, and economic growth.

*Prerequisites: ECO 201. Offered: Fall, Spring.*

**ECO 401 • Advanced Economic Theory 3 Credits**

Mathematical treatment of economic theory, emphasizing calculus.

*Prerequisites: ECO 301; ECO 302; College-level course in Calculus; Senior standing or Consent of instructor; all business core courses except BUS 481. Offered: Spring.*

**EDU 200 • Introduction to Education 3 Credits**

Contemporary issues in education in the light of history and educational thought. Various aspects of growth and development are included.

*Prerequisites: 30 Credits. Corequisites: EDU 201. Offered: Fall, Interim, Spring.*

**EDU 201 • Introduction to Education Field Experience 1 Credit**

A field experience requiring four hours per week observing and serving in an elementary or secondary school classroom.

*Corequisites: EDU 200. Offered: Fall, Interim, Spring. Special Notes: Designated times are set by the Education department.*

**EDU 203 • School Health and Drugs 2 Credits**

Examines the roles of teachers and schools in responding to adolescent health problems, including alcohol/drug problems, with particular attention to health promotion, prevention, and referral.

Approaches adolescent drug/alcohol use from a variety of perspectives—behavioral, pharmacological, social, legal, and clinical. Emphasis is on the characteristics of effective comprehensive school-based drug abuse prevention programs.

*Offered: Fall, Spring.*

**EDU 220 • Introduction to Middle Level Education 3 Credits**

Identifies and defines the concept of exemplary and typical middle and junior high schools: philosophy, organizational structure, curriculum, and instructional characteristics. Students develop an understanding of the physical, emotional, social, cognitive, and moral stages of adolescent development and begin to develop the ability to relate middle-level program possibilities to adolescent developmental needs.

*Prerequisites: EDU 200; EDU 201; Admission to the Education program. Offered: Fall, Spring.*

**EDU 236UZ • Exploring British Education and Culture 3 Credits**

Designed for students to immerse themselves in British culture and explore the educational system, with an emphasis on the diverse populations of Pakistani and Indian students and schools. Provides students with three learning experiences: 1) observation and participation in British elementary and secondary schools; 2) homestay with a British family; and 3) cultural exploration in London and surrounding areas.

*Prerequisites: EDU 200; EDU 201; GES 130 or GES 244; Admission to the Education program. Offered: Occasionally interim.*

**EDU 240 • Educational Psychology 3 Credits**

Psychological foundations of education. Various aspects of growth and development, the nature and conditions of learning, implications for teaching, and evaluation.

*Prerequisites: EDU 200; EDU 201; Admission to the Education program. Offered: Fall, Spring. Special Notes: Intended for 5-8, 5-12, 9-12, and K-12 licensure students only.*

**EDU 241 • Educational Psychology Field Experience 1 Credit**

A field experience that requires four hours per week in an elementary or secondary school for observation and tutorial experience in a special education setting.

*Prerequisites: EDU 200; EDU 201; Admission to the Education program. Corequisites: Must be taken concurrently with EDU 240. Offered: Fall, Spring. Special Notes: Designated times are set by the Education department.*

**EDU 271 • Education Psychology and Pedagogy 2 Credits**

Foundational knowledge about the theories of learning, cognitive development, instructional planning and assessment practices, and professional reflection.

*Prerequisites: EDU 200; EDU 201; Admission to the Education program. Corequisites: Must be taken concurrently with EDU 272; EDU 273; EDU 274; EDU 275. Offered: Fall, Spring.*

**EDU 272 • Language and Literacy Development for Young Learners (K-3) 5 Credits**

Foundational knowledge about language development, literacy development, instructional methods, assessment practices, the creation of a literate and motivating environment, and the encouragement of family engagement in literacy.

*Prerequisites: EDU 200; EDU 201; Admission to the Education program. Corequisites: Must be taken concurrently with EDU 271; EDU 273; EDU 274; EDU 275. Offered: Fall, Spring.*

**EDU 273 • Primary Grade Practicum 1 Credit**

Application of effective practices done in a primary classroom, working with individual students and small reading groups.

*Prerequisites: EDU 200; EDU 201; Admission to the Education program. Corequisites: Must be taken concurrently with EDU 271; EDU 272; EDU 274; EDU 275. Offered: Fall, Spring.*

**EDU 274 • Education Technology 1 Credit**

Methods of integrating technology into the primary grades classroom are considered. Focus on approaches with technologies that are research-based, enhance student learning, and are linked to effective instructional strategies. Professional growth/development and developing digital citizenship/responsibility are considered.

*Prerequisites: EDU 200; EDU 201; Admission to the Education program. Corequisites: Must be taken concurrently with EDU 271; EDU 272; EDU 273; EDU 275. Offered: Fall, Spring.*

**EDU 275 • Kindergarten Education 1 Credit**

Characteristics of kindergarten children and the curriculum and teaching strategies appropriate for their developmental level.

*Prerequisites: EDU 200; EDU 201; Admission to the Education program. Corequisites: Must be taken concurrently with EDU 271; EDU 272; EDU 273; EDU 274. Offered: Fall, Spring.*

**EDU 292 • Foundations of Early Childhood Education 3 Credits**

History, philosophy, goals, content of early childhood education programs, and updated research in child development. Analysis of teaching strategies appropriate for the development of children ages three to five years. Career opportunities in early childhood education.

*Offered: Fall.*

**EDU 293 • Foundations of Early Childhood Field Experience 1 Credit**

Supervised observation and participation at a partnering community early childhood education site.  
*Corequisites: Must be taken concurrently with EDU 292. Offered: Fall.*

**EDU 306 • Curriculum in Early Childhood Education 3 Credits**

Developmental appropriateness of current curriculum models, equipment, and materials in an early childhood education program.

*Prerequisites: EDU 200; EDU 201; EDU 292; EDU 293. Offered: Spring.*

**EDU 307 • Curriculum in Early Childhood Education Field Experience 1 Credit**

Field experience at an approved community partner sites utilizing strategies learned in EDU 306.

*Prerequisites: EDU 200; EDU 201; EDU 292; EDU 293. Corequisites: Must be taken concurrently with EDU 306. Offered: Spring.*

**EDU 317GZ • Educational Equity 4 Credits**

Root causes and historical origins of the current disparity of opportunities in U.S. educational systems. Prepares future educators to be culturally competent and responsive critical thinkers who understand the barriers that perpetuate inequities. Addresses these challenges from a biblical and leadership perspective.

*Prerequisites: [GES 130; GES 160; Contemporary Western Life and Thought (L) course; World Cultures (U) course] or [GES 244; World Cultures (U) course]. Offered: Fall, Interim, Spring. Special Notes: Includes experiential learning in schools and community events.*

**EDU 320 • Pedagogy and the Young Adolescent Learner 1 Credit**

The philosophy and pedagogy of teaching in a middle school is different than teaching in a junior high school. Course activities help students define, describe, and develop the following components of contemporary middle level schools: appropriate curriculum, interdisciplinary structure, and interdisciplinary teaching.

*Prerequisites: EDU 220 (may be taken concurrently) and EDU 240/EDU 241. Corequisites: Must be taken concurrently with EDU 321. Offered: Fall, Spring.*

**EDU 321 • Integrated Literacy in the Content Areas 1 Credit**

Understanding of literacy development strategies and the role of reading in teaching content material related to specific subject areas. Review of content area texts, assessment and practice in adapting content materials to student needs.

*Prerequisites: EDU 220 (may be taken concurrently) and EDU 240/EDU 241. Corequisites: Must be taken concurrently with EDU 320. Offered: Fall, Spring.*

**EDU 331 • Teaching and Learning 3 Credits**

Provides a foundational knowledge of learning psychology and teaching methodology. Examines unique considerations for youth and adult learners, metacognition, formal/informal learning, multi-modal learning, learning in a variety of fields/contexts, and iterative program assessment.

*Corequisites: EDU 332. Offered: Fall, even # years.*

**EDU 332 • Teaching and Learning Field Experience 1 Credit**

Teaching and learning occurs in every field of practice to pass along skill and expertise. Students work with the instructor to find shadowing field experiences where teaching and learning occur in a field of interest and in conjunction with EDU 331.

*Corequisites: EDU 331. Offered: Fall, even # years.*

**EDU 340 • Parent Child and Family Relationships 3 Credits**

The family as a social/cultural unit with emphasis on the parents' interaction with the developing child. Parent-child relations, parenting skills, family systems, and family structure and function.

*Offered: Spring.*

**EDU 342 • Observation, Assessment, Adaptation, and Referral in Early Childhood** 4 Credits

Strategies used in early childhood settings to observe and assess young children's development and to design goals and experiences based upon those assessments. Issues of early identification, referral to special services, building effective parent/professional partnerships, and programming in inclusive early childhood classrooms are discussed.

*Prerequisites:* EDU 200; EDU 201; EDU 292; EDU 293; *Admission to the Education program.* Offered: Fall.

**EDU 344 • Health, Nutrition, and Safety with Young Children** 2 Credits

Issues in health, nutrition, and safety as related to early childhood settings, birth through age six.

*Prerequisites:* EDU 200; EDU 201; EDU 292; EDU 293. Offered: Spring.

**EDU 350 • Infant and Toddler Care** 3 Credits

Strategies used in early childhood settings to assess infant/toddler development and needs, develop goals, and design appropriate learning experiences and environments. Building positive relationships with infants/toddlers and their parents in group settings.

*Prerequisites:* EDU 200; EDU 201; EDU 292; EDU 293; EDU 306; EDU 307; EDU 340; *Admission to the Education program.* Offered: Fall.

**EDU 351 • Infant and Toddler Development and Learning Field Experience** 1 Credit

Field experience at an approved partner infant and toddler setting to practice strategies learned in EDU 350.

*Prerequisites:* EDU 200; EDU 201; EDU 292; EDU 293; EDU 306; EDU 307; EDU 340; *Admission to the Education program.* *Corequisites:* Must be taken concurrently with EDU 350. Offered: Fall.

**EDU 363 • Health Curriculum and Methods** 1 Credit

Principles, curriculum, and methods of teaching health in grades K-6. Role of the teacher and school in responding to the special health needs of elementary-age children.

*Prerequisites:* EDU 200; EDU 201; *Admission to the Education program.* Offered: Fall, Spring.

**EDU 365 • Physical Education Curriculum and Methods** 1 Credit

Principles, curriculum, and methods of teaching physical education in grades K-6.

*Prerequisites:* EDU 200; EDU 201; *Admission to the Education program.* Offered: Fall, Spring.

**EDU 366A • Visual Arts Curriculum and Methods** 1 Credit

Methods, materials, and resources for teaching visual arts in grades K-6.

*Prerequisites:* EDU 200; EDU 201; *Admission to the Education program.* Offered: Fall, Spring.

**EDU 368A • Music Curriculum and Methods** 1 Credit

Methods, materials, and resources for teaching music in grades K-6.

*Prerequisites:* EDU 200; EDU 201; *Admission to the Education program.* Offered: Fall, Spring.

**EDU 370 • Math Curriculum and Methods** 3 Credits

Methods, materials, and resources for teaching mathematics in grades K-6. Emphasis placed on problem solving, inquiry, and conceptual understanding in a standards-based classroom.

*Prerequisites:* EDU 200; EDU 201; EDU 271; EDU 272; EDU 273; EDU 274; EDU 275; EDU 317GZ; MAT 202; NAS 101D; NAS 102D; NAS 103D; NAS 104D; *Admission to the Education program.* *Corequisites:* Must be taken concurrently with EDU 371; EDU 372; EDU 373; EDU 374; EDU 375; EDU 376. Offered: Fall, Spring.

**EDU 371 • Science Curriculum and Methods** 3 Credits

Methods, materials, and resources for teaching science in grades K-6. Emphasis placed on inquiry and discovery learning, planning, and teaching in a standards-based classroom.

*Prerequisites:* EDU 200; EDU 201; EDU 271; EDU 272; EDU 273; EDU 274; EDU 275; EDU 317GZ; MAT 202; NAS 101D; NAS 102D; NAS 103D; NAS 104D; *Admission to the Education program.* *Corequisites:* Must be taken concurrently with EDU 370; EDU 372; EDU 373; EDU 374; EDU 375; EDU 376. Offered: Fall, Spring.

**EDU 372 • Educational Psychology 3 Credits**

Psychological foundations of education continued from EDU 271 with an emphasis on grades 4-6. Various aspects of growth and development, the nature and conditions of learning, implications for teaching, awareness of student variability, and strategies for meeting the needs of students with disabilities. Teacher/student relationships and strategies for maintaining a classroom environment where learning can occur.

*Prerequisites: EDU 200; EDU 201; EDU 271; EDU 272; EDU 273; EDU 274; EDU 275; EDU 317GZ; MAT 202; NAS 101D; NAS 102D; NAS 103D; NAS 104D; Admission to the Education program. Corequisites: Must be taken concurrently with EDU 370; EDU 371; EDU 373; EDU 374; EDU 375; EDU 376. Offered: Fall, Spring.*

**EDU 373 • Reading/Language Arts Curriculum and Methods 3 Credits**

Reading methods and processes with a strong emphasis on comprehension and vocabulary development. Language arts skills: writing process, grammar, spelling, drama, listening and speaking skills, viewing skills for students in grades 4-6. A variety of creative and critical response modes to integrate literature across the curriculum.

*Prerequisites: EDU 200; EDU 201; EDU 271; EDU 272; EDU 273; EDU 274; EDU 275; EDU 317GZ; MAT 202; NAS 101D; NAS 102D; NAS 103D; NAS 104D; Admission to the Education program. Corequisites: Must be taken concurrently with EDU 370; EDU 371; EDU 372; EDU 374; EDU 375; EDU 376. Offered: Fall, Spring.*

**EDU 374 • Social Studies Curriculum and Methods: Planning 3 Credits**

Methods, materials, and resources for teaching social studies in grades K-6. Emphasis placed on the use of process skills of the social scientist. Long- and short-term planning including integration of curriculum across content areas, embedding Minnesota Graduation Standards.

*Prerequisites: EDU 200; EDU 201; EDU 271; EDU 272; EDU 273; EDU 274; EDU 275; EDU 317GZ; MAT 202; NAS 101D; NAS 102D; NAS 103D; NAS 104D; Admission to the Education program. Corequisites: Must be taken concurrently with EDU 370; EDU 371; EDU 372; EDU 373; EDU 375; EDU 376. Offered: Fall, Spring.*

**EDU 375 • Integrating Technology in the Content Areas 2 Credits**

Methods of integrating technology in various grade levels and content areas are examined. Students design, implement, and access strategies for assessment and learning. Emphasis on approaches to enhance student learning, increase motivation, and link to effective instructional strategies.

Professional growth/development and developing digital citizenship/responsibility are considered.  
*Prerequisites: EDU 200; EDU 201; EDU 271; EDU 272; EDU 273; EDU 274; EDU 275; EDU 317GZ; MAT 202; NAS 101D; NAS 102D; NAS 103D; NAS 104D; Admission to the Education program. Corequisites: Must be taken concurrently with EDU 370; EDU 371; EDU 372; EDU 373; EDU 374; EDU 376. Offered: Fall, Spring.*

**EDU 376 • Intermediate Grade Practicum 1 Credit**

Application of effective practices done in a 3rd-6th grade classroom, working with large groups as well as small groups, adapting lessons for students with special needs. Special focus on integrated planning.

*Prerequisites: EDU 200; EDU 201; EDU 271; EDU 272; EDU 273; EDU 274; EDU 275; EDU 317GZ; MAT 202; NAS 101D; NAS 102D; NAS 103D; NAS 104D; Admission to the Education program. Corequisites: Must be taken concurrently with EDU 370; EDU 371; EDU 372; EDU 373; EDU 374; EDU 375. Offered: Fall, Spring. Special Notes: A residency option is available by application. Residents stay in the same cooperating classroom for Block 2 and student teaching.*

**EDU 390 • General Field Experience 0 Credit**

Students will work in local schools iwth licensed cooperating teachers.

*Prerequisites: Approval of the Director of Education Clinical Practice. Offered: Fall, Spring.*

**EDU 400 • Methods in Teaching K-12 English to Speakers of Other Languages 3 Credits**

Theories of language learning, language acquisition, and classroom methodologies at the elementary and secondary levels. Exploration of instructional resources, uses of technology, evaluative procedures, and classroom management. Development of a philosophy of English as a Second Language education and practice in unit planning and teaching.

*Prerequisites: LIN 210Z; LIN 300; Admission to the Education program. Offered: Fall.*

**EDU 401 • Middle Level Education Practicum in TESL 1 Credit**

Classroom-based practicum in an ESL class of young adolescent learners. Emphasizes evaluation and application of concepts and strategies introduced in EDU 400.

*Corequisites: Must be taken concurrently with EDU 400. Offered: Fall.*

**EDU 406 • Methods in Teaching 5-8 English 3 Credits**

An examination of how middle level philosophy translates into practice in English classes in grades 5-8. It is designed to accompany a 1 credit practicum experience in a middle level school.

*Prerequisites: EDU 240; EDU 241 or EDU 271; EDU 272; EDU 273; Admission to the Education program.*

*Corequisites: Must be taken concurrently with EDU 407. Offered: Spring.*

**EDU 407 • Middle Level Education Practicum in English 1 Credit**

Classroom-based practicum in an English class of young adolescent learners. Emphasizes evaluation and application of concepts and strategies introduced in EDU 408.

*Prerequisites: EDU 240/EDU 241. Corequisites: Must be taken concurrently with EDU 406 or EDU 408.*

*Offered: Spring.*

**EDU 408 • Methods in Teaching 5-12 English 3 Credits**

Methods and curriculum employed in teaching English in middle and high schools. Examines current technology in English education as well as interactive learning and teaching. Emphasizes vocabulary and academic language. Lesson and unit planning using best practices and developmentally appropriate principles.

*Prerequisites: EDU 240; EDU 241; Admission to the Education program. Corequisites: Must be taken*

*concurrently with EDU 407. Offered: Spring. Special Notes: EDU 320 is a strongly recommended corequisite.*

**EDU 410 • Methods in Teaching 5-8 Mathematics 3 Credits**

Teaching methodologies, materials, assessment, historical and current trends and issues in curricular, development of a philosophy of mathematics education, and other topics related to teaching and learning mathematics in grades 5-8. Practice in planning lessons and units, implementing technology, and teaching.

*Prerequisites: EDU 240, EDU 271; Admission to Education program. Corequisites: Must be taken concurrently with EDU 411. Offered: Fall.*

**EDU 411 • Mathematics Education Practicum in grades 5-8 or 5-12 1 Credit**

Students observe and participate in a high school and/or middle school mathematics classroom (minimum 40 hours on site). Develop deeper understanding of preadolescent and adolescent learners as well as curriculum, instruction, and assessment in the context of grades 5-12 school communities.

*Prerequisites: EDU 240, EDU 271; Admission to the Education program. Corequisites: Must be taken concurrently with EDU 410, EDU 412. Offered: Fall.*

**EDU 412 • Methods in Teaching 5-12 Mathematics 3 Credits**

Teaching methodologies, materials, assessment, historical and current trends and issues in curriculum, development of a philosophy of mathematics education, and other topics related to teaching and learning mathematics in grades 5-8 and 9-12. Practice in planning lessons and units, implementing technology, and teaching.

*Prerequisites: EDU 240; EDU 241; Admission to the Education program; Senior standing or Consent of instructor. Corequisites: Must be taken concurrently with EDU 411. Offered: Fall.*

**EDU 413 • Methods in Teaching K-12 Art 3 Credits**

Materials, methods, and curriculum employed in teaching art at both the elementary and secondary levels. Historical survey of philosophy of art education and present trends. Studio time for exploration and application of media suitable for both elementary and secondary levels.

*Prerequisites: EDU 240; EDU 241; Admission to the Education program. Corequisites: Registration in EDU 414 is required. Offered: Fall.*

**EDU 414 • Middle Level Education Practicum in Art 1 Credit**

Classroom-based practicum in an art class of young adolescent learners. Emphasizes evaluation and application of concepts and strategies introduced in EDU 413.

*Prerequisites: EDU 240; EDU 241. Corequisites: Must be taken concurrently with EDU 413. Offered: Fall.*



**EDU 418 • Methods in Teaching 9-12 Social Studies 2 Credits**

Development of ability to take concepts from several component disciplines of social studies and communicate them effectively to, or direct their acquisition by, students in grades 9-12. Curriculum trends, materials, classroom methodologies, and teacher competencies are studied and applied.

*Prerequisites: EDU 240; EDU 241; EDU 220; Admission to the Education program. Corequisites: Must be taken concurrently with EDU 419. Offered: Spring.*

**EDU 419 • 5-8 Social Studies Methods and Practicum 2 Credits**

Classroom-based practicum in a social studies class of young adolescent learners. Emphasizes evaluation and application of concepts and strategies introduced in EDU 418.

*Prerequisites: EDU 240; EDU 241; EDU 220; Admission to the Education program. Corequisites: Must be taken concurrently with EDU 418. Offered: Spring.*

**EDU 420 • Methods in Teaching 5-12 Science 3 Credits**

Current methods and approaches used in the teaching of science in grades 5-12. Examination of ways to develop and present curriculum with emphasis on content, scientific investigation, inquiry, assessment, and safe laboratory practices.

*Prerequisites: EDU 240; EDU 241; Admission to the Education program. Offered: Fall. Special Notes: Requirements for this course are fulfilled through EDUC 681 (Methods of Teaching 5-12 Science), which is taught in conjunction with the Bethel University Graduate School.*

**EDU 426 • Methods in Teaching K-12 World Languages and Cultures 3 Credits**

Theories of language acquisition, language learning, and classroom methodologies at the elementary and secondary levels. Exploration of instructional resources, uses of technology, evaluative procedures, and classroom management. Development of a philosophy of communicative language teaching and practice in unit planning and teaching.

*Prerequisites: EDU 240; EDU 241; Admission to the Education program; Demonstration of Intermediate-High oral proficiency after study abroad via the OPIC or Consent of instructor, or A major or minor offered through the Languages and Cultures department. Offered: Fall.*

**EDU 427 • Middle Level Education Practicum in World Languages and Cultures 1 Credit**

Classroom-based practicum in a Spanish class of young adolescent learners. Emphasizes evaluation and application of concepts and strategies introduced in EDU 426.

*Prerequisites: EDU 240/241. Corequisites: Must be taken concurrently with EDU 426. Offered: Fall.*

**EDU 428 • Methods in Teaching 5-8 Science 2 Credits**

Current methods and approaches used in the teaching of science in grades 5-8. An examination of ways to develop and present curriculum with emphasis on assessment, instructional strategies, scientific investigations, safety training, and current issues in science education.

*Prerequisites: EDU 271; EDU 272; EDU 273; EDU 274; EDU 275; Admission to the Education program. Corequisites: Must be taken concurrently with EDU 429. Offered: Fall.*

**EDU 429 • Science Education Practicum in Grades 5-8 or 5-12 1 Credit**

Students observe and participate in a high school and/or middle school science classroom (minimum 40 hours on site). Develop deeper understanding of preadolescent and adolescent learners as well as curriculum, instruction, and assessment in the context of grades 5-12 school communities.

*Prerequisites: EDU 240/241 and Admission to the Education program. Corequisites: Must be taken concurrently with EDU 420. Offered: Fall.*

**EDU 432 • Methods in Teaching Elementary Music 3 Credits**

Methods and materials for teaching music in the elementary school. The skills of singing, playing, moving, improvising, reading, and listening are explored as a means of helping children gain an intuitive and theoretical understanding of musical principles.

*Prerequisites: EDU 240; EDU 241; Major or minor in music; Admission to the Education program. Offered: Fall.*

**EDU 433 • Methods in Teaching Secondary Music 3 Credits**

Methods and materials for teaching music in the middle school, junior high, and high school vocal and instrumental programs.

*Prerequisites: EDU 432; Major or minor in music; Admission to the Education program. Offered: Spring.*

**EDU 434 • Middle Level Education Practicum in Music** 1 Credit

Classroom-based practicum in a music class of young adolescent learners. Emphasizes evaluation and application of concepts and strategies introduced in EDU 433.

*Prerequisites: EDU 432 and Major or minor in music. Corequisites: EDU 433. Offered: Spring.*

**EDU 489 • Student Teaching in Preprimary** 3 Credits

Observation and student teaching in a pre-k setting in which a student will be licensed to teach. Includes participation in a seminar.

*Prerequisites: EDU 292/293, EDU 306/307; EDU 340; EDU 342; EDU 344; Admission to student teaching. Offered: Fall, Interim, Spring, Summer (depending on faculty availability).*

**EDU 490 • Student Teaching Block** 1-14 Credits

Students teach in a school setting corresponding with their licensure area(s) for the semester.

Students work with a cooperating teacher and grow into teaching on their own. Attendance at regularly scheduled seminars is required.

*Prerequisites: Admission to student teaching and 2.50 GPA. Special Notes: Graded on an S/U basis. Offered: Fall, Spring. Special Notes: Students earning a license to teach in two programs must register for EDU 490 in the initial license area and in the additional license or endorsement program. Both student teaching placements can occur within the same semester. Some situations may require the addition of student teaching during Interim.*

**EDU 491 • Student Teaching in Middle Level** 3 Credits

Observation and student teaching in fields in which a student will be licensed to teach. This involves student teaching in a Middle Level endorsement area.

*Prerequisites: Admission to student teaching. Special Notes: Graded on an S/U basis. Offered: Fall, Spring.*

**ENL 100 • Great Writers: An Introduction to Literature** 4 Credits

Why do great works of literature endure, and how do they illuminate the human experience? Works by classic and contemporary authors are studied for their artistry; their portrayal of great ideas, hopes, joys, and sorrows; and their insight into beauty, truth, and self-understanding.

*Offered: Fall, Spring.*

**ENL 102 • Survey of British Literature I** 4 Credits

Major literary works from Anglo-Saxon times through the 18th century, with some attention given to the development of literary movements and genres. Authors include the Beowulf poet, Chaucer, Shakespeare, Donne, Milton, and Pope.

*Offered: Fall.*

**ENL 104 • American Literary Traditions** 4 Credits

Major American authors studied in their historical and cultural contexts, from the colonial era to the present.

*Offered: Fall, Spring.*

**ENL 111 • American Life Stories** 3 Credits

An introduction to American autobiography, exploring how individual Americans write their life stories. Consideration of the translation of some personal narratives into film. Selections reflect the rich cultural diversity of American life.

*Offered: Occasionally.*

**ENL 200 • Juvenile Literature** 3 Credits

An exploration of a wide range of books written for children and teens in grades 5-9, as well as resources for effectively finding, reading, and interacting with them. Major topics of discussion include censorship, diversity, representation, and literary merit.

*Offered: Spring.*

**ENL 202 • Survey of British Literature II** 4 Credits

Major writers and works from the Romantic, Victorian, and early 20th century periods. Historical and intellectual background. Writers include Blake, Wordsworth, Keats, Shelley, Arnold, Hopkins, Joyce, Conrad, and Yeats.

*Offered: Spring.*

**ENL 215U • World Literature 3 Credits**

Focused study of literature from a non-western region of the world, examining social and historical contexts.

*Prerequisites: GES 130 (may be taken concurrently) or GES 244 (may be taken concurrently). Offered: Fall, Occasionally interim, Spring.*

**ENL 235L • Film and the Modern Sensibility 3 Credits**

An exploration of film as an art form and as an expression of the meanings of "modernism." Why film is a uniquely modern art form is addressed, as well as those themes that identify the "modern sensibility."

*Prerequisites: GES 130 and GES 160 (may be taken concurrently) or GES 244 (may be taken concurrently). Offered: Occasionally interim. Special Notes: Carries cross-credit in philosophy.*

**ENL 241L • Modern Mythmakers 3 Credits**

Consideration of how writers and filmmakers appropriate mythic structures and archetypes to create meaningful narratives of human experience. Modern mythmakers may include: J.R.R. Tolkien, George Lucas, Toni Morrison, C.S. Lewis, and others.

*Prerequisites: GES 130 and GES 160 (may be taken concurrently) or GES 244 (may be taken concurrently). Offered: Occasionally.*

**ENL 243L • Story in Modern America 3 Credits**

Explores forms, purposes, and functions of American story and how they have evolved. Students examine their roles and responsibilities as truth-seekers by reading, viewing, and creating texts - from short story to graphic novel, from film to podcast - that challenge and confirm assumptions about story in modern American culture.

*Prerequisites: GES 130 and GES 160 or GES 244. Offered: Spring.*

**ENL 301 • Chaucer and Writers of Arthurian Quests 4 Credits**

Major emphasis on The Canterbury Tales and Arthurian literature. Medieval pilgrimage and the Grail quest, as treated by English and continental authors.

*Offered: Spring 2020.*

**ENL 303 • Shakespeare: The Art of the Dramatist 4 Credits**

Major plays in Shakespeare's distinct periods and genres: history, comedy, tragedy, and romance.

Both literary and theatrical aspects are examined, with attention to historical context. Emphasis on performance.

*Offered: Spring.*

**ENL 304 • Milton and the Seventeenth Century 4 Credits**

Major emphasis on Milton's Paradise Lost and his other poems and prose, with readings in metaphysical and religious poetry of such writers as Donne and Herbert.

*Offered: Spring 2022.*

**ENL 309 • Enlightenment and Romantic British Literature 4 Credits**

British literature from Dryden, Pope, Swift, and Johnson, to Wordsworth, Coleridge, Keats, Shelley, and Byron. Emphasis on social and literary satire, prose forms, Romantic nature poetry, the changing role of the imagination, and criticism.

*Offered: Spring 2021.*

**ENL 311 • American Civil War Literature 4 Credits**

Study of the American Civil War and its appeal to historical and literary imaginations. Selected works are studied in historical context, including the causes, the course of the war, and the consequences of the war for the nation.

*Offered: Occasionally.*

**ENL 315G • Truth-Telling: The Stories of Resistance** 3 Credits

Literature, film, and stories that reveal truths regarding systems of oppression. Explores the struggle for justice through the narratives and the imaginative response of the oppressed. Literary historical foci include the Holocaust, the experience of Native Americans, African Americans, women, and the oppressed in Minnesota.

*Prerequisites:* GES 130; GES 160; *Contemporary Western Life and Thought (L) course; World Cultures (U) course*] or [GES 244; *World Cultures (U) course*]. *Offered:* Fall or Spring.

**ENL 316GZ • Literatures of Faith: Christianity and Islam** 3 Credits

Compares important literary works from the Christian and Islamic worlds from the Middle Ages to the present. Emphasizes literary and historical study, as well as dialogue and inquiry, as vital tools for understanding present-day Christian and Muslim cultures. A significant cross-cultural experience, involving interaction with Muslim communities, is required.

*Prerequisites:* [GES 130; GES 160; *Contemporary Western Life and Thought (L) course; World Cultures (U) course*] or [GES 244; *World Cultures (U) course*]. *Offered:* Occasionally.

**ENL 317 • Stories of Refugees and Migrants in America** 4 Credits

Narrative journalists and writers of fiction humanize the experience of displacement. Around the world, millions driven from their homes by conflict, deprivation or disasters, have sought new homes in the United States. Their stories enlarge our understanding of the human search for identity, opportunity, security, and community.

*Offered:* Occasionally.

**ENL 321 • Drama in Great Britain** 4 Credits

Drama in performance, using the plays seen abroad during the England Term. Special attention paid to Shakespeare.

*Offered:* England term, fall, even # years.

**ENL 341K • Environmental Writing** 3 Credits

As the environmental crisis has deepened, American nature writing has evolved into a richly creative endeavor that explores the complex interactions of nature, technology, and society. Students study environmental writing as a means for valuing biodiversity and for envisioning changes in global policies, applications of technology, and environmental ethics.

*Prerequisites:* *Laboratory Science (D) course and Mathematics (M) course. Offered:* Occasionally. *Special Notes:* Carries cross-credit in environmental studies.

**ENL 350 • 20th Century Literature** 4 Credits

Major writers, movements, and themes in early 20th century literature in their historical and intellectual context. Emphasis on the rise of modernism in England, France, and America. Major figures include Eliot, Pound, Joyce, Hemingway, Lawrence, Woolf, Stevens, Williams, and Faulkner.

*Offered:* Fall, odd # years.

**ENL 352 • Contemporary Literature** 4 Credits

Major writers, movements, and themes in literature published since World War II. Emphasis on responses to modernism, current trends, and the emergence of minority and women writers, especially in America.

*Offered:* Fall, even # years.

**ENL 354 • Literature on Location: Major British Authors** 4 Credits

Selected British authors in conjunction with the places that inspired or were the focus of their work. Authors may include Chaucer (Canterbury), Joyce (Dublin), Wordsworth and Coleridge (Lake District), Hardy (Dorset), and Woolf (Bloomsbury).

*Offered:* England term, fall, even # years.

**ENL 355 • Modernism in London, Dublin, and Paris** 4 Credits

On-location study of the rise of modernism in literature and art in London, Dublin, and Paris in the early part of the 20th century. Focus on the intellectual and historical context, and on such figures as Eliot, Woolf, Pound, Joyce, Stein, and Hemingway.

*Offered:* England Term, Occasionally.

**ENL 365 • Topics in Literary Studies 4 Credits**

Close study in a specific topic or genre of literature. Emphasis on applying the skills of literature study to a closely-focused topic.

*Offered: Spring, even # years.*

**ENL 367 • Ways of Reading 4 Credits**

Theory offers us a deeper way to engage with texts. Students interact with texts through a succession of perspectives and apply concepts and techniques for engaging with literature and culture in more perceptive and satisfying ways.

*Offered: Fall, even # years.*

**ENL 498 • Research Seminar in English 1 Credit**

Research methodology in literature or journalism. Development of a proposal for a scholarly project to be completed and formally presented in ENL 499 or ENW 499.

*Prerequisites: Major or minor in english literature or journalism; Junior standing. Special Notes: May not be taken concurrently with ENL 499 or ENW 499. Offered: Fall, even # years, Interim, even # years.*

**ENL 499 • Senior Seminar in Literature 3 Credits**

Analysis of a variety of topics relevant to the practice of literary studies with special consideration given to the role of the Christian reader and writer. Culminates in the completion of a major research project.

*Prerequisites: ENL 498; Senior standing; Major or minor in English. Offered: Spring.*

**ENR 160 • Introduction to Engineering 3 Credits**

Introduction to engineering fields, practicing engineers, engineering work, and the tools that engineers use. Topics such as process and methodology, statistical analysis, and the use of computer software (e.g., CAD) in the development of specifications, design, and prototyping. Emphasis on the ethics and responsibilities of the engineering process.

*Offered: Interim.*

**ENR 260 • Careers in Engineering and Physics Seminar 1 Credit**

Developing careers in high-technology fields such as engineering and physics. Explores the wide variety of specific careers possible through video, lecture, tours, and guest speakers. Develops practical professional skills such as writing resumes and cover letters, accumulating connections and experience, and techniques for interviewing.

*Prerequisites: PHY 296/297. Offered: Fall. Special Notes: Carries cross-credit in physics.*

**ENR 265 • Computer Aided Design and Engineering 3 Credits**

An introduction to computer aided design tools and techniques. Emphasizes the generation of engineering graphics necessary for the engineering design process, such as two-dimensional drawing and three-dimensional modeling. Advanced topics may include simulation modeling, parametric modeling, and manufacturing considerations.

*Prerequisites: ENR 160. Offered: Interim.*

**ENR 304 • Engineering Materials 3 Credits**

An introduction to the structure-property relationships of engineering materials; atomic structure and bonding, including crystal structures; imperfections in solids; strength of materials; strengthening mechanisms; phase transformations; heat treatment and control of microstructures; bulk properties of materials.

*Prerequisites: ENR 160; MAT 125; CHE 208/208D; PHY 292/292D. Corequisites: Concurrent enrollment in ENR 305 is required. Offered: Spring, odd # years.*

**ENR 305 • Engineering Materials Lab 1 Credit**

Laboratory experience accompanying ENR 304 .

*Corequisites: Concurrent enrollment in ENR 304 is required. Offered: Spring, odd # years.*

**ENR 306 • Digital Logic and Design 3 Credits**

Topics may include Boolean algebra, design and optimization of combinational and sequential logic, the use of programmable logic devices such as FPGA, VHDL or Verilog modeling, and an introduction to processors and memory. Extensive lab experience in the simulation, design, construction and testing of digital circuits.

*Prerequisites: PHY 302/303 and MAT 125. Corequisites: Concurrent enrollment in ENR 307 is required.*

*Offered: Spring, even # years.*

**ENR 307 • Digital Logic and Design Lab 1 Credit**

Lab experience accompanying ENR 306 .

*Corequisites: Concurrent enrollment in ENR 306 is required. Offered: Spring, even # years.*

**ENR 308 • Statics and Mechanics of Materials 4 Credits**

Force and moment vectors, equilibrium of rigid bodies in two and three dimensions; trusses, friction, centroids, and moments of inertia. Linear elasticity; introduction to stress and strain analysis applied to beams, vessels, pipes, and combined loading; stress and strain; axial, flexural, and torsional deflections for linear elastic materials.

*Prerequisites: MAT 223 (may be taken concurrently) and PHY 292/292D. Offered: Spring, odd # years.*

**ENR 316 • Analog Circuitry and Design 3 Credits**

Feedback principles and electronic circuit theory and device theory applied to multistage transistor amplifiers. Detailed study of operational amplifiers. Power supply design. Nonlinear circuits. Introduction to filter theory. Introduction to noise analysis and low noise design. Circuit design and construction experience emphasized in projects and the laboratory.

*Prerequisites: PHY 302; PHY 303; [MAT 222 or MAT 224 (may be taken concurrently)] Corequisites:*

*Concurrent enrollment in ENR 317 is required. Offered: Fall, odd # years.*

**ENR 317 • Analog Circuitry & Design Lab 1 Credit**

Lab experience accompanying ENR 316.

*Corequisites: Concurrent enrollment in ENR 316 is required. Offered: Fall, odd # years.*

**ENR 318 • Engineering Thermal Science 3 Credits**

Fundamental laws of thermodynamics. Energy transfer modes. The properties, equations of state, processes, and cycles for reversible/irreversible thermodynamic systems. Equations for conservation of mass and energy, plus entropy balances. Application of thermodynamic principles to modern engineering systems.

*Prerequisites: PHY 292/292D and MAT 223. Offered: Spring, even # years.*

**ENR 320 • Mathematical Methods in Physics and Engineering 4 Credits**

Development of skill in mathematical techniques useful in the solution of physics and engineering problems. Included are vector analysis; line and surface integrals; Fourier analysis; partial differential equations; and probability and statistics.

*Prerequisites: [MAT 222 or MAT 224 (may be taken concurrently)] and MAT 223. Offered: Fall. Special Notes: Carries cross-credit in physics.*

**ENR 326 • Circuit Analysis & Simulations 4 Credits**

Circuit analysis techniques as applied to: sinusoidal steady state analysis with power calculations, first and second order transient analysis in both time and Laplace domains, three-phase circuits and magnetically coupled circuits. Additional topics include: frequency response, resonance, filters, Bode plots. Simulation of electrical and electronic circuits will be emphasized.

*Prerequisites: [MAT 222 or MAT 224 (May be taken concurrently)] and PHY 302 and PHY 303. Offered: Spring, odd # years.*

**ENR 336 • Signals and Systems 4 Credits**

Continuous-and discrete-time signals and systems. Topics include: definitions and properties of signals and systems, convolution, solution of differential and difference equations, Laplace and Z transforms, and Fourier analysis. Emphasis is on applications to signal processing, communication and control systems.

*Prerequisites: MAT 222 or MAT 224; PHY 302/303; ENR/PHY 352/353. Offered: Fall, even # years.*

**ENR 348 • Heat Transfer 3 Credits**

Further development of the understanding of thermodynamics, fluid mechanics, mathematics, and physics. Problems in heat transfer and system design are emphasized for systems in which thermal transport processes are important.

*Prerequisites: ENR 318 and one of the following: MAT 222, MAT 223, MAT 224. Offered: Spring, odd # years.*

**ENR 352 • Computer Methods in Physics and Engineering 3 Credits**

Application of the computer to solve applied problems of interest to physicists and engineers. Computer techniques are developed for numerical methods, simulation models, and data acquisition and control in the laboratory.

*Prerequisites: MAT 223 and PHY 296/297 (with a grade of C or better) or Consent of instructor. Corequisites: Concurrent enrollment in ENR 353 is required. Offered: Spring. Special Notes: PHY 302/303 is a recommended prerequisite. Carries cross-credit in physics.*

**ENR 353 • Computer Methods in Physics and Engineering Lab 1 Credit**

Laboratory experience accompanying ENR 352.

*Corequisites: Concurrent enrollment in ENR 352 is required. Offered: Spring. Special Notes: Carries cross-credit in physics.*

**ENR 356 • Fundamentals of Design and Manufacturing 3 Credits**

Introduction to basic design principles relevant to manufacturing, material of manufacturing, and related structure and properties. Material processing, behavior, and failure in design and manufacturing. Characterization of process capabilities and parts.

*Prerequisites: ENR 160; ENR 304/305; ENR 308; MAT 223. Offered: Fall, odd # years.*

**ENR 358 • Design of Mechanical Components and Systems 3 Credits**

Emphasizes product design and fabrication. Developing a mechanical component design problem. Selecting standard mechanical components such as lubrication and bearings, gears, springs, and fasteners. Analysis and synthesis of motion in machines. Displacement, velocity, and acceleration of mechanisms. Culminates with a project designing and fabricating a system that fulfills customer specifications.

*Prerequisites: ENR 356 and PHY 340. Corequisites: Concurrent enrollment in ENR 359 is required. Offered: Spring, even # years.*

**ENR 359 • Design of Mechanical Components and Systems Lab 1 Credit**

Laboratory experience accompanying ENR 358.

*Corequisites: Concurrent enrollment in ENR 358 is required. Offered: Spring, even # years.*

**ENR 402 • Mechanical Systems and Measurements Lab 3 Credits**

A laboratory course focused on careful measurements of physical properties such as temperature, pressure, stress, force, emissivity, and vibration modes. Emphasis is placed on experimental methods, statistical estimates of experimental uncertainty, methods of calibration, transducers for mechanical measurement, data acquisition and processing. Appropriate written and oral presentations of measurements.

*Prerequisites: ENR 304/305; MAT 223; PHY 296/297. Offered: Fall, odd # years.*

**ENR 420 • Software Process 3 Credits**

Balancing the various real-world challenges that a software engineer encounters, including ambiguity, conflicting requirements, task-time estimation, team dynamics, requests from customers, product managers or architects. A team-based software project on a modern computer science topic will be developed during the semester.

*Prerequisites: COS 216. Special Notes: Carries cross credit with computer science. ENR 477 is a recommended prerequisite. Offered: Spring, odd # years.*

**ENR 422 • Fluid Mechanics 3 Credits**

Laws of statics, kinematics, and dynamics applied to fluid mechanics. Integral and differential conservation laws for mass, momentum, and energy. Dimensional analysis, viscous pipe flow, boundary layers, separated flows, and potential flow.

*Prerequisites: MAT 223 and PHY 296/297 (with a grade of C or better) or Consent of instructor. Corequisites: Concurrent enrollment in ENR 423 is required. Special Notes: Carries cross-credit in physics. Offered: Fall.*

**ENR 423 • Fluid Mechanics Lab** 1 Credit

Laboratory experience accompanying ENR 422.

*Corequisites: Concurrent enrollment in ENR 422 is required. Offered: Fall. Special Notes: Carries cross-credit in physics.*

**ENR 424 • Electronic Materials and Devices** 3 Credits

Theory and application of condensed matter and materials. Physical origin of electrical, optical, mechanical, thermal, and magnetic properties. Emphasis on devices such as pn junction diodes, LEDs, piezoelectrics, and sensors. An accompanying lab explores characterization of materials and the design, fabrication, and testing of devices.

*Prerequisites: PHY 302/303 or PHY 312/313. Corequisites: Concurrent enrollment in ENR 425 is required. Offered: Fall, even # years. Special Notes: Carries cross-credit in physics.*

**ENR 425 • Electronic Materials and Devices Laboratory** 1 Credit

Laboratory component of ENR 424 .

*Corequisites: Concurrent enrollment in ENR 424 required. Offered: Fall, even # years. Special Notes: Carries cross-credit in physics.*

**ENR 436 • Microprocessors** 3 Credits

Advanced principles of microcomputer hardware and software. Topics include computer organization, instruction sets and addressing modes, assembly language programming, arithmetic and logic operations, input/output, buffers, interrupts and special purpose features such as A/D converters.

*Prerequisites: ENR 306 and ENR 307. Corequisites: Concurrent enrollment in ENR 437 is required. Offered: Fall, even # years.*

**ENR 437 • Microprocessors Lab** 1 Credit

Lab experience accompanying ENR 436.

*Corequisites: Concurrent enrollment in ENR 436 is required. Offered: Fall, even # years.*

**ENR 446 • Control Systems** 3 Credits

Time and frequency domain representation of feedback control systems. Topics include: stability criteria, root locus methods, frequency response techniques, digital implementation and hardware considerations.

*Prerequisites: PHY 302; MAT 222 or MAT 224 (may be taken concurrently). Corequisites: Concurrent enrollment in ENR 447 is required. Offered: Spring, odd # years.*

**ENR 447 • Control Systems Lab** 1 Credit

Lab experience accompanying ENR 446.

*Corequisites: Concurrent enrollment in ENR 446 is required. Offered: Spring, odd # years.*

**ENR 450 • Topics in Physics and Engineering** 3-4 Credits

Topics selected from various fields of engineering and physics for the purpose of illustrating the practical application of physical principles. Emphasis on developing the skills and viewpoints commonly used by engineers and physicists. The field of engineering or physics is announced prior to registration.

*Prerequisites: Related courses as specified. Repeatable course: Course may be repeated when a different topic is emphasized. Special Notes: Carries cross-credit in physics. Offered: Occasionally.*

**ENR 465 • Engineering Design Seminar** 1 Credit

Prepares students for engineering practice through a major design experience. Design projects have a major engineering component to them, and are intentionally multi-disciplinary in nature. Students work in teams to design a system to meet a given specification that requires the incorporation of relevant engineering standards.

*Prerequisites: Senior standing and a declared major in engineering. Offered: Fall.*



**ENR 477 • Software Engineering 3 Credits**

Formal approach to the design and development of software. Design methodologies include object-oriented design, components, design patterns, and event-driven design. Project management, walkthroughs, documentation, team programming, and the development of a significant software project.

*Prerequisites: COS 216. Offered: Fall, odd # years. Special Notes: Carries cross credit with computer science.*

**ENR 490 • Engineering Design Project 3 Credits**

Prepares students for engineering practice through a major design and prototyping experience. The design produced in ENR 465 will be the basis for building a prototype system. The prototype will incorporate relevant engineering standards. Final designs and prototypes are documented in a professional manner and presented publicly.

*Prerequisites: ENR 465. Offered: Spring.*

**ENS 104 • Environment and Humanity 3 Credits**

Interrelationships and interactions of humans with the natural environment in which they live. Causes of and potential solutions to environmental problems like pollution of water, air, and soil; extinction of wildlife; and degradation of natural and human ecosystems are examined, using the science of ecology as a knowledge base.

*Corequisites: Concurrent registration in ENS 104D is required. Offered: Fall, Spring.*

**ENS 104D • Environment and Humanity Lab 1 Credit**

Laboratory experience accompanying ENS 104. Includes some outdoor and off-campus investigations.

*Corequisites: Concurrent registration in ENS 104 is required. Offered: Fall, Spring.*

**ENS 201 • Introduction to Geographic Information Systems 3 Credits**

An introduction to the science, hardware, and software of mapping geographic locations and analyzing information about those locations. Investigation of remote sensing, GPS data collection, GIS data types, editing GIS data, and spatial data analysis and display, with emphasis on applications to creation stewardship problems.

*Offered: Fall, odd # years. Special Notes: Carries cross-credit in geography.*

**ENS 205L • Sustainable Living 3 Credits**

A multidisciplinary approach to the challenges of living a sustainable life in a complex world. Considers how ecological, ethical, and cultural understandings inform our responsibility for personal and global decisions.

*Prerequisites: GES 130 and GES 160 (may be taken concurrently) or GES 244 (may be taken concurrently). Offered: Spring.*

**ENS 316 • Wildlife Ecology and Management 3 Credits**

Analysis of terrestrial vertebrate populations, communities, and habitats. Exploration of how these analyses are applied to the manipulation, exploitation, protection, and restoration of animal populations and communities.

*Prerequisites: Two of the following: BIO 122/122D, BIO 128/128D, ENS 104/104D; BIO 218 (may be taken concurrently) or major in environmental science or environmental studies; Junior or senior standing.*

*Corequisites: Concurrent registration in ENS 317 is required. Special Notes: Carries cross-credit in biology. Offered: Spring, even # years.*

**ENS 317 • Wildlife Ecology and Management Lab 1 Credit**

Laboratory experience accompanying ENS 316. Includes some outdoor and off-campus investigations.

*Corequisites: Concurrent registration in ENS 316 is required. Offered: Spring, even # years. Special Notes: Carries cross-credit in biology.*

**ENS 318KZ • Ecology in the Tropics: Natural History and Future Prospects 4 Credits**

Travel in Kenya or Ecuador surveying the land, climate, plants, animals, homes, transportation, and industries, noting especially the impact of human presence. Ecuador includes the Amazon rainforest, Andean cloud forests, volcanic mountains, highlands, towns, cities, and the Galapagos Islands. Kenya includes Nairobi, African savanna, the Rift valley, and Masai Mara.

*Prerequisites: Laboratory Science (D) course and Mathematics (M) course. Offered: Interim. Special Notes: Carries cross-credit in biology and general studies.*

**ENS 335K • Environmental Ethics** 3 Credits

Examines the intersection of science, society, and technology as it pertains to issues in environmental ethics. Moves from theory—considering science, society, and technology philosophically—to application by concluding with a major research project on an applied issue in environmental ethics involving scientific data and technological choice.

*Prerequisites: Laboratory Science (D) course and Mathematics (M) course. Offered: Fall, Interim. Special Notes: Carries cross-credit in philosophy.*

**ENS 341K • Environmental Writing** 3 Credits

As the environmental crisis has deepened, American nature writing has evolved into a richly creative endeavor that explores the complex interactions of nature, technology, and society. Students study environmental writing as a means for valuing biodiversity and for envisioning changes in global policies, applications of technology, and environmental ethics.

*Prerequisites: Laboratory Science (D) course and Mathematics (M) course. Offered: Fall or Spring. Special Notes: Carries cross-credit in English.*

**ENS 399 • Introduction to Research** 1 Credit

An introduction to research methodology in the environmental sciences, with experience in the use of environmental literature and an examination of how to distinguish and evaluate different types of scientific writing and presentations. Experience in the development of a research proposal.

*Prerequisites: Major in environmental studies or environmental science and Junior standing. Special Notes: Carries cross-credit in biology. Offered: Fall, Spring.*

**ENS 481 • Internship in Environmental Studies** 1-4 Credits

Off-campus field experience working with an environmental organization, business, or governmental agency.

*Prerequisites: Major in environmental studies or environmental science. Offered: Fall, Spring, Summer.*

**ENS 496 • Research in Environmental Studies** 1 Credit

An opportunity to become involved in an independent research project of the student's own choosing in some area of environmental studies. Experience in the collection, manipulation, analysis, and portrayal of information and development of skills needed to be effective in environmental research.

*Prerequisites: ENS 399 and Consent of instructor. Offered: Fall, Spring.*

**ENS 498 • Seminar in Environmental Studies** 1 Credit

A senior capstone course for environmental studies and environmental science majors centered on a multidisciplinary discussion of current environmental issues in society.

*Prerequisites: ENS 496. Offered: Spring.*

**ENS 499 • Symposium** 0 Credit

Completion of a scientific paper and oral presentation based upon research conducted in ENS 496.

*Prerequisites: ENS 496. Offered: Fall, Spring.*

**ENW 100A • Introduction to Creative Writing** 3 Credits

Exploration of the creative act, addressing writing as a means for discovering the created world and ourselves as created beings within it. Emphasis on writing original work in three major genres: fiction, creative nonfiction, and poetry.

*Offered: Fall, Occasionally interim, Spring.*

**ENW 115 • Reporting I** 3 Credits

Introduction to fundamentals of reporting and writing for the news media, emphasizing print journalism. Covers news values, news judgment, the structure of news stories, information gathering, research techniques, and Associated Press style. Students learn to write quickly, accurately, and concisely on deadline.

*Offered: Fall, Spring.*

**ENW 120 • Digital News Studio** 3 Credits

Advances the basic techniques of news reporting and writing by developing skills in formats used by professionals. Includes covering at least one beat for The Clarion during the semester, investigating how national and regional stories have local connections, and presenting stories in multimedia.

*Prerequisites:* ENW 115. *Offered:* Spring.

**ENW 201 • Methods of Tutoring Writing** 1 Credit

Introduction to the practical applications of writing theory, with a focus on tutoring student writers. Course readings with supervision will guide reflection on the student's work as a Writing Center tutor.

*Prerequisites:* Consent of instructor. *Special Notes:* Required of all first-time Writing Center tutors. *Offered:* Fall, Spring.

**ENW 205A • Prose Studio** 4 Credits

A workshop for exploring and sharpening prose style utilized in blogs, personal essays, technical writing, and op-ed writing. Includes reading and writing in a variety of prose forms, voices, and topics to assist students in developing persuasive, precise, and personal writing styles.

*Prerequisites:* GES 160 or GES 244. *Offered:* Spring.

**ENW 211 • Feature Writing** 3 Credits

Analyzing, writing, and marketing feature stories of various types—service articles, profiles, human-interest pieces, and in-depth issue articles—for possible publication online or in print.

*Prerequisites:* ENW 115. *Offered:* Fall, odd # years.

**ENW 214 • Principles of Editing** 4 Credits

Editing of copy for publication in newspapers, magazines, and online media. Exposure to the book publishing process. Includes working with the Associated Press and Chicago Style manuals.

*Offered:* Fall.

**ENW 300A • Writers Workshop** 3 Credits

Open to students with a well-defined writing project in a genre of their choice (e.g., fiction, nonfiction, poetry, biography, etc.) to be completed by the end of the course. Regular and frequent consultations with instructor and class sessions with peers for critique and encouragement.

*Prerequisites:* Consent of instructor. *Offered:* Occasionally fall or spring, Interim. *Repeatable course:* May be repeated for credit with consent of instructor.

**ENW 303AZ • Travel Writing** 4 Credits

Art and craft of travel writing are studied and practiced while traveling. Focus on reading travel writing from the past and present, and writing about one's own travel experience as it is happening. May also include reading literature and other books related to the place of travel.

*Offered:* England term, fall, even # years, Occasionally interim.

**ENW 310 • Creative Nonfiction** 4 Credits

Writing creative nonfiction, including memoir, personal, short, and lyric essays, and literary journalism, with a focus on literary devices as tools for expressing experience. Emphasizes skills such as development of authentic voice, understanding the relationship between structure and meaning, and cultivating the descriptive power of language.

*Prerequisites:* One of the following: ENW 303AZ, ENW 205A, ENW 211 or Consent of instructor. *Offered:* Fall, even # years.

**ENW 312A • Fiction Writing** 4 Credits

Practice in modern narrative techniques. Emphasis on writing and peer criticism of short fiction.

*Offered:* Spring, even # years.

**ENW 317A • Poetry Writing** 4 Credits

Metrics, imagery, and other techniques of versification, with practice in writing in a wide variety of genres.

*Offered:* Fall, odd # years, Spring, odd # years.

**ENW 319 • Reporting II** 3 Credits

Refinement of interviewing, researching, writing, and online publication skills in the development of substantive news stories. Emphasis on news coverage, news gathering, use of public documents, and multiple interview sources in a community context, including selections from small town, suburban, ethnic, and urban neighborhood publications.

*Prerequisites:* ENW 115. *Offered:* Fall, even # years.

**ENW 330GZ • Media and Communication in Developing Countries** 3 Credits

An examination of the socioeconomic, technological, and political factors that have influenced the development of communication systems in developing countries, with special emphasis on the role of Christian journalists. Includes comparative analysis of western media systems and those of developing nations.

*Prerequisites:* [GES 130; GES 160; *Contemporary Western Life and Thought (L) course*; *World Cultures (U) course*] or [GES 244; *World Cultures (U) course*]; *Junior or senior standing. Offered:* Occasionally interim.

**ENW 342 • Journalism for Social Change** 3 Credits

Focus on skills and methods for investigative reporting on social issues. Investigative journalism, strategies for gaining access to public records, data analysis using Excel spreadsheets, and hands-on experience through contributing stories to the Clarion or local news partners.

*Prerequisites:* ENW 115. *Offered:* Spring, even # years.

**ENW 360 • Topics in Journalism** 3 Credits

Study of a specialized topic of relevance to the practicing journalist with emphasis on the impact of journalism within a specific cultural context and the unique role of the Christian journalist.

*Prerequisites:* *Sophomore standing or Consent of department chair. Offered:* Interim.

**ENW 405 • Publishing and Being Published** 4 Credits

Practical aspects of literary publishing from an editorial perspective (article selection, editing, layout) and the author's point of view (query letters, book proposals, contracts, agents). Visits by local writers and editors, as well as visits to publishing houses.

*Prerequisites:* ENW213; ENW 214; 4 credits in one other writing course. *Offered:* Occasionally.

**ENW 481 • Internship in Writing** 3-4 Credits

Placement in an off-campus writing position. Must be planned well in advance of placement in consultation with advisor.

*Prerequisites:* *Major or minor in English and Journalism department and Completion of 10 credit hours in english and journalism. Offered:* By arrangement.

**ENW 499 • Senior Seminar in Journalism** 3 Credits

Analysis of a variety of topics relevant to the practice of journalism with special consideration given to the role of the Christian journalist. Culminates in the completion of a major research project.

*Prerequisites:* *Senior standing; Major or minor in journalism; ENL 498. Offered:* Spring.

**FRE 101 • Introductory French I** 4 Credits

Listening, speaking, reading, and writing. Opportunities for oral practice encouraging actual communication in French. Use of internet resources to familiarize students with the French-speaking cultures of the world.

*Prerequisites:* *No more than one year of high school French or Placement exam. Offered:* Fall.

**FRE 102S • Introductory French II** 4 Credits

Continuation of functional, practical understanding and communicative use of the French language. Further study of French history and culture through films, discussions, and readings.

*Prerequisites:* *FRE 101 or Placement exam. Offered:* Spring.

**GEL 168 • Geology** 3 Credits

A study of earth's structure and the forces that continue to shape it. The fragility, power, and patience of our geologic environment are considered, as well as land use patterns and decisions that affect it. Topics include minerals and rocks, geologic time, earthquakes, volcanoes, plate tectonics, glaciers, weathering and erosion, maps/aerial photos, groundwater, mineral resources, and streams.

*Corequisites:* *Concurrent enrollment in GEL 168D is required. Offered:* Fall.

**GEL 168D • Geology Lab 1 Credit**

Laboratory experience accompanying GEL 168. Includes field trips to exposed rock layers and fossil digs.

*Corequisites: Concurrent enrollment in GEL 168 is required. Offered: Fall.*

**GEO 120 • Introduction to Geography 3 Credits**

Physical environment including weather, world climates, landforms, and natural vegetation. Humankind's response to geographical variations in terms of the use of land and sea, natural resources, population, economic activity, and political and social organization.

*Offered: Fall.*

**GEO 201 • Introduction to Geographic Information Systems 3 Credits**

An introduction to the science, hardware, and software of mapping geographic locations and analyzing information about those locations. Investigating remote sensing, GPS data collection, GIS data types, editing GIS data, and spatial data analysis and display, with emphasis on applications to creation stewardship problems.

*Offered: Fall, odd # years. Special Notes: Carries cross-credit in environmental science.*

**GEO 320K • History and the Human Environment 3 Credits**

Environmental and geographical background of human history. Agriculture, climate, energy resources, transportation, and diseases, especially as they have influenced the historical development of Western Europe and North America. Implications for current and future environmental concerns.

*Prerequisites: Laboratory Science (D) course and Mathematics (M) course. Offered: Fall, Spring. Special Notes: Carries cross-credit in history.*

**GES 101 • Pre-Intercultural Engagement Preparation 0.5 Credits**

Prepares students to participate in a non-credit cross-cultural experience to fulfill the General Education Z-tag requirement. Pre-processing includes introducing a method for reflecting on and analyzing an intercultural experience, assistance in creating a proposal for the Z-tag experience, and an opportunity to develop mid-experience exercises and activities for GES 102Z.

*Special Notes: Completion of GES 101 does not complete the Z-tag requirement, but is a prerequisite for GES 102Z. GES 101 must be taken before participating in the cross-cultural experience. Graded on an S/U basis.*

**GES 102Z • Post-Intercultural Engagement Processing 0.5 Credits**

Guided post-processing experience necessary for students to benefit fully from an independent cross-cultural experience to complete the General Education Z-tag requirement. Evaluates the method of reflection and analysis used during the intercultural experience, the implementation of the non-credit proposal approved in GES 101, and the mid-experience exercises and activities.

*Prerequisites: GES 101; Must be taken the semester following the completion of the independent cross-cultural experience. Special Notes: Graded on an S/U basis.*

**GES 103 • Writing Studio for Multilingual Learners 1 Credit**

Focuses on knowledge and skills necessary for successful college-level academic research and writing in the U.S. Students will apply reading and writing strategies to other course writing assignments. Instruction tailored to English Language Learners (international or immigrant students from non-English speaking backgrounds). Graded on an S/U basis.

*Offered: Fall.*

**GES 109 • Orientation to College Studies 3 Credits**

Students understand and improve their approach to learning to enhance success in college. Strategies developed in this course are directly applied to learning in the Christianity and Western Culture course as well as other courses taken during fall term.

*Prerequisites: Consent of instructor. Corequisites: Concurrent enrollment in GES 130 is required. Offered: Fall. Special Notes: This course is required for provisionally admitted students.*

**GES 119 • Introduction to Bethel** 3 Credits

Introduces transfer students to resources to support and enhance their success at Bethel. Develops strategies to apply to learning in the Christianity and Western culture course as well as other courses taken during fall term.

*Corequisites: Consent of instructor, Registration in GES 130 is required. Offered: Fall. Special Notes: This course is required for provisionally admitted students.*

**GES 125 • Introduction to the Creative Arts** 4 Credits

Highlights the crucial experience of the creative arts and develops literacy in artistic language. Art forms may include dance, film, literature, music, theater, and visual arts. Stylistic, social, and historical contexts examined in light of various themes: death/despair, humor, relationships, and religion. Critical interaction and reflection from a Christian worldview.

*Offered: Fall, Interim, Spring.*

**GES 130 • Christianity & Western Culture** 4 Credits

Movements that influenced Europe and North America up through the Enlightenment. Explores with insight and empathy the writings and lives that have influenced the course of world societies. Evaluates the diverse ways in which Christians have interacted with Western culture by shaping, absorbing, and criticizing the culture of the West.

*Offered: Fall, Interim, Spring.*

**GES 140 • Introduction to Wellbeing** 3 Credits

Explores many of the dimensions that influence wellbeing, including Spiritual, Cognitive, Emotional, Physical, Relational, and Meaning. Examines the dynamic interconnection between the dimensions. Students integrate foundational knowledge, experiences, and strategies to become successful whole and holy individuals not only in college but also throughout adult life.

*Offered: Fall, Spring.*

**GES 145 • Humanities I: Greco-Roman through Middle Ages** 4 Credits

The first course in the Humanities Program focuses on great writings and works of art, music, and theatre from the Greeks through the Middle Ages. Likely figures for study include Plato, Aristotle, Augustine, Anselm, and Dante.

*Offered: Fall.*

**GES 147 • Humanities II: Renaissance and Reformation** 4 Credits

The second course in the Humanities Program considers significant figures, movements, and texts in the Renaissance and the Reformation era. Likely figures for study include Luther, Calvin, Erasmus, Anabaptist writers, Renaissance and baroque artists, and Shakespeare.

*Prerequisites: GES 145. Offered: Interim. Special Notes: Completing GES 147 replaces GES 125 Introduction to the Creative Arts.*

**GES 160 • Inquiry Seminar** 3 Credits

While exploring a specific topic of interest, students gain knowledge about the meaning and value of a Christian liberal arts education. Establishes community among students, faculty, and various aspects of student life. Includes instruction and practice in writing as well as preparing and delivering oral presentations.

*Offered: Fall, Interim, Spring.*

**GES 203 • Writing Studio for Multilingual Learners** 1 Credit

Focuses on knowledge and skills necessary for successful college-level academic research and writing in the U.S. Students will apply reading and writing strategies to other course writing assignments. Instruction tailored to English Language Learners (international or immigrant students from non-English speaking backgrounds). Graded on an S/U basis.

*Offered: Spring.*

**GES 208 • Human Sexuality** 3 Credits

An examination of sexuality through the life cycle, focusing on the nature of sexual and reproductive functioning, sexual self-understanding, sexual dimensions of interpersonal relationships, and ethical dimensions of sexuality.

*Offered: Spring.*

**GES 244 • Humanities III: European Enlightenment and American Culture to 1877** 4 Credits

The third course in the Humanities Program begins in the European Enlightenment and culminates in a research paper on American culture through the Reconstruction era. Likely figures for study include Edwards, Bach, Beethoven, Austen, Burke, Paine, The Federalist Papers, de Tocqueville, American Transcendentalist writers, Frederick Douglass, and Abraham Lincoln.

*Prerequisites: GES 147. Offered: Spring. Special Notes: Completing GES 244 replaces GES 160 Inquiry Seminar and GES 130 Christianity and Western Culture.*

**GES 246 • Humanities IV: Modern and Contemporary Western Culture** 4 Credits

The final course in the Humanities Program begins with the 19th century Industrial Revolution and ends near the present. It includes a major paper on theology. Likely subjects for study include Marx, Nietzsche, T.S. Eliot, jazz, modern art, Bonhoeffer, and Martin Luther King Jr.

*Prerequisites: GES 244. Offered: Fall. Special Notes: Completing GES 246 replaces THE 201 Christian Theology and a Contemporary Western Life and Thought (L) course.*

**GES 302K • Lethal Microbes** 3 Credits

Despite amazing scientific and technical successes in medicine in the last century, diseases like AIDS, tuberculosis, and malaria confront us today with both national and global healthcare crises. Living with the lethal microbes responsible for these diseases requires careful inquiry about these organisms and their wide impact on human society.

*Prerequisites: Laboratory Science (D) course and Mathematics (M) course. Offered: Occasionally.*

**GES 303K • Genetics, Ethics and the Law** 3 Credits

Study of the ethical and legal dilemmas created by recent advances in biotechnology. Focus on the question of what direction the law should take, specifically patent, family, and criminal law. Explores the struggle between the Christian worldview, rapid changes in science, and society's resolution of the questions these changes produce.

*Prerequisites: Laboratory Science (D) course and Mathematics (M) course. Offered: Occasionally.*

**GES 305K • Anatomy of a Pandemic** 3 Credits

Explores the history, biology, and social and global impact of infectious diseases such as the bubonic plague, influenza, HIV/AIDS, and emerging pathogens. Evaluates technological advances that contribute to treatment of infectious diseases, vaccine development, and modern epidemiology. Considers social factors related to disease ecology and the availability of medical treatment.

*Prerequisites: Laboratory Science (D) course and Mathematics (M) course. Offered: Occasionally interim.*

**GES 306K • Nuclear Energy: Past and Present** 3 Credits

Basic scientific principles underlying nuclear fission and fusion, along with a survey of the history of nuclear weapons and reactors from 1935 to the present. Topics include weapon construction and design, delivery systems, and nuclear deterrence, along with current arms reduction agreements and waste problems.

*Prerequisites: Laboratory Science (D) course and Mathematics (M) course. Offered: Occasionally.*

**GES 307K • Natural Resources: Use Them but Don't Lose Them** 3 Credits

A consideration of the use and management of natural resources and their impact on society and vice versa. Primary resources considered include forests, agricultural land, and geologic/mineral resources. Global Positioning System (GPS) and Geographic Information System (GIS) technologies are spotlighted as key management tools.

*Prerequisites: Laboratory Science (D) course and Mathematics (M) course. Offered: Spring.*

**GES 308K • Genomic Archaeology and Scientific Revolution** 3 Credits

Advances in DNA technology have led to the sequencing of whole genomes, including the human genome, and to a revolution in science. Explores how this technology works and the consequences for society. Applications related to diabetes, cancer, forensics, genetic engineering, and the nature of life itself are discussed.

*Prerequisites: Laboratory Science (D) course and Mathematics (M) course. Offered: Occasionally.*

**GES 309K • Biology of the Mind 3 Credits**

Survey of contemporary technologies and studies of brain structure and function and their relation to cognitive abilities and emotion. Introduction to modern technologies of brain mapping such as MRI, PET, and CAT scans. Combines neuroscience, philosophy of self, psychology, linguistics, and sociobiology.

*Prerequisites: Laboratory Science (D) course and Mathematics (M) course. Offered: Occasionally interim.*

**GES 311K • Forensics: The Science of Crime 3 Credits**

An introduction to the roles that biology, chemistry, physics, and psychology play in criminal investigations. Discovery, identification, and comparison of physical evidence using various current techniques. Discussion of the processes and limitations of scientific knowledge.

*Prerequisites: Laboratory Science (D) Course and Mathematics (M) course. Offered: Occasionally fall, Interim, Spring.*

**GES 312G • Disability and Society 3 Credits**

Exploration of ideologies of disability including medical, moral, rehabilitative, and minority approaches. Identification of the social, economic, religious, and other barriers faced by people with disabilities. International perspectives on disability, as well as the concept of a "disability culture." Experiential learning components included.

*Prerequisites: [GES 130; GES 160; Contemporary Western Life and Thought (L) course; World Cultures (U) course] or [GES 246; World Cultures (U) course]. Offered: Occasionally interim.*

**GES 314K • Stem Cells, Cloning, and Reproductive Technologies 3 Credits**

Stem cells, cloning, reproductive technologies, gene therapy, and drug production are all applications of biotechnology. The study of these applications along with their influence and their impact on society are examined.

*Prerequisites: Laboratory Science (D) course and Mathematics (M) course. Offered: Occasionally.*

**GES 315K • Brain Research Technology and Gender Differences 3 Credits**

A review of gender differences revealed by recent brain mapping and scanning technology. MRI, fMRI, PET, and CAT scans reveal different aspects of brain structure and function. Several other neurologic, hormonal, and genetic technologies will also be reviewed as they relate to physiological and behavioral analysis.

*Prerequisites: Laboratory Science (D) course and Mathematics (M) course. Offered: Occasionally interim.*

**GES 317KZ • Science and Technology in New Zealand 3 Credits**

Exploration of historical development of science and technology in New Zealand, including current challenges. Topics include inventions and inventors, health care, unique technologies, native and invasive species, sea life, earthquakes, hot springs, and volcanic activity in the context of historical Maori and British colonial cultures leading to the present day.

*Prerequisites: Laboratory Science (D) course and Mathematics (M) course. Offered: Interim.*

**GES 318KZ • Ecology in the Tropics: Natural History and Future Prospects 3 Credits**

Travel in Ecuador or Kenya surveying the land, climate, plants, animals, homes, transportation, and industries, noting especially the impact of human presence. Ecuador includes the Amazon rainforest, Andean cloud forests, volcanic mountains, highlands, towns, cities, and the Galapagos Islands. Kenya includes Nairobi, African savanna, the Rift valley, and Masai Mara.

*Prerequisites: Laboratory Science (D) course and Mathematics (M) course. Offered: Interim. Special Notes: Carries cross-credit in biology and environmental studies.*

**GES 321K • Human Genetics 3 Credits**

Review of modern genetic history, principles, and technology as applied to humans. Includes classical Mendelian genetics, probability calculation, pedigree analysis, heritability analysis, and cytogenetics. Emphasizes recent technologies of gene sequencing, genomics, gene therapy, genetic engineering, screening, early life (embryo) manipulations, and stem cell and cloning risks and benefits.

*Prerequisites: Laboratory Science (D) course and Mathematics (M) course. Offered: Occasionally.*



**GES 322K • Cancer: Science and Society** 3 Credits

The biology of cancer; the technologies of cancer diagnosis and treatment; and some social, family, and personal impacts of this disease.

*Prerequisites: Laboratory Science (D) course and Mathematics (M) course. Offered: Occasionally.*

**GES 324K • Greening the Built Environment** 3 Credits

A study and critique of the "built" environment: our homes, places of work and leisure, transportation systems, and food systems. Development of understanding and commitment for designing, living in, and working in our dwellings and communities in ways that demonstrate stewardship toward the creation.

*Prerequisites: Laboratory Science (D) course and Mathematics (M) course. Offered: Occasionally.*

**GES 328K • Nutrition: The Total Diet** 3 Credits

Investigates the science of interactions between proper nutrition and weight management, and examines the appropriate ethical, and perhaps limited, use of technology as a means to reverse obesity. Topics include how hormonal imbalances and genetic alterations may result in failure to regulate appetite and metabolism.

*Prerequisites: Laboratory Science (D) course and Mathematics (M) course. Offered: Occasionally.*

**GES 330KZ • History of Science in Europe** 3 Credits

Study of scientists and their discoveries throughout history within the context of an experiential learning opportunity in Europe. Astronomy, biology, chemistry, engineering, mathematics, medicine, and physics are addressed. Evaluation of the effect on society of these disciplines (architecture, art, exploration, philosophy, politics, religion, etc.) will also be evaluated.

*Prerequisites: Laboratory Science (D) course and Mathematics (M) course. Offered: Occasionally interim.*

**GES 331K • Science in the Fifth Dimension** 3 Credits

An exploration of what science is, what it is not, and how it interacts with its "fifth dimension" (society) in art, politics, technology, culture, medicine, and other aspects of the nonscientific community.

*Prerequisites: Laboratory Science (D) course and Mathematics (M) course. Offered: Occasionally.*

**GES 334K • Perspectives on Computing and Society** 3 Credits

Impact of computing technology on social, economic, and value systems. Evolution of approaches to software development. Consideration of Christian ethics in the development and application of computing technology in various areas of human activity.

*Prerequisites: Laboratory Science (D) course and Mathematics (M) course. Offered: Occasionally. Special Notes: Students may not receive credit for both GES 334K and COS 450.*

**GES 338K • Great Controversies in Science and Technology** 3 Credits

Overview of great scientific controversies past and present. Topics include: science versus religion, age of the earth, evolution and creation, global warming, and energy issues. Relationships between science and society with particular emphasis on discerning the difference among scientific results, popular consensus, and societal pressures.

*Prerequisites: Laboratory Science (D) course and Mathematics (M) course. Offered: Interim.*

**GES 339K • Nano: Small Science, Big Ideas** 3 Credits

Investigation of nanotechnology: the science of very small things and their strange, unexpected behavior. Learn why and how nanotechnology is being applied to solve some of our greatest challenges in energy, medicine, and healthcare. Societal and environmental impacts and ethical concerns from a Christian perspective are explored.

*Prerequisites: Laboratory Science (D) course and Mathematics (M) course. Offered: Occasionally.*

**GES 340K • Healthcare Informatics: Merging Data, Science, Technology, and Healthcare** 3 Credits

Investigates how technology supports meaningful use of data in the delivery of healthcare. Explores common disease processes tracked through healthcare information systems. Considers historical, ethical, and regulatory complexities of healthcare informatics as related to the role of consumer, healthcare administrator, insurer, researcher, and healthcare professional.

*Prerequisites: Laboratory Science (D) course and Mathematics (M) course. Offered: Occasionally.*

**GES 355 • Advanced Writing Studio for Multilingual Learners** 1 Credit

Students apply reading and writing strategies to writing lengthy assignments in advanced courses. Students are expected to take the studio in conjunction with a class that requires substantial writing and research. Instruction tailored to English Language Learners (international or immigrant students from non-English speaking backgrounds). Graded on an S/U basis .

*Offered: Fall.*

**GES 390K • Decision-Making and Medical Technology** 3 Credits

Health technologies that may be both harmful and beneficial to human health are explored from the perspectives of ethical decision making, psychosocial dynamics, faith, and health policy formation. Topics include genetic testing, contraceptives, intensive treatment of newborns, assisted reproduction organ transplantation, enhancement technologies, aging, and end-of-life decisions.

*Prerequisites: Laboratory Science (D) course and Mathematics (M) course. Offered: Occasionally.*

**GES 402P • Perspectives on Christian Marriage** 3 Credits

An analysis of the central issues involved in making a wise decision concerning Christian marriage. Topics include: what the Bible says about marriage; whether or not marriage is for you; family of origin concerns; premarital factors associated with marital stability; and planning for success.

*Prerequisites: Senior standing; [GES 140; GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Occasionally.*

**GES 403P • Rage on the Stage: Cultivating Empathy and Imagination** 3 Credits

Plays, films, and live productions as a springboard for reflection on relevant issues within our society. Discussion and contemplation of contemporary issues that may challenge Christians' personal or collective convictions. Issues may include dysfunctional behavior, racism, environmental or social concerns, as well as current relevant issues selected by students.

*Prerequisites: Senior standing; [GES 140; GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Occasionally.*

**GES 404P • Being Just in an Unjust World** 3 Credits

Study and practice of moral decision making from psychological, philosophical, and Christian perspectives. Analyzes moral sensitivity, judgment, and action; includes discussion and exercises to develop personal skills in these areas. Focal issues may include friendship, human rights, personal sexuality, power/authority, capital punishment, and current issues selected by students.

*Prerequisites: Senior standing; [GES 140; GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Occasionally.*

**GES 405P • Ethical Relationships: Choosing the Good in Family and Community Life** 3 Credits

Exploration of the ethics of relationships in the context of ethical theory and Christian virtues and norms. Topics include: marriage and divorce; gender; family caregiving; end of life; professional, work, and business relationships; race relations; economic justice; and consumption ethics.

*Prerequisites: Senior standing; [GES 140; GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Occasionally.*

**GES 407P • Women's Lives, Women's Choices** 3 Credits

Female experience during adolescence and adulthood, emphasizing female socialization and potential adult roles. Personal experiences, future life choices, and their consequences in light of the course content and Christian faith.

*Prerequisites: Senior standing; [GES 140; GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Occasionally.*

**GES 409P • Christian Leadership in a Secular World** 3 Credits

Current issues facing Christian leaders today. The formulation of a personal biblical approach to leadership to enable one to impact society. Involves a variety of personal decisions that are designed to facilitate knowing oneself and understanding one's own responses in various situations.

*Prerequisites: Senior standing; [GES 140; GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Occasionally.*

**GES 410P • Family Life Cycle** 3 Credits

Study of the stages in the family life cycle, with attention to the factors that cause the family unit to separate during the cycle. Special emphasis on studying one's own family of origin in light of both Scripture and society's messages about what family should be. Opportunity to consider preparation for one's own future family development.

*Prerequisites: Senior standing; [GES 140; GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Occasionally.*

**GES 412P • The Plot Thickens: Character Growth in Literature and Life** 3 Credits

Readings and discussion of a number of novels and short stories, examining characters and their values, and responses in the face of complex life situations. Insights of narrative theologians will be used to think about building character as individuals and the role of the community in this process.

*Prerequisites: Senior standing; [GES 140; GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Occasionally.*

**GES 413P • Women's Spiritual Experience** 3 Credits

Exploration of diverse women's spiritual experiences by reading spiritual autobiographies, biblical feminist writings, and research on gender and religion. Discussion of how gender influences religious institutions and Christian women's faith. Students write their own spiritual autobiographies.

*Prerequisites: Senior standing; [GES 140; GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Occasionally.*

**GES 414P • The Theology of J.R.R. Tolkien** 3 Credits

Explores theological issues raised by J.R.R. Tolkien's "Middle Earth" writings. Includes theological themes such as evil, salvation, and power, emphasizing choices the characters in the story make with regard to those themes. Attention given to philosophical and literary assumptions/methodologies employed by the author.

*Prerequisites: Senior standing; [GES 140; GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Occasionally.*

**GES 418P • Christian Lives: Contemporary Spiritual Narratives** 3 Credits

Reading, writing, and viewing contemporary spiritual narratives that explore the dimensions of one's call to the Christian life in the contemporary world. Materials selected for their spiritual, cultural, and literary value, including both traditional Christian authors (e.g., C.S. Lewis) and more recent writers (e.g., Anne Lamott).

*Prerequisites: Senior standing; [GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Occasionally.*

**GES 419P • Christian Perspectives on the 20th and 21st Centuries** 3 Credits

Examines significant events and trends of the 20th century in light of Christian values. Topics include the environment, military intervention, immigration, and the role of the federal government. Explores diverse Christian responses to such issues in historical context, and the implications of these perspectives for the 21st century.

*Prerequisites: Senior standing; [GES 140; GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Occasionally.*

**GES 420P • Bioethics** 3 Credits

How technological advances have increased our abilities to conceive, sustain, and alter human lives. How to make morally responsible decisions that shape a just society. Moral issues such as healthcare practices, reproductive methods, allocation of healthcare resources, and biomedical research.

*Prerequisites: Senior standing; [GES 140; GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Fall, Spring.*

**GES 421P • Social Justice and Christian Responsibility 3 Credits**

Selected themes of social justice in the United States and the global community. Examines different Christian views of the market economy and business, international trade, public policies in the United States, and the global community. Explores possible actions of concerned Christians collaborating with others to address problems of social injustice.

*Prerequisites: Senior standing; [GES 140; GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Occasionally.*

**GES 424P • Christian Perspectives on Creation and Evolution 3 Credits**

An examination of the positions held by different scientists and Christians in regard to the origins of humans, of the world, and the interpretation of Genesis chapters 1 and 2.

*Prerequisites: Senior standing; [GES 140; GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Occasionally.*

**GES 425P • Censorship and Freedom of Expression 3 Credits**

Censorship from the perspective of various disciplines, such as psychology, theology, literature, history, and art. Key issues and formulation of student's own positions.

*Prerequisites: Senior standing; [GES 140; GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Occasionally.*

**GES 426P • Family Interaction 3 Credits**

An integration of a Christian worldview related to the contemporary family unit; approaches to conflict, power, stress, intimacy, and wholeness. The family system in light of contemporary trends and Christian choices. Communication patterns are examined and evaluated.

*Prerequisites: Senior standing; [GES 140; GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Fall, Spring.*

**GES 427P • Christian Responses to Genocide 3 Credits**

Examination of the nature of genocide and religious terrorism with an emphasis on psychosocial influences in the actions of perpetrators, bystanders, and victims. Discussion of relevant religious and moral issues. Study includes selected major genocides of the 20th and 21st centuries.

*Prerequisites: Senior standing; [GES 140; GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Occasionally.*

**GES 432P • Christian Responses to Postmodernism 3 Credits**

Examination of postmodern theory and its effects on culture, with particular focus on various Christian responses to postmodernism. Attention will be paid to the historical development of postmodernism and the ethical and cultural impacts of postmodernism.

*Prerequisites: Senior standing; [GES 140; GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Occasionally.*

**GES 433P • Biblical Spirituality: Experiencing God 3 Credits**

A study of spirituality in a variety of biblical texts, both Old Testament and New Testament. Essential issues related to spirituality, including: What is spirituality? What are biblical teachings regarding prayer, worship, and spiritual disciplines? How do we interpret biblical texts as paradigms for the contemporary practice of spirituality? .

*Prerequisites: Senior standing; [GES 140; GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Occasionally.*

**GES 438P • Christian Music in Context 3 Credits**

Consideration of the nature and function of Christian music in contemporary society, incorporating a study of its development and place in various historical and cultural contexts, as both an avenue for worship and a force for spiritual development.

*Prerequisites: Senior standing; [GES 140; GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Occasionally.*

**GES 440P • Christian Nonviolence** 3 Credits

What it means to be a Christian peacemaker in today's world. The biblical mandate, the quest for Christian nonviolence in a historical and biographical context, and its implications for the development of conflict-resolution skills and contemporary public policy issues.

*Prerequisites: Senior standing; [GES 140; GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Occasionally.*

**GES 441PZ • Issues and Praxis in Christian Social Justice** 3 Credits

Examines the theme of justice in the Bible. Explores related themes concerning the history of colonialism, human suffering, the church's inattention to global injustice, spiritual development in relation to justice advocacy, and Christian social responsibility. Bridges theory and action in the setting of Cambodia with specific attention to human trafficking.

*Prerequisites: Senior standing; [GES 140; GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Interim. Special Notes: All students desiring to take the course must complete an application process. Students who do not meet all of the above requirements may be admitted to the course on a case-by-case basis.*

**GES 444P • Christians and Conflict** 3 Credits

Examines how we are called as Christians to respond to interpersonal conflicts that continually exist in our lives. Emphasizes many different types of interpersonal conflicts, including conflicts in friendships, marriages, parent/child relationships, workplaces, and churches. Analyzes conflict as it is currently portrayed in the media.

*Prerequisites: Senior standing; [GES 140; GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Occasionally.*

**GES 445P • Aging from a Cross-Cultural Perspective: Living in a Graying World** 3 Credits

Aging processes and roles of the older person in our society and other cultures. Choices confronting students in their own aging, their relationship to aging parents and friends, and living and operating as Christians in a rapidly aging world.

*Prerequisites: Senior standing; [GES 140; GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Occasionally.*

**GES 447PZ • Muslims and Middle Easterners: Past, Present, and Personal** 3 Credits

An examination of the historical, political, religious, and cultural influences of the Arab peoples of today. Students begin to develop understanding of Arabs and Islam, and initiate communication with Arab and Muslim Americans in Minnesota.

*Prerequisites: Senior standing; [GES 140; GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Occasionally.*

**GES 448P • Abusive Relationships and Christian Responsibility** 3 Credits

Explores different types of intimate violence using research from communication, psychology, and sociology. Examines the history of domestic violence, the prevalence of intimate violence, cycles of violence, and secular and Christian responses. Evaluates choices informed by Christian values, education, and personal experience. Develops personal strategies for responding to intimate violence.

*Prerequisites: Senior standing; [GES 140; GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Interim.*

**GES 449P • Chance or Design: Our Place in the Cosmos** 3 Credits

Exploration of recent advances in Big Bang cosmology and planetary science with an emphasis on apparent fine-tuning to conditions suitable for human life. Discussion of the possibility of extraterrestrial life. Analysis of design arguments, with the goal of developing a biblically sound view of our relationship to nature and God.

*Prerequisites: Senior standing; [GES 140; GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Occasionally.*

**GES 450P • Reconciliation in a Racialized Society** 3 Credits

Study of race, racism, and reconciliation in the United States. Starting from the biblical mandate to be righteous people, a focus on discerning past and present racism, understanding the need for racial justice and reconciliation, appreciating different cultures/ethnicities, and engaging students in the process of racial reconciliation.

*Prerequisites: Senior standing; [GES 140; GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Occasionally interim.*

**GES 451P • Spirituality, Sexuality, and the Family** 3 Credits

Three powerful forces in everyday life that vitally affect people both personally and collectively. Both past and contemporary influences and experiences that are likely to impact people as they seek to make their personal sexuality, spirituality, and family relationships consistent with Christian values.

*Prerequisites: Senior standing; [GES 140; GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Fall, Spring.*

**GES 452P • Sports in Society** 3 Credits

Study of sports as a social phenomenon. Presentation of some of the basic elements involved in the interaction of the active human being. Includes sports and culture, sports in education, social stratification, race, and group dynamics.

*Prerequisites: Senior standing; [GES 140; GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Occasionally.*

**GES 453P • Ethics and Faith in the Workplace** 3 Credits

Practical application of what it takes to function as a Christian in today's workplace. Emphasis on the transition from college to a professional environment, focusing on personal maturity, workplace ethics, and lifelong Christian growth and service.

*Prerequisites: Senior standing; [GES 140; GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Occasionally interim.*

**GES 455P • Covenant Relationships: Marriage, Friendship, and Beyond** 3 Credits

An exploration of the relational dynamics of marriage, friendship, and Christian community within the context of the biblical concept of covenant relationship. Competing values within contemporary Western culture (e.g., individualism, hedonism) are explored and critiqued in light of the values associated with covenant community.

*Prerequisites: Senior standing; [GES 140; GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Occasionally.*

**GES 456P • What Good is Leisure? Living the Rest of Your Life** 3 Credits

Examines how individuals and cultures have regarded time outside of work and family responsibilities. Study of time devoted to religious exercise, liberal arts education, social responsibilities, respite from labor, and recreation. Explores personal alternatives and experiential learning. Readings from philosophy, literature, anthropology, theology, and contemplative traditions.

*Prerequisites: Senior standing; [GES 140; GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Occasionally.*

**GES 457 • Advanced Writing Studio for Multilingual Learners** 1 Credit

Students apply reading and writing strategies to writing lengthy assignments in advanced courses. Students are expected to take the studio in conjunction with a class that requires substantial writing and research. Instruction tailored to English Language Learners (international or immigrant students from non-English speaking backgrounds). Graded on an S/U basis .

*Offered: Fall, Spring.*

**GES 458PZ • Contemporary Wellbeing and Traditional Therapies in Taiwan** 3 Credits

Immersion experience in Taiwan explores holistic wellbeing with an emphasis on physical and spiritual health in the following areas: healthcare system, traditional Chinese therapies, and organic farming in indigenous communities. Students evaluate wellbeing from scientific, cultural, ethical, personal, Taoist and Christian perspectives.

*Prerequisites: Senior standing; [GES 140; GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Interim, odd # years.*

**GES 461P • Anthropology of Tourism: Travel, Culture Change and Globalization** 3 Credits

Nature, development, and impact of various forms of travel in relationship to culture change and globalization. Tourism as an important human activity and modern industry, but also an activity creating cultural hegemony, economic dependency, and identity crises. Evaluates benefits and costs of tourism in light of Christian ethics and values.

*Prerequisites: Senior standing; [GES 140; GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Occasionally.*

**GES 463P • Masculinity Past and Present** 3 Credits

Study of how men have understood their identities as men in different historical contexts, including the present. While strength, individuality, and aggression may seem paramount, many societies have emphasized moral ideas like piety, cooperation, and self-control. Encourages critical evaluation of how gender helps construct personal identity.

*Prerequisites: Senior standing; [GES 140; GES 160; THE 201; Comparative Systems (G) course] or [GES 246; Comparative Systems (G) course]. Offered: Interim.*

**GES 477 • Summer Internship Completion** 0 Credit**GRK 101 • Introductory Biblical Greek I** 4 Credits

Study of New Testament Greek for beginning students. Use of the New Testament to build a basic vocabulary and understand the elements of grammar and syntax.

*Offered: Fall.*

**GRK 102S • Introductory Biblical Greek II** 4 Credits

Continuation of the study of New Testament Greek for beginning students. Use of the New Testament to build a basic vocabulary and understand the elements of grammar and syntax.

*Prerequisites: GRK 101. Offered: Spring.*

**GRK 103 • Introduction to Biblical Greek 1A for Spanish Speakers** 2 Credits

Provides Spanish-speaking students (or non-native speakers or Spanish majors who have gained proficiency in the language) with a basic introduction to New Testament (Koine) Greek. Focus on vocabulary building, the comprehension of basic grammatical concepts and practice in translating passages from the Greek New Testament.

*Prerequisites: Consent of instructor. Offered: Fall, odd # years.*

**GRK 104 • Introduction to Biblical Greek 1B for Spanish Speakers** 2 Credits

Provides Spanish-speaking students (or non-native speakers or Spanish majors who have gained proficiency in the language) with a basic introduction to New Testament (Koine) Greek. Focus on vocabulary building, the comprehension of basic grammatical concepts and practice in translating passages from the Greek New Testament.

*Prerequisites: GRK 103 or Consent of instructor. Offered: Spring, even # years.*

**GRK 105 • Introduction to Biblical Greek IIA for Spanish Speakers** 2 Credits

Second half of a two-part introduction to NT (Koine) Greek. Greek II focuses on vocabulary building, the comprehension of basic grammatical concepts, and practice in translating passages from the Greek New Testament, with special focus on the latter.

*Prerequisites: GRK 104 or Consent of instructor. Offered: Fall, even # years.*

**GRK 106 • Introduction to Biblical Greek IIB for Spanish Speakers** 2 Credits

Second half of a two-part introduction to NT (Koine) Greek. Greek II focuses on vocabulary building, the comprehension of basic grammatical concepts, and practice in translating passages from the Greek New Testament, with special focus on the latter.

*Prerequisites: GRK 105 or Consent of instructor. Offered: Spring, odd # years.*

**HAS 110 • Introduction to Healthcare** 3 Credits

An introduction to various health professions and the healthcare system in the United States.

Emphasis on understanding the healthcare system, current issues in healthcare, and healthcare career paths. Development of healthcare literacy and navigating healthcare culture. Students examine education, training, and licensure and/or certification requirements for potential careers.

*Offered: Fall, Spring.*

**HAS 120 • First Aid 1 Credit**

Emphasizes the citizen responder as the first link in the emergency medical services system through the American Red Cross First Aid course. Includes CPR/AED for the Professional Rescuer.

*Offered: Fall, Spring.*

**HAS 130 • Personal and Community Health 3 Credits**

Focus on health promotion and the development of skills to make informed lifestyle decisions.

Examination of current information on major health issues including exercise, nutrition, stress, tobacco/alcohol/drug use, mental health, sexual health, environmental health, and disease. Emphasis on the importance of becoming an advocate for personal, family, and community health.

*Offered: Fall, Spring.*

**HAS 170 • Applied Nutrition 3 Credits**

Effects of nutrition on health, human performance and reduction of chronic disease throughout the lifespan. Topics covered also include disordered eating, weight management, supplements, and societal and cultural issues related to nutrition.

*Offered: Fall, Interim, Spring.*

**HAS 205QA • Self-expression through Dance 2 Credits**

A wide variety of rhythmic movement and dance that enhance creative expression, fitness development, and understanding of, and appreciation for, a variety of dance forms. Students think and move creatively and develop rhythmic skills through participation in aerobic dance, square dance, ethnic dance, and ballroom dance.

*Offered: Occasionally.*

**HAS 247 • Motor Development and Learning 3 Credits**

The mechanisms of human motor learning and development with special emphasis on the physical and psychological principles involved in the acquisition and maintenance of motor skills.

*Prerequisites: BIO 214/BIO 215. Offered: Fall, Spring.*

**HAS 250M • Statistics and Research Methods in Applied Health Sciences 3 Credits**

Descriptive statistics. Discrete probability spaces, random variables, and distributions. Normal distribution, statistical inference, estimation, hypothesis testing, linear regression, correlation analysis, and analysis of variance. Applications to healthcare and Institutional Review Board (IRB) human-based research projects.

*Offered: Fall, Spring. Special Notes: Students may not receive credit for both HAS 250M and PSY 230M. HAS 250M will not count toward the psychology minor Elective credit requirement.*

**HAS 303KZ • Integrative Medicine in a Cross-Cultural Setting 3 Credits**

Theories and practices of integrative medicine that promote quality health and wellness. Models from ancient Mayan practices to modern Western medical practices. Scientific theories include ethnobotany, psychoneuroimmunology, integrative nutrition, and biofeedback. Practices may include therapeutic touch, yoga, mindfulness, contemplative prayer, nature therapy, and healing effects of physical activity and movement.

*Prerequisites: Laboratory Science (D) course and Mathematics (M) course. Offered: Occasionally interim.*

**HAS 314 • Foundations, Administration, and Evaluation of Health Education 3 Credits**

Introduces the health education and health promotion professions, including historical, philosophical, and theoretical foundations of health education. Explores theories of behavior change, the responsibilities of health educators, and investigates career opportunities. Examines the theoretical and practical basis for planning, implementing, administering, and evaluating health education programs.

*Prerequisites: HAS 130. Offered: Spring.*



**HAS 318 • Epidemiology 2 Credits**

Distribution of health and disease in populations and its influential or determining factors. Examines methodological and analytical techniques to summarize health-related indicators in populations. Focuses on tools and epidemiologic methods used to identify, prevent, and control disease and health-related conditions. Reviews the epidemiology of many major diseases and health-related conditions.  
*Prerequisites: HAS 130; BIO 104/104D or BIO 122/122D; BIO 238/239 or (BIO 214/215; BIO 216/217). Offered: Fall, even # years.*

**HAS 322 • Methods and Materials for Adapted Physical Activity 2 Credits**

Resources and methodology for teaching a wide variety of activities to individuals with disabilities. Resources include understanding of DAPE literature, family systems, and community services as they relate to the transition process. Methodology includes planning lessons, incorporating assistive devices, and utilizing assessment tools.  
*Prerequisites: EDU250 and HAS320. Offered: Fall 2019, 2021.*

**HAS 325 • Prevention and Care of Athletic Injuries 3 Credits**

Techniques for prevention and care of athletic injuries. Practical experience in the athletic training room.  
*Prerequisites: HAS 120; BIO 214/215 or BIO 238/239. Offered: Fall.*

**HAS 331 • Organization and Administration of Athletic Training 3 Credits**

Methods for planning, coordinating, and supervising all administrative components of an athletic training program pertaining to healthcare, financial management, training room management, personnel management, and public relations.  
*Prerequisites: HAS 325. Offered: Fall.*

**HAS 335 • Clinical Experience in Athletic Training I 1 Credit**

Clinical experiences that provide opportunities to practice, refine, and master previously learned psychomotor and cognitive athletic training competencies.  
*Prerequisites: HAS 325 and Admission to athletic training program. Offered: Fall.*

**HAS 336 • Clinical Experience in Athletic Training II 1 Credit**

Clinical experiences that provide opportunities to practice, refine, and master previously learned psychomotor and cognitive athletic training skills.  
*Prerequisites: HAS 335. Offered: Interim.*

**HAS 337 • Clinical Experience in Athletic Training III 1 Credit**

Clinical experiences that provide opportunities to practice, refine, and master previously learned psychomotor and cognitive athletic training competencies.  
*Prerequisites: HAS 336. Offered: Spring.*

**HAS 345 • Disease and Injury Control 2 Credits**

Analysis of chronic diseases, infectious diseases, and injuries from both personal and societal perspectives. Focuses on the prevention, identification, and control of diseases and injuries. Examines the relationship of health promotion and lifestyle to disease and injury.  
*Prerequisites: HAS 120 and HAS 130. Offered: Fall, odd # years.*

**HAS 360 • Advanced Emergency Care 3 Credits**

A comprehensive course for the healthcare practitioner who must initially evaluate and stabilize a physically active individual in a trauma situation. Teaches rapid assessment, resuscitation, packaging, and transportation of the ill or injured.  
*Prerequisites: HAS 325 or HAS 120. Offered: Spring.*

**HAS 370 • Functional Human Nutrition 3 Credits**

Prepares students in functional nutrition, emphasizing human biochemistry and cellular energetics. Explores the relationship of nutrients to health pathologies, including metabolic syndrome, obesity, diabetes, cardiovascular disease and cancer. Practical experience with nutritional interventions for health optimization and disease management. Emphasis in biochemical individuality for positive, nutritional modulation in oxidative phosphorylation.  
*Prerequisites: BIO 120/120D or BIO 122/122D or CHE 113/113D; HAS 170. Offered: Fall, Spring.*

**HAS 375 • Biomechanics 3 Credits**

Mechanics of sports performance and anatomical kinesiology. Newtonian mechanics, types of motion, application of force, maintenance of equilibrium, and fluid dynamics.

*Prerequisites:* BIO 214/215, BIO 238/239; *Mathematics (M) course.* Offered: Fall, Spring. *Special Notes:* PHY 102/102D and HAS 247 are recommended prerequisites.

**HAS 379 • Integrative Human Physiology 3 Credits**

Examination of how normal human physiological function (homeostasis) is altered, and subsequently restored, in response to various forms of acute and chronic stress.

*Prerequisites:* BIO 214/215 and BIO 216/217. Offered: Fall, Spring.

**HAS 393 • Literature Review in Biokinetics 1 Credit**

Students develop and work on their research project and IRB. Students will use literature to formulate an independent project. Completion of IRB is expected. Seminar includes discussions of careers, graduate and medical school application and entrance examines.

*Corequisites:* Concurrent registration in HAS 398 and HAS 399. Offered: Spring.

**HAS 398 • Physiological Assessment Laboratory 1 Credit**

Laboratory experience accompanying HAS 399.

*Prerequisites:* HAS 379, (may be taken concurrently). *Corequisites:* Concurrent registration in HAS 393 and HAS 399 is required. Offered: Spring.

**HAS 399 • Physiological Assessment 3 Credits**

Applied techniques in the measurement of exercise bioenergetics, neuromuscular performance, cardiorespiratory fitness, and other health components. Particular emphasis is given to the knowledge necessary for exercise testing certifications and development of fitness testing skills.

*Prerequisites:* HAS 379 (may be taken concurrently). *Corequisites:* Concurrent registration in HAS 393 and HAS 398 is required. Offered: Spring.

**HAS 436 • Clinical Experience in Athletic Training IV 1 Credit**

Clinical experiences at an off-campus affiliate site designed to provide athletic training students the opportunity to practice, refine, and master previously learned psychomotor and cognitive athletic training competencies.

*Prerequisites:* HAS 337 and Senior standing. Offered: Fall, Interim, Spring.

**HAS 439 • Clinical Experience in Athletic Training V 3 Credits**

Acquire 320+ hours of athletic training experience working with a Bethel University athletic team for a complete season of competition, under the supervision of an athletic training program preceptor.

*Prerequisites:* HAS 337. Offered: Fall, Interim, Spring.

**HAS 440 • Advanced Training for Human Performance 3 Credits**

Prepares students to systematically design training and conditioning programs to enhance the function and capacity of the musculoskeletal and cardiovascular systems. This course utilizes periodization and mathematical models with expected physiological and neuromuscular adaptations to maximize human performance in sport, pre-habilitation, public health and special populations.

*Prerequisites:* BIO 216/217 and BIO 238/239 or Consent of instructor. Offered: Fall.

**HAS 445 • Advanced Laboratory Techniques in Biokinetics 3 Credits**

Collection, interpretation, and prescription of human subjects data will be conducted. Activities focus on how to work in a dynamic laboratory and refine and master previously learned assessment skills.

*Prerequisites:* HAS 399. Offered: Fall.

**HAS 450 • Physiology and Intervention in Disabilities and Chronic Disease 3 Credits**

Synthesizes content from various foundational classes, the skills of the assessment lab, and guidance from a practicing clinician to foster in-depth exploration of various topics. Reviews the anatomy and physiology of the nervous system and investigates neurologic atypical and/or pathological conditions. Independent and team learning, hands-on labs, and experiential observations.

*Prerequisites:* HAS 375 and HAS 399. Offered: Fall, Spring.

**HAS 478 • Senior Seminar in Athletic Training** 3 Credits

A capstone course in which students study and implement competencies in professional development and responsibility, as well as evidence-based medicine. Students complete and present an in-depth, evidence-based medicine research project. Aids student preparation for the Board of Certification Exam in Athletic Training.

*Prerequisites: Admission to the athletic training education program. Offered: Spring.*

**HAS 481 • Internship in Human Kinetics and Applied Health Science** 1-4 Credits

A practical experience in an off-campus setting in applying academic knowledge and professional skills under the dual supervision of a faculty member and a practicing professional. Designed by student in consultation with a faculty member.

*Prerequisites: HAS 399 or Consent of instructor. Special Notes: Application must be made at least one semester prior to the intended experience. Offered: Fall, Spring.*

**HAS 494 • Biokinetics Research** 1 Credit

Students develop and work on their senior research project. Students will complete data collection. Students will continue the discussion on "life after Bethel." In addition, social networking and public speaking and presentations will be explored.

*Prerequisites: HAS 393. Offered: Fall.*

**HAS 495 • Biokinetics Symposium** 1 Credit

Students prepare and deliver formal presentation and manuscripts of their research results. Weekly discussions are organized on current research topics. This course will continue the discussion of "life after Bethel" .

*Prerequisites: HAS 494. Offered: Spring.*

**HIS 200L • American Civilization** 3 Credits

An exploration of American history from early Native American communities to the present. Examination of major social, cultural, economic, political, and religious change over time in the American experience.

*Prerequisites: GES 130 and GES 160 (may be taken concurrently) or GES 244 (may be taken concurrently). Offered: Fall.*

**HIS 205U • History of China, Japan, and Korea** 3 Credits

History and cultures of East Asia. Religion; economic development and trade; and family, social, and political organization. Primary focus on China, Korea, and Japan.

*Prerequisites: GES 130 (may be taken concurrently) or GES 244 (may be taken concurrently). Offered: Occasionally.*

**HIS 207U • Latin American Civilizations** 3 Credits

History of cultures and societies of Latin America. Social, religious, geographic, economic, and political history. The Americas before European contact, impact of European conquest and colonization, struggles for independence and national and regional identity, relations with the United States, and Latin America's place in the global economy.

*Prerequisites: GES 130 (may be taken concurrently) or GES 244 (may be taken concurrently). Offered: Occasionally.*

**HIS 210U • Minorities in America** 3 Credits

History of multicultural America from the colonial period to the present. Focuses on one of the following cultures: Native American, African-American, Asian, Hispanic, Jewish-American, or Muslim. Examines themes such as family, society, arts, education, work, slavery, discrimination, immigration-assimilation, democracy, social justice, religion, and women's concerns.

*Prerequisites: GES 130 (may be taken concurrently) or GES 244 (may be taken concurrently). Offered: Occasionally.*

**HIS 212U • History of Islam 3 Credits**

Islam from its inception and development to Islam as it is practiced today. Students interact with members of the Islamic community in Minnesota in an attempt to understand Islam from the personal experiences of Muslims. Contemporary issues and controversies are examined through the lens of the Muslim experience throughout history.

*Prerequisites: GES 130 (may be taken concurrently) or GES 244 (may be taken concurrently). Offered: Spring. Special Notes: Carries cross-credit in religious studies.*

**HIS 216L • American Constitutional History 3 Credits**

Examination of the origins and development of American constitutional ideas and institutions from the colonial period to the present. Particular attention paid to the historical connections between major constitutional cases and broader social, political, economic, and cultural trends.

*Prerequisites: GES 130 and GES 160 (may be taken concurrently) or GES 244 (may be taken concurrently). Offered: Interim or Spring. Special Notes: Carries cross-credit in political science.*

**HIS 223L • History of the American West 3 Credits**

Examines the history of the American West from 1492 to the present. Particular attention to the interaction and competition of different cultures; the construction of political, economic, and religious institutions; and the physical environment, its representations, and its symbolic importance in the broader context of American history.

*Prerequisites: GES 130 and GES 160 (may be taken concurrently) or GES 244 (may be taken concurrently). Offered: Interim, odd # years.*

**HIS 230L • World War I 3 Credits**

An experiential study of the history of the First World War built around travel in England, Belgium, France, and Germany, including visits to battlefield sites, cemeteries, memorials, and museums. Students will learn what it was like to experience and remember total war and to appreciate this particular conflict's larger significance.

*Prerequisites: GES 130 and GES 160 (may be taken concurrently) or GES 244 (may be taken concurrently). Offered: Occasionally.*

**HIS 231L • World War II 3 Credits**

The causes, course, conclusion, and legacy of World War II, particularly as experienced by the people of China, France, Germany, Great Britain, Japan, Russia, and the United States. Key topics include collaboration and resistance, genocide, the war in film, remembrance and forgetting, and the social and economic impacts of the war.

*Prerequisites: GES 130 and GES 160 (may be taken concurrently) or GES 244 (may be taken concurrently). Offered: Spring, odd # years.*

**HIS 236UZ • Medieval Worlds: Cultures and Beliefs in North Africa and Europe 3 Credits**

On-site investigation of medieval North Africa and Europe. Studies the impact and legacy of Islamic culture, politics, philosophy, and religious thinking, particularly how Christians, Jews, and Muslims interacted. Themes include the legacy of Islamic philosophical thought, the development of medieval Christianity, and the impact of religious ideology on political conflicts.

*Prerequisites: GES 130 or GES 244. Offered: Interim, even # years. Special Notes: Carries cross-credit with philosophy.*

**HIS 241L • Revolution and Political Development 3 Credits**

Theory and process of modernization, with special emphasis on the Anglo-American historical experience; examination of U.S. efforts to promote democracy internationally in Europe, Asia, and the Middle East since World War II.

*Prerequisites: GES 130 and GES 160 (may be taken concurrently) or GES 244 (may be taken concurrently). Offered: Occasionally interim. Special Notes: Carries cross-credit in political science.*

**HIS 252L • History and Politics of Sports 3 Credits**

The history of sports in the modern era, with particular attention paid to sports' connections to international politics and public policy and to sports as a mirror for the history of race, gender, education, business, labor, and religion in the United States.

*Prerequisites: GES 130 and GES 160 or GES 244. Offered: Spring, even # years.*

**HIS 290 • Introduction to History** 3 Credits

An introduction to the methodology and philosophy of history, with particular emphases on preparing students for historical research and writing, on the public uses of history, and on the discipline as a Christian vocation.

*Offered: Spring.*

**HIS 302 • History of Sexuality in the United States** 4 Credits

An examination of the history of sexuality from the colonial period to the present. Particular attention to the impact of religion, culture, government, science, and economics on the formation of sexual mores and identities, and the relationship between sexuality and gender, race, ethnicity, age, and class.

*Prerequisites: Sophomore standing. Offered: Spring, even # years.*

**HIS 305G • The Cold War** 3 Credits

The Cold War as an event in international history, studied from the perspective of the United States, the Soviet Union, China, Europe, and the Third World. Introduces students to ongoing historical debates and to the sources historians use in those debates.

*Prerequisites: [GES 130; GES 160; Contemporary Western Life and Thought (L) course; World Cultures (U) course] or [GES 244; World Cultures (U) course]. Special Notes: Carries cross-credit in political science.*

*Offered: Fall, even # years.*

**HIS 307 • The American Civil War** 4 Credits

A history of the American Civil War: causes, course of the war, and short- and long-term consequences. Includes, but is not limited to: political, military, social, cultural, economic, religious, and environmental events of the American Civil War.

*Prerequisites: Sophomore standing. Offered: Occasionally.*

**HIS 310 • Near Eastern and Greek Civilizations** 4 Credits

Roots of Western civilization in the Near East and Greece. World of the Mesopotamian Empire; Egypt of the pharaohs; and Greece of Homer, Socrates, and Alexander. Cultural and historical context for understanding biblical literature.

*Prerequisites: GES 130 or GES 145; Sophomore standing. Offered: Fall, even # years.*

**HIS 311 • Roman Civilization** 4 Credits

Development of the Romans from their origins through their achievement of a world empire to the conversion of the Emperor Constantine. politics, government, literature, art, philosophy, and religion as well as the emergence and growth of the Christian church. Continuing heritage of Rome in our contemporary world.

*Prerequisites: GES 130 or GES 145; Sophomore standing. Offered: Spring.*

**HIS 312 • Medieval Europe** 4 Credits

Historical developments in Western Europe from the reign of Constantine to the era of Petrarch (A.D. 325-1350). Broad cultural, economic, political, social, and religious patterns, with emphasis on the development of the church in its social context.

*Prerequisites: GES 130 or GES 145; Sophomore standing. Offered: Occasionally.*

**HIS 320K • History and the Human Environment** 3 Credits

Environmental and geographical background of human history. Agriculture, climate, energy resources, transportation, and diseases, especially as they have influenced the historical development of Western Europe and North America. Implications for current and future environmental concerns.

*Prerequisites: Laboratory Science (D) course and Mathematics (M) course. Offered: Spring. Special Notes: Carries cross-credit in geography.*

**HIS 324G • Human Rights in International History** 3 Credits

International and comparative exploration of how human rights have been defined, violated, and protected. Historical topics (e.g., abolition of the slave trade, social reform and Christian missions, genocides of the 20th century) as well as contemporary issues. Includes a service-learning project.

*Prerequisites: [GES 130; GES 160; Contemporary Western Life and Thought (L) course; World Cultures (U) course] or [GES 244; World Cultures (U) course]. Special Notes: Carries cross-credit in political science.*

*Offered: Occasionally.*

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### **HIS 328G • Muslim Women in History 3 Credits**

Global survey of the lives of Muslim women from the 7th century to the present. Examination of how Muslim women's lives have historically been shaped by their social context, with particular attention to religious interpretation and expression, culture, ethnicity, and geographic location.

*Prerequisites:* [GES 130; GES 160; *Contemporary Western Life and Thought (L) course*; *World Cultures (U) course*] or [GES 244; *World Cultures (U) course*]. *Offered:* Interim. *Special Notes:* Carries cross-credit in religious studies.

### **HIS 329 • African Politics 3 Credits**

Consideration of political development in Africa from the pre-colonial era through the present, focusing on changes in political regimes through time, the nature of economic struggles, and sources of violent conflict.

*Prerequisites:* POS 202U or POS 205 recommended. *Offered:* Spring. *Special Notes:* Carries cross-credit in political science.

### **HIS 330 • U.S. Business History 4 Credits**

An examination of the role commercial enterprise has played in shaping American politics, society, and culture since the country's founding. Provides an overview of the emergence of an integrated, national marketplace, the modern corporation, and changing governmental policy along with intersections of race, ethnicity, class, and gender in working America.

*Prerequisites:* Sophomore standing. *Offered:* Spring, odd # years.

### **HIS 354 • Modern Europe 4 Credits**

The social, political, diplomatic, intellectual, and religious history of Europe since 1750. Key themes include political reforms and revolutions, gender roles, industrialization, migration, nationalism, imperialism, total war, totalitarianism, genocide, decolonization, and secularization.

*Prerequisites:* GES 130 or GES 246; Sophomore standing. *Offered:* Fall, odd # years.

### **HIS 356 • Modern Middle East 4 Credits**

Political, social, religious, economic, and cultural history of the Middle East since 1800. Particular attention is paid to colonialism, globalization, war, gender roles, revolution, and reform. Controversies such as the Arab/Israeli conflict, the Islamic Revolution in Iran, Saddam Hussein's Iraq, and the U.S. war on terror are discussed.

*Prerequisites:* Sophomore standing. *Offered:* Fall. *Special Notes:* Carries cross-credit in political science.

### **HIS 360 • Classics in Western Political Philosophy 4 Credits**

Selected political theorists. Such writers as Aristotle, Calvin, early Christian writers, Locke, Luther, Machiavelli, Marx, Niebuhr, and Plato. Concentrates on primary sources.

*Prerequisites:* One course in political science, philosophy, or history. *Offered:* Fall, odd # years. *Special Notes:* Carries cross-credit in philosophy and political science.

### **HIS 370 • Topics in American History 3-4 Credits**

Selected topics in American history. Specific topic to be announced in advance of registration.

*Prerequisites:* Sophomore standing, Consent of instructor. *Repeatable course:* The course may be repeated when a different topic is emphasized. *Offered:* Occasionally.

### **HIS 371 • Topics in European History 3-4 Credits**

Selected areas, themes, and periods of European history. Specific topic is announced in advance of registration.

*Prerequisites:* GES 130 or GES 246; *Contemporary Western Life and Thought (L) course*. *Repeatable course:* The course may be repeated when a different topic is emphasized. *Offered:* Occasionally.

### **HIS 372 • Topics in Global History 3 Credits**

Selected themes, periods, and areas, focusing on Asia, Africa, or Latin America. Specific topic to be announced in advance of registration.

*Prerequisites:* GES 130 or GES 246; *Contemporary Western Life and Thought (L) course* or GES 246; *World Cultures (U) course*. *Repeatable course:* May be repeated when a different topic is emphasized. *Offered:* Occasionally.

**HIS 400 • Research in History** 3 Credits

An opportunity to work with a member of the history faculty on a major research project.

*Prerequisites: Major in history; Coursework appropriate to the area of research; Invitation of supervising faculty member; Consent of department. Offered: Occasionally. Special Notes: No student may take more than six credits in HIS 400 and/or directed study.*

**HIS 481 • Internship in History** 1-4 Credits

A practical experience in applying academic skills in an off-campus setting under the dual supervision of a history faculty member and a practicing historian or related professional. Designed by student in consultation with history department faculty.

*Prerequisites: Major in history. Offered: Occasionally.*

**HIS 491 • Applied Humanities Seminar** 4 Credits

An interdisciplinary, experiential capstone course in which students draw on their studies in history, philosophy, political science, or the digital humanities in order to study a major challenge in contemporary society, analyzing causes, effects, and existing responses, and then work together to propose new responses to it.

*Prerequisites: Senior standing and Major in one of the following programs: history, philosophy, political science, digital humanities, international relations, business political science, or social studies education 5-12. Offered: Fall, Spring.*

**HON 160 • Pietas Seminar I** 3 Credits

Introduction to the value of a liberal arts education in the Christian tradition and to key facets of the Pietas Program. While exploring a specific topic of interest, the seminar promotes the establishment of community among students and faculty. Instruction and practice in writing, as well as preparing and delivering oral presentations, in a manner that addresses the strengths and needs of Pietas Program students.

*Prerequisites: Admission to the Pietas Honors Program. Special Notes: This course fulfills the Inquiry Seminar (GES 160) General Education requirement. Offered: Fall, Spring.*

**HON 300G • Pietas Seminar II** 3 Credits

Analysis and evaluation of community in varying contexts. Investigation of different models of community through reflection, experiential learning, film, fiction, and non-fiction.

*Prerequisites: HON 160; Admission to the Pietas Honors Program; [GES 130; GES 160; Contemporary Western Life and Thought (L) course; World Cultures (U) course] or [GES 244; World Cultures (U) course]. Offered: Spring.*

**HON 305K • Pietas Seminar III** 3 Credits

Contemporary and historical topics are chosen to illustrate societal and cultural interactions with concurrent developments in science and technology. Examples of personal and corporate decision-making processes are stressed, thereby working toward a goal of preparation and motivation for responsible citizenship.

*Prerequisites: Laboratory Science (D) course and Mathematics (M) course; Admission to the Pietas Honors Program. Offered: Fall.*

**HON 464P • Pietas Seminar IV** 3 Credits

Seniors work collaboratively to research, discuss, evaluate, and address an interdisciplinary issue of contemporary civic importance. Students will have the opportunity to synthesize work completed in other Honors courses and projects as well as reflect on the role of faith in the life of Christian scholarship.

*Prerequisites: HON 160; HON 300G; HON 305K; Senior standing and GES 140; GES 160; THE 201 or GES 246. Offered: Spring.*

**LEA 100 • Emerging Leaders** 3 Credits

An introduction to leadership with a focus on effective characteristics and practices of leadership theories, leadership styles, core leadership competencies, individual self-discovery, management, followership, and integration of faith and leadership. Opportunities given for students to identify, clarify, and develop individual leadership skills and abilities.

*Offered: Summer.*

**LEA 200 • Leading Teams** 3 Credits

Explores effective leadership of teams, focusing on how teams interact and how effective leaders navigate opportunities and challenges of leading teams. Opportunities for creating teams in class are provided for students to explore the dynamics of team development and to grow and develop their own team leadership skills.

*Prerequisites: LEA 100. Offered: Summer.*

**LEA 300 • Leading Organizations** 3 Credits

Leadership within organizational contexts; how organizations operate and provide opportunities and challenges for leaders; demands of collaborative leadership; organizational change and leaders' means of guiding it; leadership within Christian organizations and contexts.

*Prerequisites: LEA 200. Offered: Summer.*

**LEA 475 • Leadership Studies Seminar** 3 Credits

Students develop their individual, team, and organizational leadership capacity. Students explore the practical aspects of leadership by applying theories and concepts from their discipline specific academic experiences in a service learning experience. Students complete a comprehensive and strengths-based leadership branding experience to capture their development as a leader.

*Prerequisites: LEA 300 (may be taken concurrently) and Consent of instructor. Offered: Summer.*

**LIN 210Z • Introduction to Second Language Acquisition** 3 Credits

Study of current research and theories of second language acquisition in children and adult learners. Examination of second language learning processes and variables that affect second language acquisition. Classroom strategies include differentiating instruction for all language learners. Service learning experience required.

*Offered: Fall, Spring.*

**LIN 300 • Introduction to Linguistics** 3 Credits

A study of three major areas of linguistics: 1) articulatory phonetics, phonology, morphology, and syntax (how units of sound are structured into larger units, forming words and sentences); 2) sociolinguistics (how language functions in society); and 3) psycholinguistics (how children and adults acquire language).

*Prerequisites: Two college semesters of a second language or equivalent proficiency. Offered: Fall.*

**MAT 101M • Mathematics for the 21st Century** 3 Credits

Mathematical ideas that a liberally educated person should be familiar with in order to function well in a technological society.

*Prerequisites: Two years of high school algebra, including logarithms and exponential functions. Offered: Fall, Spring.*

**MAT 102M • Creative Problem Solving** 3 Credits

An opportunity to learn to use creative thinking and intuition to gain confidence in understanding and solving some intriguing problems in mathematics.

*Prerequisites: High school algebra and geometry. Offered: Interim.*

**MAT 123M • Precalculus** 3 Credits

Mathematics topics required for MAT 124M or further study in the natural sciences. Equations and inequalities; graphs of functions and relations; polynomial, rational, exponential, logarithmic functions; trigonometric functions, identities, equations, and applications.

*Prerequisites: Two years of high school algebra and Satisfactory completion of the Math department placement requirements. Offered: Fall, Spring. Placement Exam Required, see: <https://www.bethel.edu/undergrad/academics/math-cs/placement-exams>*

**MAT 124M • Calculus 1** 4 Credits

A mathematical foundation for future college courses and beyond. Introduces the concepts and methods of the derivative and the integral, demonstrating how they are applied in real-world modeling situations. Topics are examined graphically, numerically, and algebraically, including using a symbolic computer algebra system to aid with understanding.

*Prerequisites: MAT 123M or Equivalent high school or college course(s) and Satisfactory completion of Mathematics and Computer Science department placement requirements. Offered: Fall, Spring.*



**MAT 125 • Calculus 2 4 Credits**

A continuation of the equipping of students with tools for effective problem solving. Study of integration, sequences and series, and introduction to differential equations and approximation techniques. Each topic is approached from several viewpoints (graphical, numerical, algebraic) to involve students with different learning styles.

*Prerequisites:* MAT 124M with C- or higher. *Offered:* Fall, Spring.

**MAT 201M • Mathematics for Elementary Education 1 3 Credits**

Introduction to problem solving; patterns and sequences; systems of numeration; sets and logic; concepts, operations, and algorithms for each subset of the real numbers; elementary number theory; concepts and applications of ratios, proportions, and percents.

*Prerequisites:* Major in elementary education; minimum ACT mathematics score of 24, minimum SAT mathematics score of 560 or satisfactory completion of Bethel's online Math for Elementary Education prep course; 15 college-level credits completed. *Special Notes:* MAT 201M may not be used to fulfill the requirements for a major or minor in mathematics. *Offered:* Fall, Spring. *Placement Required, see:* <https://www.bethel.edu/undergrad/academics/math-cs/placement-exams>

**MAT 202 • Mathematics for Elementary Education 2 3 Credits**

Problem-solving and reasoning strategies; algebraic expressions, equations, and functions; data analysis, statistics, combinations/permutations, and probability; concepts and applications of two- and three-dimensional geometry and measurement.

*Prerequisites:* Grade of C or higher in MAT 201M. *Offered:* Fall, Spring. *Special Notes:* MAT 202 may not be used to fulfill the requirements for a major or minor in mathematics.

**MAT 207M • Statistical Analysis 3 Credits**

Descriptive and inferential statistics. Specific topics include discrete probability spaces, random variables, distributions, normal distribution, estimation, hypothesis testing, linear regression, correlation analysis. Selected topics could include analysis of variance, goodness-of-fit, and contingency tables. Applications to business, economics, and science.

*Offered:* Fall, Interim, Spring. *Special Notes:* Students may not receive credit for both MAT 207M and PSY 230M. MAT 207M will not count toward the psychology minor Elective credit requirement.

**MAT 209 • Financial Mathematics 3 Credits**

Topics and problem-solving practice for the actuarial exam in financial mathematics. Theory of interest topics include: time value of money, annuities, cash flows, amortized loans, bonds, portfolios, and immunization. Financial economics topics include: derivatives, options, forwards and futures, swaps, hedging, and investment strategies.

*Prerequisites:* MAT 125 with C- or higher. *Offered:* Occasionally.

**MAT 211 • Linear Algebra 3 Credits**

Linear systems, matrices, vectors and vector spaces, linear transformations, inner products, norms, eigenvalues and eigenvectors, orthogonality, and applications. Provides a foundation for many areas of study in mathematics, computer science, engineering, and science.

*Prerequisites:* MAT 125 with C- or higher or MAT 241 with C- or higher. *Offered:* Spring.

**MAT 222 • Differential Equations 3 Credits**

Analytic solution methods for ordinary differential equations, including special methods for first- and second-order systems, and transformation methods. Analysis of systems of differential equations using linear algebra and qualitative phase plane techniques.

*Prerequisites:* MAT 125 with C- or higher. *Offered:* Spring. *Special Notes:* MAT 223 is a preferred prerequisite.

**MAT 223 • Multivariable Calculus 3 Credits**

Calculus of parametric curves: arc length, curvature, motion. Calculus of real functions on  $\mathbb{R}^n$ : partial and directional derivatives, multiple integration, optimization techniques (including Lagrange multipliers). Calculus of vector fields: curl, divergence, line and surface integrals, and fundamental theorems.

*Prerequisites:* MAT 125 with C- or higher. *Offered:* Fall, Spring.

**MAT 224 • Differential Equations with Linear Algebra** 4 Credits

Analytic, numerical, qualitative, and linear algebra-based solution methods for ordinary differential equations, along with relevant computations and theoretical concepts from linear algebra as needed, including: matrix operations, vector spaces, basis, dimension, change of basis, and diagonalization.

*Prerequisites:* MAT 125 with C- or higher. *Special Notes:* Students may not receive credit for both MAT 224 and MAT 222. *Offered:* Fall.

**MAT 241 • Discrete Mathematics** 3 Credits

Covers a collection of topics useful to mathematics and computer science majors. The unifying factor is that topics deal mainly with finite collections of mathematical objects (graphs, trees, finite state machines, etc.). Also includes examination of sets, logic, Boolean algebras, proof techniques, algorithm analysis, counting, and recursion.

*Prerequisites:* MAT 124M with C- or higher. *Offered:* Fall.

**MAT 300 • Numerical Analysis** 3 Credits

A study of accuracy, efficiency, and robustness of algorithms for numerical approximations of roots, fixed points, functions (interpolation), integration, and solutions of ordinary differential equations. Other topics may include numerical linear algebra.

*Prerequisites:* MAT 211 with C- or higher, MAT 222 with C- or higher, or MAT 224 with C- or higher. *Offered:* Spring, odd # years. *Special Notes:* Students may not receive credit for both MAT 300 and MAT344.

**MAT 310 • Abstract Algebra** 4 Credits

Study of groups, rings, fields, and applications of these algebraic structures from a firm axiomatic foundation with a strong emphasis on properly written proofs.

*Prerequisites:* MAT 211 with C- or higher. *Offered:* Spring. *Special Notes:* MAT 241 is a strongly recommended prerequisite.

**MAT 330 • Probability and Statistics** 3 Credits

Discrete and continuous probability spaces, distribution and density functions, random variables, sampling, expectation, estimation, and hypothesis testing.

*Prerequisites:* MAT 125 with C- or higher. *Offered:* Fall.

**MAT 331 • Applied Statistics** 3 Credits

Linear and multilinear regression. Factor analysis, including analysis of variance and experimental design.

*Prerequisites:* MAT 330 with C- or higher or Consent of instructor. *Offered:* Spring, even # years.

**MAT 351 • Modern Geometry** 3 Credits

A survey of informal and formal geometric topics. Investigation of concepts, structure, proof, Euclidean, non-Euclidean, and transformational geometry.

*Prerequisites:* MAT 241 with C- or higher or Consent of instructor. *Offered:* Fall, even # years. *Special Notes:* Designed for students seeking licensure to teach math in grades 5-12.

**MAT 376 • Operations Research** 4 Credits

Mathematical techniques used in systems analysis, including linear programming, simulation techniques, and other topics such as transportation models, integer programming, and network analysis.

*Prerequisites:* COS 105 with C- or higher or COS 205 with C- or higher; MAT 211 with C- or higher or MAT 224 with C- or higher. *Offered:* Fall, odd # years.

**MAT 422 • Real Analysis** 3 Credits

Elementary set theory, properties of real numbers, functions of real variables, sequences, series, differentiation, Riemann integration, and introduction to topological concepts.

*Prerequisites:* MAT 223 with C- or higher and MAT 310 with C- or higher. *Offered:* Fall.

**MAT 425 • Topics in Mathematics** 3 Credits

A seminar designed to provide an in-depth experience with a specific field of mathematics. Topics vary from semester to semester and include logic, number theory, dynamical systems, chaos and fractals, complex analysis, partial differential equations and Fourier analysis, intermediate probability and statistics, combinatorics, and topology.

*Corequisites:* MAT 310 with C- or higher or Consent of instructor. Offered: Spring, odd # years.

**MAT 499 • Senior Seminar** 3 Credits

A short history of mathematics' major transition points, overview of foundations of mathematics, axiomatic structures, and philosophies of mathematics in relation to Christian faith.

*Prerequisites:* MAT 330 with C- or higher and one of the following: MAT 310 with C- or higher, MAT 422 with C- or higher. Offered: Interim.

**MIN 200 • Foundations of Ministry** 3 Credits

Introduction to the theology and practice of ministry. Presents a conceptual, theological, and biblical understanding of ministry. Opportunity to develop a usable, working philosophy of ministry and a model for critical thinking about the practice of contemporary ministry.

*Prerequisites:* BIB 101 (may be taken concurrently). Offered: Fall.

**MIN 210 • Adolescent Development and the Family** 3 Credits

Understanding child/adolescent development in the physical, cognitive, moral, psycho-social, cultural, and spiritual arenas, along with examining family social systems and family dynamics. Focus on application to practical ministry.

*Prerequisites:* MIN 200. Offered: Fall, odd # years.

**MIN 310Z • Conflict, Reconciliation, and the Church** 3 Credits

Ministry in an urban, multicultural context. Emphasizes biblical, theological, and historical themes of reconciliation, diversity, poverty, and justice. Experiences include homeless shelters, youth ministry centers, spiritually formative practices, and the religious and cultural life of a major city.

*Prerequisites:* THE 201; Junior standing. *Special Notes:* Carries cross listing in Biblical and Theological Studies. Offered: Interim.

**MIN 320 • Spiritual and Faith Formation** 3 Credits

Dynamics of spiritual development and faith formation. Review of biblical, historical, and theological models as well as contemporary social science research. Emphasizes the spiritual and faith formation of both ministers and those to whom they minister, and the interrelatedness of evangelism and discipleship as well as counseling and referral.

*Prerequisites:* MIN 200. Offered: Spring.

**MIN 328 • Missional Theology** 3 Credits

Explores the doctrine of the Trinity and its connections to the missio Dei (mission of God) and how God's mission influences our thinking and practice as the church, with a special emphasis on the context of North America.

*Prerequisites:* BIB 101 or THE 201; Junior standing. Offered: Spring.

**MIN 330 • Teaching in Ministry Contexts** 3 Credits

Preparation and delivery of presentations enabling students to teach effectively in various settings. Students develop their theology and philosophy of teaching and learning. Improving skills in teaching small and large groups, facilitating discussion, adapting curriculum to audiences and contexts, and self-analysis. Emphasis on biblical themes of reconciliation, diversity, and justice.

*Prerequisites:* MIN 200. Offered: Fall, even # years.

**MIN 350 • Ministry Practicum I** 1 Credit

Explores ministry as a career through discipleship and job shadowing. Development as a disciple, and reflection on personal call to ministry as a career.

*Prerequisites:* MIN 200. *Grade exceptions:* Graded on an S/U basis. Offered: Fall.

**MIN 355 • Ministry Practicum II** 1 Credit

Explores ministry as a career through discipleship and job shadowing. Development as a discipler, and reflection on personal call to ministry as a career.

*Prerequisites: MIN 200 and MIN 350. Grade exceptions: Graded on an S/U basis. Offered: Spring.*

**MIN 483 • Ministry Internship I** 3 Credits

Explores ministry as a career through a supervised ministry internship, seminars, readings, and reflections. Students reflect especially on defining their current sense of calling.

*Prerequisites: MIN 200; MIN 350; MIN 355. Grade exceptions: Graded on an S/U basis. Offered: Fall.*

**MIN 484 • Ministry Internship II** 3 Credits

Explores ministry as a career through a supervised ministry internship, seminars, readings, and reflections. Students integrate various components of their missional ministries major.

*Prerequisites: MIN 200; MIN 350; MIN 355; MIN 483. Grade exceptions: Graded on an S/U basis. Offered: Spring.*

**MIN 499 • Senior Seminar** 3 Credits

Selected topics in ministry leadership with emphasis on preparation for ministry, culminating with a professional portfolio. A major research project is followed by an oral presentation of its results.

*Prerequisites: Interpreting Biblical Themes (J) course; MIN 200; missional ministries major; Senior standing. Offered: Spring.*

**MUE 100A • Bethel Chapel Choir** 1 Credit

A non-auditioned choir that performs regularly in Chapel and other Department of Music and Theatre and Christian Formation and Church Relations events.

*Grade exceptions: S/U (limited). Offered: Fall, Spring.*

**MUE 101A • Chamber Choir** 1 Credit

The Chamber Choir rehearses and performs music specifically designed for small ensemble part-singing. In the first semester the ensemble explores traditional pre-20th century literature including French chansons and European madrigal literature. In the second semester emphasis shifts to the 20th century, with exploration of contemporary literature and vocal jazz.

*Prerequisites: Participation in Bethel Choir or Bethel Women's Choir or Bethel Men's Choir. Offered: Fall, Spring.*

**MUE 131A • Handbell Ensemble** 1 Credit

The Handbell Ensemble performs a wide range of repertoire from the finest original compositions and arrangements available for handbells. The ensemble performs in the Festival of Christmas, presents a spring concert, and performs in area churches. One rehearsal each week.

*Offered: Fall, Spring. Special Notes: Open by audition to students from all academic disciplines.*

**MUE 141A • Chamber Ensemble** 1 Credit

An opportunity to develop self-expression through the discovery and performance of instrumental chamber music. Meets once a week for 1.5 hours of coaching and requires 1.5 hours of additional preparation.

*Offered: Occasionally. Special Notes: Ensembles are arranged by individual audition and practicing is required.*

**MUE 151A • Jazz Orchestra** 1 Credit

Explores the unique American art form of jazz, performing various styles from traditional big band to fusion. Concerts include the spring Jazz in the Great Hall. Two rehearsals each week.

*Prerequisites: Participation in Wind Symphony or Approval of director of instrumental activities. Offered: Fall, Spring. Special Notes: Open by audition.*

**MUE 161A • Chamber Winds** 1 Credit

Small instrumental groups emphasize performance and training in ensemble repertoire for small wind or percussion ensembles including but not limited to: brass quintet, woodwind quintet, percussion ensemble, or any other instrumental family ensembles. One rehearsal each week.

*Prerequisites: Participation in Wind Symphony or Approval of director of instrumental activities. Offered: Fall, Spring. Special Notes: Open by audition.*

**MUL 140A • Beginning Piano 1 Credit**

A series of class lessons recommended for students who have not had formal piano study. Using the keyboard laboratory, students learn to read music and harmonize simple folk melodies at the piano as well as acquire some basic theory.

*Offered: Fall, Spring.*

**MUL 141A • Beginning Voice 1 Credit**

A series of class lessons, lectures, and student performances to give the beginning vocalist a basic foundation in singing. Incorporates folk, musical theatre, and classic literature.

*Offered: Fall, Spring.*

**MUL 142A • Beginning Guitar 1 Credit**

A series of lessons designed to give the beginning guitarist a foundation in acoustic (nonelectric) guitar, including basic tuning techniques, chords in seven keys, reading of notes on the first five frets, strumming rhythms, fingerpicking, and song leading.

*Offered: Fall, Spring. Special Notes: Music education majors may use successful completion of this course to satisfy the guitar proficiency requirement.*

**MUL 143A • Introduction to Keyboard Theory 1 Credit**

A series of class lessons for music majors and minors who have little or no background in keyboard theory skills.

*Corequisites: Concurrent enrollment with MUS 101 is required. Grade exceptions: Graded on an S/U basis.*

*Offered: Fall. Special Notes: Students with more advanced keyboard skills may attempt to test out after registration.*

**MUL 144A • Group Voice 1 Credit**

A series of lessons given for a group of three to four beginning students. Lessons last one hour and cover basic techniques of singing and performance of folk, musical theatre, or classical literature. Some one-on-one instruction may occur as the class advances.

*Prerequisites: MUL 141A or Membership in Women's Choir or Men's Choir. Offered: Fall, Spring.*

**MUL 242A • Intermediate Guitar 1 Credit**

A series of lessons designed to advance the student beyond the foundational guitar techniques introduced in MUL 142A, including barred chords, chord alteration, advanced strumming and fingerpicking, performance techniques, guitar music theory, and arranging.

*Prerequisites: MUL 142A or Consent of instructor. Offered: Spring.*

**MUL 300 • Applied Composition 2 Credits**

Private (or small group) study in composition beginning with single instruments followed by chamber groups and large ensembles. Computer notation and MIDI sequencing also included. Performance of original works when appropriate or required.

*Prerequisites: MUS 202 or Consent of instructor. Offered: Fall, Spring. Special Notes: The private lesson fee applies to this course.*

**MUP 101A • Lucia Chorum 1 Credit**

Lucia Chorum is open by audition to female students from all academic disciplines. The choir rehearses three times each week and performs on and off campus throughout the year.

*Offered: Fall, Spring.*

**MUP 111A • Bethel Choir 1 Credit**

The Bethel Choir is open by audition and presents concerts throughout the United States or Europe during its annual concert tours. The choir rehearses four days each week.

*Offered: Fall, Spring.*

**MUP 121A • Royal Register 1 Credit**

Male a cappella ensemble of auditioned voices. The group studies and performs vocal literature across genres and time periods with an emphasis on modern musical styles and vocal techniques such as contemporary music, reading sheet music, singing in tune, unifying an ensemble, and singing expressively.

*Prerequisites: Audition for the director and the ability to sing at least folk song melody. Offered: Fall, Spring.*

**MUP 150A • Bethel Philharmonic Orchestra 1 Credit**

A fully symphonic orchestra open, by audition, to all members of the Bethel community, including students, faculty, staff, alumni and the larger community as openings allow. Rehearses one night a week and gives one concert a semester.

*Offered: Fall, Spring.*

**MUP 153A • Bethel Chamber Orchestra 1 Credit**

A performance ensemble for music majors, minors, and other serious players. Performs repertoire from the Baroque to the Modern Era, tours annually, gives concerts, and participates in Festival of Christmas and Classics in the Great Hall. Plays in chapel and collaborates with the Opera Workshop and other musical theater events.

*Offered: Fall, Spring.*

**MUP 163A • Wind Symphony 1 Credit**

The Wind Symphony is an active performance group presenting concerts locally as well as throughout the United States or Europe. The Wind Symphony is open by audition to woodwind, brass, and percussion players from all academic disciplines of the university.

*Offered: Fall, Spring.*

**MUS 101 • Music Fundamentals 1 Credit**

Fundamentals of music theory notation: clefs; time signatures; major and minor key signatures; major and all three forms of minor scales; intervals and triads, including qualities and inversions; Roman numeral analysis with figured bass; overtone series.

*Corequisites: Requires concurrent registration with MUL 143A or Consent of instructor. Offered: Fall.*

**MUS 103 • Introduction to Music Literature 2 Credits**

Development of listening skills and musical vocabulary pertinent to the study of Western music history through a chronological survey of major historical style periods and representative literature.

*Corequisites: Requires concurrent registration with MUS 101 and MUL 143A or Consent of instructor.*

*Offered: Fall.*

**MUS 104 • Music Theory I 3 Credits**

A continuation of MUS 101 concepts and materials: voice-leading and part-writing of triads and seventh chords, and modulations in diatonic chorale style. Beginning development of ear-training and sight-singing, music technology, computer applications, and continuation of functional keyboard skills.

*Prerequisites: MUS 101 and MUS 103. Offered: Spring.*

**MUS 195 • Music Hour 0 Credit**

A semi-monthly informal recital for the purpose of student performance or discussion of topics of significance to musicians. Music majors and minors are required to perform on their applied instruments in a minimum of one Music Hour recital per semester. First-semester freshmen perform at the discretion of the private instructor. Music majors must register each semester in residence in order to complete the Recital and Concert Attendance requirements for graduation.

*Prerequisites: Major or minor in music. Grade exceptions: Graded on an S/U basis. Offered: Fall, Spring.*

**MUS 202 • Music Theory II 3 Credits**

A continuation of MUS 104 concepts and materials: advanced voice-leading and part-writing skills, chromaticism/non-diatonicism, introduction to jazz and pop theory. Continued development of ear-training, sight-singing, functional keyboard skills, music technology, and computer applications.

*Prerequisites: MUS 104. Offered: Fall.*

**MUS 203 • Music Theory III 3 Credits**

Practice in 16th century counterpoint; analysis of forms from 18th century counterpoint through classical forms; continuation of ear-training, sight-singing, and functional keyboard skills.

*Prerequisites: MUS 202 or Consent of instructor. Offered: Spring.*

**MUS 210 • Collaborative Keyboard Skills 2 Credits**

A series of class lessons for the advancing piano student. Topics include sight-reading, ensemble playing, transposition, open score reading, and accompanying.

*Prerequisites: MUS 104 or Consent of instructor. Offered: Spring 2020.*

**MUS 230 • Music and Worship in the 21st Century** 3 Credits

The role of music within the context of Christian corporate worship. Current practice in church music is analyzed from a theological and historical perspective with the goal of forming musical practice that matches biblical function.

*Offered: Spring.*

**MUS 262A • How To Write A Song** 3 Credits

Explore song history, analysis, and structure in order to compose and record an original piece.

*Offered: Occasionally interim. Special Notes: Does not require formal music background.*

**MUS 301 • Music Theory IV** 3 Credits

Advanced analysis and composition in all styles with a focus on 20th century music.

*Prerequisites: MUS 203. Offered: Spring, odd # years.*

**MUS 305G • Music in World Cultures** 3 Credits

Introductory study of cultural traditions, belief systems, and practices of world cultures through the study and analysis of the music of ethnic groups. Specific cultures included may vary with each offering.

*Prerequisites: [GES 130; GES 160; Contemporary Western Life and Thought (L) course; World Cultures (U) course] or [GES 244; World Cultures (U) course]. Offered: Spring, even # years.*

**MUS 312 • Music History and Literature I** 3 Credits

Chronological survey of Western musical art from the Greek civilization through the Baroque period with detailed examination of representative works. Required listening, examinations, and written projects.

*Prerequisites: MUS 103 and MUS 104. Offered: Fall.*

**MUS 313 • Music History and Literature II** 3 Credits

A continuation of MUS 312, from 1750 to the present.

*Prerequisites: MUS 312. Offered: Spring.*

**MUS 315 • Piano Literature** 3 Credits

A survey of the literature for the solo piano, spanning 400 years from the Baroque through the Modern Era.

*Prerequisites: Keyboard major or minor or Consent of instructor. Offered: Spring 2022.*

**MUS 322 • Instrumental Literature and Conducting** 3 Credits

Principles of conducting as applied to orchestral and band literature. Musical style and the responsibility of the conductor to the score. Instrumental music of the Classic, Romantic, and 20th century periods will be explored.

*Prerequisites: MUS 324. Offered: Spring.*

**MUS 323 • Instrumentation** 2 Credits

Introduction of all major instruments with emphasis on transpositions, ranges, and idiomatic writing. Arranging of music for large and small combinations of woodwind, brass, string, and percussion instruments.

*Prerequisites: MUS 202 and MUS 312. Offered: Spring.*

**MUS 324 • Choral Literature and Conducting** 3 Credits

Development of conducting techniques with the application of stylistic principles to the styles of the Renaissance, Baroque, Classic, Romantic, and 20th century periods.

*Prerequisites: MUS 203 and MUS 313 or Consent of instructor. Offered: Fall.*

**MUS 326 • Vocal Literature** 3 Credits

Survey of solo vocal repertoire from early music through the present day. Develops skill in the study of song literature. Highlights significant features and developments inherent in the form.

*Prerequisites: MUS 203 or MUS 313. Offered: Spring, even # years.*

**MUS 357 • Piano Pedagogy 2 Credits**

Methods of teaching piano. Overview of teaching materials including method books, literature collections and anthologies, and supplementary materials.

*Prerequisites: Major or minor in music. Offered: Spring 2021.*

**MUS 358 • Brass Methods 2 Credits**

Methods of teaching brass instruments (trumpet, horn, trombone, tuba). Performance techniques and materials as well as practical experience on each of the representative instruments.

*Prerequisites: Major or minor in music. Offered: Fall, even # years.*

**MUS 359 • Percussion Methods 2 Credits**

Methods of teaching percussion (snare drum, keyboard/mallets, timpani, concert accessories/auxiliary, drum set). Performance techniques and materials as well as practical experience on most of the represented instruments.

*Prerequisites: Major or minor in music. Offered: Spring, odd # years.*

**MUS 360 • String Methods 2 Credits**

Methods of teaching stringed instruments (violin, viola, cello, bass). Performance techniques and materials as well as practical experience on each of the representative instruments.

*Prerequisites: Major or minor in music. Offered: Spring, even # years.*

**MUS 362 • Woodwind Methods 2 Credits**

Methods of teaching woodwind instruments (flute, clarinet, oboe, saxophone, bassoon). Performance techniques and materials as well as practical experience on each of the representative instruments.

*Prerequisites: Major or minor in music. Offered: Fall, odd # years.*

**MUS 363 • Vocal Pedagogy 2 Credits**

Methods of teaching the vocal mechanism and its functions. Performance techniques and materials as well as practical experience.

*Prerequisites: Four semesters of voice lessons. Offered: Spring, odd # years.*

**MUS 366 • Italian and English Lyric Diction 1 Credit**

Studies in pronunciation of Italian and English songs through the use of the International Phonetic Alphabet (IPA). Verbal, written, and sung realization of this work practiced on assigned repertoire.

*Prerequisites: One year private voice study or equivalent. Offered: Fall.*

**MUS 367 • French Lyric Diction 1 Credit**

Studies in pronunciation of French diction through use of the International Phonetic Alphabet (IPA). Verbal, written, and sung realizations of this work practiced on assigned repertoire.

*Prerequisites: MUS 366. Offered: Spring, odd # years.*

**MUS 368 • German Lyric Diction 1 Credit**

Studies in pronunciation of German diction through the use of the International Phonetic Alphabet (IPA). Verbal, written, and sung realization of this work practiced on assigned repertoire.

*Prerequisites: MUS 366. Offered: Spring, even # years.*

**MUS 395 • Junior Recital 0 Credit**

A culminating performance experience required for the bachelor of music applied performance major. A one half-hour recital of Level III repertoire is presented.

*Prerequisites: Pre-recital hearing. Offered: Fall, Spring.*

**MUS 495 • Half Senior Recital 0 Credit**

A culminating performance experience required for bachelor of music education majors. A one half-hour recital of Level III repertoire is presented.

*Prerequisites: Pre-recital hearing. Offered: Fall, Spring.*

**MUS 496 • Full Senior Recital 0 Credit**

A culminating performance experience required for the bachelor of music applied performance major. A one-hour recital of Level IV repertoire is presented.

*Prerequisites: Pre-recital hearing. Offered: Fall, Spring.*



**NAS 101D • Science Concepts -Life Science 2 Credits**

Study of fundamental concepts and processes of life science. Emphasis on the means by which scientific knowledge is produced through inquiry-based activities, which are an important, active-learning component in elementary school education.

*Prerequisites:* Major in elementary education. *Special Notes:* This course is a half-term course. Students may not take this course and another NAS course the same half-term. Students must complete two different NAS science concepts courses to complete the Laboratory Science (D) course requirement for general education. Offered: Fall, Spring.

**NAS 102D • Science Concepts - Earth/Space Science 2 Credits**

Study of fundamental concepts and processes of earth/space science. Emphasis on the means by which scientific knowledge is produced through inquiry-based activities, which are an important, active-learning component in elementary school education.

*Prerequisites:* Major in elementary education. *Special Notes:* This course is a half-term course. Students may not take this course and another NAS course the same half-term. Students must complete two different NAS science concepts courses to complete the Laboratory Science (D) course requirement for general education. Offered: Fall, Spring.

**NAS 103D • Science Concepts -Chemistry 2 Credits**

Study of fundamental concepts and processes of chemistry. Emphasis on the means by which scientific knowledge is produced through inquiry-based activities, which are an important, active-learning component in elementary school education.

*Prerequisites:* Major in elementary education. *Special Notes:* This course is a half-term course. Students may not take this course and another NAS course the same half-term. Students must complete two different NAS science concepts courses to complete the Laboratory Science (D) course requirement for general education. Offered: Interim, Spring.

**NAS 104D • Science Concepts - Physics 2 Credits**

Study of fundamental concepts and processes of physics. Emphasis on the means by which scientific knowledge is produced through inquiry-based activities, which are an important, active-learning component in elementary school education.

*Prerequisites:* Major in elementary education. *Special Notes:* This course is a half-term course. Students may not take this course and another NAS course the same half-term. Students must complete two different NAS science concepts courses to complete the Laboratory Science (D) course requirement for general education. Offered: Fall, Interim.

**NAS 300 • Exploring Applied Concepts in Science, Technology, Engineering, and Math 4 Credits**

Using an integrative approach, the course focuses on the nature of science and engineering, scientific argumentation, and scientific inquiry to solve authentic problems in order to develop a greater understanding of STEM as it applies to elementary classrooms.

*Prerequisites:* NAS 101D; NAS 102D; NAS 103D; NAS 104D; MAT 201M; MAT 202. *Special Notes:* A minimum cumulative GPA of 2.75 is required for all prerequisite courses. Offered: Fall.

**NAS 400 • Applied Research in Science, Technology, Engineering, and Math Design 4 Credits**

Draws from prior NAS coursework to design, test, and implement a Science, Technology, Engineering, and Math (STEM) unit focusing on a local issue applicable to an elementary classroom. Culminates with a teaching experience followed by a formal presentation of the original engineering design project, demonstrating its application to elementary education.

*Prerequisites:* NAS 300. Offered: Spring.

**NSC 130 • Introduction to Neuroscience 3 Credits**

An introduction to the biological basis of behavior. Focuses on two main themes: the cellular, molecular, and genetic processes that form the foundation of nervous system function and the systems-level organization of the nervous system that forms the foundation of human and animal behavior.

*Corequisites:* Concurrent registration in NSC 130D is required. Offered: Spring.

**NSC 130D • Intro to Neuroscience Lab 1 Credit**

Laboratory experience accompanying NSC 130.

*Corequisites: Concurrent registration in NSC 130 is required. Offered: Spring.*

**NSC 350 • Neuroscience Methods 3 Credits**

Principles and practice of neuroscience laboratory techniques. Laboratory and lecture experience are integrated to include introduction of histological, molecular, electrophysiological and computer-based neuroscience research. Collection of qualitative and quantitative data and data analysis.

*Prerequisites: BIO 120/BIO 120D and BIO 124/BIO 124D or NSC 130/NSC 130D; PSY 230M. Corequisites: Concurrent registration in NSC 351 is required. Offered: Spring, even # years.*

**NSC 351 • Neuroscience Methods Lab 1 Credit**

Lab experience accompanying NSC 350.

*Corequisites: Concurrent registration in NSC 350 is required. Offered: Spring, even # years.*

**NSC 358 • Neurobiology 3 Credits**

Nervous system of animals and humans from the sub cellular to organismic and behavioral levels. Includes significant attention to the senses as well as mechanisms of neuronal communication, plasticity, and memory.

*Prerequisites: BIO 120/120D or two of the following: BIO 122/122D, BIO 124/BIO 124D, BIO 128/BIO 128D, NSC 130/130D. Corequisites: Registration in NSC 359 is required. Offered: Fall. Special Notes: Carries cross-credit in biology.*

**NSC 359 • Neurobiology Lab 1 Credit**

Laboratory experience accompanying NSC 358.

*Corequisites: Registration in NSC 358 is required. Offered: Fall. Special Notes: Carries cross-credit in biology.*

**NSC 493 • Literature Review in Neuroscience 1 Credit**

Survey of contemporary and classical neuroscience literature. Journal club format in which topics of the students' choosing are researched, discussed, and methodologies assessed. Students will evaluate a variety of neuroscience research through a written summary.

*Prerequisites: major in neuroscience and Junior standing. Offered: Spring.*

**NSC 496 • Neuroscience Research 1-4 Credits**

Students collect original data through independent laboratory/field research under the supervision of a neuroscience faculty member. Data are analyzed and conclusions drawn and reported.

*Prerequisites: NSC 130/NSC 130D and Consent of instructor. Offered: Fall, Spring.*

**NSC 499 • Neuroscience Seminar 1 Credit**

Readings and discussion of topics that relate neuroscience to Christian faith as well as moral, ethical, and societal issues. Topics may include psychopharmacological enhancement of attention, memory, and mood; brain implants and homo augmentus; free will, the soul, responsibility, and personhood; definition of mental health and illness.

*Prerequisites: Major in neuroscience and Senior standing. Offered: Spring.*

**NUR 202 • Nursing Skills I: Health Assessment 2 Credits**

Introduction to assessment of the physical, cultural, psychosocial, and spiritual parameters in individuals and family health within the context of the nursing process.

*Prerequisites: HAS 110; Acceptance into the nursing program. Corequisites: Registration in BIO 248/BIO 249 is required. Offered: Spring.*

**NUR 311 • Nursing Skills II 2 Credits**

Development of beginning nursing skills related to caring for clients of various health/illness states. Emphasis on the nursing process, medication administration, communication, and evidence-based skills linked with theoretical content in concurrent courses.

*Prerequisites: BIO 248/249; HAS 110 or NUR201; NUR 202. Corequisites: Must be taken concurrently with NUR 313 and NUR 315. Offered: Fall.*

**NUR 312 • Nursing Skills III 1 Credit**

Development of beginning nursing skills related to caring for clients of various health/illness states. Emphasis on the intravenous medication administration and evidence-based skills linked with theoretical content in concurrent nursing course.

*Prerequisites:* NUR 311; NUR 313; NUR 315. *Corequisites:* Must be taken concurrently with NUR 314; NUR 318; NUR 322; NUR 324. *Offered:* Spring.

**NUR 313 • Nursing Care of Individuals I 3 Credits**

Analysis of nursing care relating to individuals experiencing selected acute, chronic, and/or potential health issues. Students use evidence, including clinical knowledge, as a framework for developing nursing diagnosis, interventions, and expected outcomes.

*Prerequisites:* BIO 248/249; NUR201 or HAS 110; NUR 202. *Corequisites:* Must be taken concurrently with NUR 311 and NUR 315. *Offered:* Fall.

**NUR 314 • Nursing Care of Individuals II 3 Credits**

Analysis of nursing care relating to individuals experiencing selected acute, chronic, and/or potential health issues. Students use evidence, including clinical knowledge, as a framework for developing nursing diagnoses, interventions, and expected outcomes. This course is a continuation of NUR 313.

*Prerequisites:* NUR 311; NUR 313; NUR 315. *Corequisites:* Must be taken concurrently with NUR 312; NUR 318; NUR 322; NUR 324. *Offered:* Spring.

**NUR 315 • Practicum I: Medical Surgical Nursing 2 Credits**

A focus on the care of individuals in various health/illness states. Students will implement the nursing process in various healthcare settings fulfilling nursing roles with a focus on critical thinking and evidence-based practice.

*Prerequisites:* BIO 248/249; NUR201 or HAS 110; NUR 202. *Corequisites:* Must be taken concurrently with NUR 311 and NUR 313. *Offered:* Fall.

**NUR 318 • Chronicity: Mental Health Focus 2 Credits**

Overview of chronic health issues throughout the lifespan in the context of families and communities with an emphasis on mental health issues.

*Prerequisites:* NUR 311; NUR 313; NUR 315. *Corequisites:* Must be taken concurrently with NUR 312; NUR 314; NUR 322; NUR 324. *Offered:* Spring.

**NUR 322 • Practicum II: Medical Surgical Nursing II 3 Credits**

A focus on the care of individuals in acute and chronic health/illness states. Students implement the nursing process in simulated and inpatient medical-surgical health care settings, fulfilling nursing roles with a focus on critical thinking and evidence-based practice.

*Prerequisites:* NUR 311; NUR 313; and NUR 315. *Corequisites:* Must be taken concurrently with NUR 312; NUR 314; NUR 318; and NUR 324. *Offered:* Spring.

**NUR 324 • Practicum III: Mental Health and Community Based Nursing 2 Credits**

A focus on the care of individuals in acute and chronic health/illness states. Students implement the nursing process in mental health and community settings, fulfilling nursing roles with a focus on critical thinking and evidence-based practice.

*Prerequisites:* NUR 311; NUR 313; NUR 315. *Corequisites:* Must be taken concurrently with NUR 312; NUR 314; NUR 318; NUR 322. *Offered:* Spring.

**NUR 411 • Nursing Skills IV 1 Credit**

Develop nursing skills used in specialty areas of nursing with a focus on children and families. Enhance nursing informatics skills in order to improve the quality and safety of healthcare delivery.

*Prerequisites:* NUR 312; NUR 314; NUR316 or NUR 322 and NUR 324. *Corequisites:* Must be taken concurrently with NUR 413; NUR 417Z, NUR 419; NUR 425G. *Offered:* Fall.

**NUR 412 • Nursing Skills V 1 Credit**

Practice and demonstrate competency in complex clinical situations. Includes consideration of the scope of nursing practice in the integration of technology, skills, resource allocation, interdisciplinary collaboration, and delegation and supervision of nursing personnel.

*Prerequisites:* NUR 411 or NUR411Z; NUR 413; NUR 417Z; NUR 419; NUR425GZ or NUR 425G. *Corequisites:* NUR 416, NUR 426; NUR 496. *Offered:* Spring.

**NUR 413 • Practicum IV: Pediatric and Maternity Nursing 2 Credits**

A focus on the nursing care of pediatric and maternity patients and families. Students use critical thinking and evidence-based practice to provide holistic nursing care in simulated, pediatric, and maternity health care settings.

*Prerequisites:* NUR 312; NUR 314; NUR 318; NUR316 or NUR 322 and NUR 324. *Corequisites:* Must be taken concurrently with NUR 411; NUR 417Z; NUR 419; NUR 425G. *Offered:* Fall.

**NUR 416 • Practicum VI: Clinical Capstone 3 Credits**

An emphasis on baccalaureate nursing role synthesis. Students use critical thinking, data and technology, evidence-based findings, and principles of leadership to manage complex patient problems and improve client health outcomes.

*Prerequisites:* NUR 411 or NUR411Z; NUR415Z or NUR 413 and NUR 417Z; NUR 419; NUR425GZ or NUR 425G. *Corequisites:* Must be taken concurrently with NUR 412; NUR 426; NUR 496. *Offered:* Spring.

**NUR 417Z • Practicum V: Public Health Nursing 2 Credits**

Provision of population-based nursing care with an emphasis on diverse and underserved populations. Application of public health competencies and theories in population-based settings. Focused on the advocacy and collaborator roles within the context of service-learning.

*Prerequisites:* NUR 312; NUR 314; NUR 318; NUR316 or NUR 322 and NUR 324. *Corequisites:* Must be taken concurrently with NUR 411; NUR 413; NUR 419; and NUR 425G. *Offered:* Fall.

**NUR 419 • Pediatric & Maternity Nursing 3 Credits**

A focus on nursing care of pediatric and maternity patients and families. Students apply theoretical frameworks and practice considerations to holistic nursing care.

*Prerequisites:* NUR 312; NUR 314; NUR316 or NUR 322 and NUR 324; NUR 318. *Corequisites:* Must be taken concurrently with NUR 411; NUR 413; NUR 417Z; NUR 425G. *Offered:* Fall.

**NUR 425G • Population Focused Nursing Care 3 Credits**

Exploration of Population-focused nursing care with an emphasis on culturally diverse and underserved populations. Includes epidemiological consideration.

*Prerequisites:* NUR 312; NUR 314; NUR316 or NUR 322; NUR 324 and NUR 318; [GES 130; *Contemporary Western Life and Thought (L) course*; *World Cultures (U) course*] or [GES 246; *World Cultures (U) course*]. *Corequisites:* Must be taken concurrently with NUR411Z, NUR 413; NUR 417Z; and NUR 419. *Special Notes:* Course includes 1 credit of service learning. *Offered:* Fall.

**NUR 426 • Leadership Development 4 Credits**

Application of the leadership role in preparation to enter the professional nursing workforce. Integration of critical thinking skills and leadership, management, professional ethics, and Christian worldview frameworks.

*Prerequisites:* NUR 411 or NUR411Z; NUR415Z or NUR 413 and NUR 417Z; NUR 419; NUR425GZ or NUR 425G. *Corequisites:* Must be taken concurrently with NUR 412; NUR 416; NUR 496. *Offered:* Spring.

**NUR 431 • Conversations about End of Life 1 Credit**

Development of advance care planning facilitation skills in the context of faith, cultural, healthcare system, and societal perspectives. A First Steps ACP Facilitator Certificate is available for students who successfully complete ACP Facilitator requirements.

*Prerequisites:* Senior standing in nursing or social work or Consent of instructor. *Offered:* Fall. *Special Notes:* Carries cross-credit in social work.

**NUR 481 • Internship in Nursing 1 Credit**

Provides clinical-based learning opportunities to encourage application of theory and research-based knowledge in clinical practice. Students engage in experiences to enhance the development of their professional nursing role.

*Prerequisites:* Completed junior year of nursing program and acceptance into an approved clinical internship program. *Grade exceptions:* Graded on an S/U basis. *Offered:* Summer.

**NUR 496 • Senior Nursing Synthesis 1 Credit**

Transition from the student role to the role of the professional nurse. Synthesizes nursing clinical concepts essential for nursing graduates to provide safe, quality care to individuals, families, and groups in a variety of clinical settings. Promotion of critical thinking development and utilizing NCLEX-RN resources to prepare for NCLEX-RN.

*Prerequisites:* NUR 411 or NUR411Z; NUR415Z or NUR 413 and NUR 417Z; NUR 419; NUR425GZ or NUR 425G. *Corequisites:* NUR 412; NUR 416; NUR 426. *Offered:* Spring.

**PEA 110Q • Disc Golf 1 Credit**

An introduction to the game of disc golf. Includes history, equipment, etiquette, rules, technique, scoring, and playing of the sport at the disc golf course.

*Offered:* Fall, Spring.

**PEA 112Q • Walk Jog Run 1 Credit**

Basic introduction to running for health. Students learn to monitor heart rates as they progress from a walking/jogging base to runs of up to an hour in length. Proper warmup and recovery are stressed. Students begin with workouts appropriate to their fitness levels and set goals appropriate for those levels.

*Offered:* Fall, Spring.

**PEA 113Q • Fly Fishing 1 Credit**

Basic skills and equipment of fly-fishing. Includes history, equipment, fly-tying, fly-casting, knot tying, and basic streamside/lakeside entomology.

*Offered:* Spring.

**PEA 114QA • Jazz Dance 2 Credits**

An introductory course in basic jazz dance steps and technique. Emphasis on correct body placement, technique, introduction to various jazz styles, and artistic interpretation.

*Offered:* Fall.

**PEA 115QA • Ballet 2 Credits**

An introductory course in basic ballet dance steps and technique. Emphasis on correct body placement, technique, introduction to ballet basics and artistic interpretation.

*Offered:* Spring.

**PEA 116Q • Group Fitness 1 Credit**

Development of cardiovascular fitness through aerobic rhythms and exercise. Workout includes varied aerobic conditioning, minimal strength training, and stretching.

*Offered:* Fall, Spring.

**PEA 117Q • Cycling 1 Credit**

Introduction to basic cycling skills, basic bicycle maintenance and repair, and cycling safety.

Discussion includes cycling for sport (mountain biking, road biking), commuting, and leisure. Cycling responsibility and safety are emphasized.

*Offered:* Spring.

**PEA 118Q • Beginning Weight Training 1 Credit**

Physical fitness through weight training. Basic principles of diet, weight training, and completion of an adequate program.

*Offered:* Fall, Spring.

**PEA 119Q • Self Defense 1 Credit**

Development of the awareness and basic skills necessary for protection and self-defense. Focus on observational and non-confrontational skills used to prevent or postpone physical aggression. Development of competency in the use of physical self-defense measures needed when prevention fails.

*Offered:* Fall, Interim.

**PEA 122Q • Badminton 1 Credit**

Basic badminton skills, player position, and strategy. Includes instruction, drills, practice, playing time, a class tournament, history, rules, etiquette, and equipment needs.

*Offered: Fall, Interim, Spring.*

**PEA 124Q • Fundamentals of Basketball 1 Credit**

Individual skill development, coordination of individual skills with other skills, strategy, and team play for the pick-up or intramural player.

*Offered: Fall, Spring. Special Notes: Not open to varsity basketball players.*

**PEA 130Q • Beginning Snowboarding 1 Credit**

Basic skills of snowboarding to achieve success on easy and intermediate terrain. Includes history, safety, equipment, and development of riding skill and technique on groomed trails.

*Course fee will not be refunded in full if class is dropped after the first day of instruction. Offered: Interim.*

**PEA 131Q • Intermediate Snowboarding 1 Credit**

Intermediate and advanced boarding skills on intermediate and expert terrain. Emphasis on developing riding technique to tackle bumps, steps, carving, and terrain park features.

*Course fee will not be refunded in full if class is dropped after the first day of instruction. Offered: Interim.*

**PEA 132Q • Golf 1 Credit**

Basic golf strokes. Instruction and practice of grip, swing, woods, irons, chipping, and putting at the driving range and putting green. Includes history, equipment, etiquette, rules, and scoring, as well as playing time at the golf course.

*Offered: Fall, Spring.*

**PEA 133Q • Intermediate Golf 1 Credit**

Designed for students who have had some instruction and experience with golf. Further development of strokes and emphasis on playing a more consistent golf game.

*Prerequisites: PEA 132Q or Consent of instructor. Offered: Fall.*

**PEA 136Q • Racquetball 1 Credit**

Basic skills and strategy of racquetball, as well as the rules, regulations, and history of the game. Includes singles, cutthroat, and doubles.

*Offered: Fall, Spring. Special Notes: Students must provide their own racquet.*

**PEA 138Q • Beginning Downhill Skiing 1 Credit**

Basic skills of downhill skiing. Includes history, safety, and equipment; walking, climbing, gliding, and traversing the hill; wedge, steer, wide track, and parallel turns; techniques in stopping and controlling speed.

*Course fee will not be refunded in full if class is dropped after the first day of instruction. Offered: Interim.*

**PEA 139Q • Intermediate Downhill Skiing 1 Credit**

Intermediate and advanced turns at slow and intermediate speed on steep, high, and difficult terrain. Opportunity to measure ability through a race course designed for this level of ability.

*Course fee will not be refunded in full if class is dropped after the first day of instruction. Offered: Interim.*

**PEA 140Q • Cross Country Skiing I 1 Credit**

An introduction to cross country skiing emphasizing diagonal stride technique. No experience necessary. If students do not have their own equipment, rental equipment is made available. The campus trail and nearby state and regional trails are utilized. Class includes an afternoon at William O'Brien state park. Class meets four days per week.

*Offered: Interim. Special Notes: Open to beginners and intermediates.*

**PEA 141Q • Cross Country Skiing II 1 Credit**

Reinforcement and development of diagonal stride techniques and beginning skate-skiing techniques for intermediate skiers. Discussion of more advanced waxing techniques and equipment. Includes one extended ski off campus.

*Prerequisites: PEA 140Q or Consent of instructor. Offered: Occasionally interim.*

**PEA 142Q • Slow Pitch Softball 1 Credit**

Fundamental skills of slow-pitch softball for the recreational player.

*Offered: Fall, Spring.*

**PEA 144Q • Beginning Tennis 1 Credit**

Basic tennis strokes. Includes instruction, drills, practice, and playing time. Covers rules, simple strategy, player position, etiquette, and guidelines for equipment selection.

*Offered: Fall, Spring.*

**PEA 145Q • Intermediate Tennis 1 Credit**

Further development of basic tennis skills with emphasis on solid and consistent stroking. Instruction, as well as the application of rules in game situations. Traditional 6-on-6, coed, and reverse 4s are taught under the rules of USA volleyball. Emphasis on developing a positive attitude toward playing the game of volleyball.

*Offered: Spring.*

**PEA 146Q • Volleyball 1 Credit**

Power volleyball skills and techniques involved in volleyball as a recreational sport. Rules, strategy, as well as the application of rules in game situations. Traditional 6-on-6, coed, and reverse 4s are taught under the rules of USA volleyball. Emphasis on developing a positive attitude toward playing the game of volleyball.

*Offered: Fall, Spring.*

**PEA 147Q • Intermediate Volleyball 1 Credit**

Competitive volleyball play in which participants learn a variety of volleyball strategies, offenses, defenses, and various styles of play. Traditional 6-on-6, coed, and reverse 4s are used for competition under the rules of USA volleyball. Emphasis on applying rules in game situations, not only as a player, but also as an official.

*Prerequisites: PEA 146Q or Participation in high school varsity volleyball. Offered: Spring, even # years.*

**PEA 150Q • Lifeguarding I 2 Credits**

Development of the highest possible skill level in the five basic strokes, as well as instruction and practice in basic skills to save one's own life or the life of another. Opportunity to receive a Red Cross Lifeguarding I Certificate.

*Prerequisites: Advanced swimming proficiency and Current CPR and First Aid certification (may be taken concurrently). Offered: Spring, odd # years.*

**PEA 151Q • Soccer 1 Credit**

Introduction to the history, rules, and fundamental skills of soccer.

*Offered: Fall, Spring.*

**PEA 152Q • Yoga 1 Credit**

Development of physical fitness and self-awareness through core stabilizing and strengthening exercises as an integral part of health and wellness. Emphasis on the integration of Christian faith and exercise while learning correct postures, alignments, and focus.

*Offered: Spring. Special Notes: Students must provide their own exercise/yoga mat.*

**PEA 153Q • Pickleball 1 Credit**

Fast paced net game with similarities to tennis, badminton, table tennis, racquetball; content includes rules, strategies, techniques, and court positioning for singles and doubles, and includes extensive active practice and play.

*Offered: Fall, Spring.*

**PHI 110 • Contemporary Moral Issues 3 Credits**

A moral analysis of abortion, euthanasia, capital punishment, sexual morality, and self-interest.

Ethical approaches of Aristotle, Bentham, Butler, Hobbes, Kant, Mill, Rawls, and Ross. Development of principles of love and justice, and the role of Christians in society. Emphasis on moral decision making.

*Offered: Fall, Interim, Spring.*

**PHI 125M • Introduction to Logic** 3 Credits

A study of standard forms of deductive and inductive logical reasoning, critical thinking, and informal fallacies. Covers rules for evaluating arguments and acquaints students with ways to distinguish good arguments from bad ones, with the goal of problem solving and making reasonable decisions about beliefs and actions.

*Offered: Spring.*

**PHI 210L • The Modern Mind** 3 Credits

Themes and movements that have shaped European and American culture in the last 200 years, drawing on significant works in philosophy, literature, and art. Reflection on the personal and cultural meanings of living in the modern age.

*Prerequisites: GES 130 and GES 160 (may be taken concurrently) or GES 244 (may be taken concurrently).*

*Offered: Fall.*

**PHI 220L • Philosophies of Race and Gender in America** 3 Credits

Investigates the impact of theories of race and gender on life and thought in contemporary America. Analyzes the philosophical concepts and arguments underlying the historical development of these theories. Critically evaluates the philosophical commitments inherent in the moral and religious language used in discussions of race and gender in America.

*Prerequisites: GES 130 and GES 160 (may be taken concurrently) or GES 244 (may be taken concurrently).*

*Offered: Fall.*

**PHI 223L • Introduction to Gender Studies** 3 Credits

Provides a philosophical grounding in the field of Gender Studies. Introduces a broad spectrum of theories and ideas about gender, and explores key debates within the field. Examines how theories of gender emerge as well as shape and influence individual lives and social contexts in America and beyond.

*Prerequisites: GES 130 and GES 160 (may be taken concurrently) or GES 244 (may be taken concurrently).*

*Offered: Spring.*

**PHI 228L • Philosophies of Love and Sex** 3 Credits

Examines different perspectives on the nature of love and sexuality. Defines and distinguishes features associated with different types of love and sexuality. Explores norms concerning both, and critically examines their role in contemporary American society.

*Prerequisites: GES 130 and GES 160 (may be taken concurrently) or GES 244 (may be taken concurrently).*

*Offered: Occasionally spring.*

**PHI 230U • Medieval Islamic Philosophy** 3 Credits

From 800-1200 A.D., Arabic civilization was the world's center of intellectual, cultural, and economic developments. A study of the philosophical and theological thought developed in the Arabic world during the medieval period, and its influence on later intellectual traditions, including the Western Christian tradition.

*Prerequisites: GES 130 (may be taken concurrently) or GES 244 (may be taken concurrently). Offered: Spring.*

**PHI 236UZ • Medieval Worlds: Cultures and Beliefs in North Africa and Europe** 3 Credits

On-site investigation of medieval North Africa and Europe. Studies the impact and legacy of Islamic culture, politics, philosophy, and religious thinking, particularly how Christians, Jews, and Muslims interacted. Themes include the legacy of Islamic philosophical thought, the development of medieval Christianity, and the impact of religious ideology on political conflicts.

*Prerequisites: GES 130 or GES 244. Offered: Occasionally interim. Special Notes: Carries cross-credit with history.*

**PHI 251 • History of Philosophy I** 3 Credits

Development of Western philosophy from its origin with the ancient Greeks to the time of the Renaissance, emphasizing the works of Plato, Aristotle, Augustine, and Thomas Aquinas.

*Prerequisites: One philosophy course. Offered: Fall.*



**PHI 252 • History of Philosophy II** 3 Credits

Philosophical traditions beginning with the rise of modern science, including the Continental rationalists, British empiricists, Kant, and Hegel, and tracing 19th century reactions to idealism and subsequent developments in Continental and Anglo-American philosophy in the 20th century.

*Prerequisites: One philosophy course. Offered: Spring.*

**PHI 305G • Philosophy of Religion** 3 Credits

Study of issues central to religious belief. Explores different approaches to the relation of faith and reason, the sources of religious knowledge, the nature of God, the problem of evil, religious diversity, and the afterlife.

*Prerequisites: [GES 130; GES 160; Contemporary Western Life and Thought (L) course; World Cultures (U) course] or [GES 244; World Cultures (U) course]. Offered: Spring.*

**PHI 310 • Aesthetics** 3 Credits

Problems and perspectives concerning the nature of art and aesthetic experience. Questions such as “What is art?” “What is good art?” and “What good is art?” in the context of the visual arts, music, literature, and film. The relationships among aesthetic, moral, and religious values are explored.

*Prerequisites: GES 125. Offered: Fall.*

**PHI 315 • Kierkegaard and Existentialism** 3 Credits

Meaning and influence of the works of Kierkegaard. Topics may include Kierkegaard’s philosophical style, his views on the nature of the self and authentic existence, freedom and despair, religious faith, social criticism, and the elaboration of these themes by other existentialists. Readings from Kierkegaard’s works and those of later existentialists.

*Prerequisites: One philosophy course. Offered: Fall.*

**PHI 316 • Consciousness: Psychology and Philosophy in Dialogue** 3 Credits

A team-taught investigation of ancient, medieval, and modern philosophies of consciousness and the historical roots of contemporary psychology. Shows how philosophical and psychological theories of consciousness transcend disciplinary boundaries. Focuses on interaction between philosophy and psychology, emphasizing the origins of cognitive science in philosophy of mind and consciousness.

*Prerequisites: PSY 100 or One philosophy course. Offered: Occasionally. Special Notes: Carries cross-credit in psychology.*

**PHI 320 • Ethics: Theory and Practice** 3 Credits

An advanced study of principle ethical theories and their application to relevant problems concerning the individual and society. Readings in classical and contemporary sources focus on questions such as the nature of justice, the common good, and the moral responsibilities of citizens.

*Prerequisites: Two philosophy courses or Approval of instructor. Offered: Spring.*

**PHI 335K • Environmental Ethics** 3 Credits

Examines the intersection of science, society, and technology as it pertains to issues in environmental ethics. Moves from theory—considering science, society, and technology philosophically—to application by concluding with a major research project on an applied issue in environmental ethics involving scientific data and technological choice.

*Prerequisites: Laboratory Science (D) Course and Mathematics (M) course. Offered: Fall, Interim. Special Notes: Carries cross-credit in environmental studies.*

**PHI 360 • Classics in Western Political Philosophy** 4 Credits

Selected political theorists. Such writers as Aristotle, Calvin, early Christian writers, Locke, Luther, Machiavelli, Marx, Niebuhr, and Plato. Concentrates on primary sources.

*Prerequisites: One course in political science, philosophy, or history and Junior standing. Offered: Fall, odd # year. Special Notes: Carries cross-credit in political science and history.*

**PHI 390 • Knowledge and Reality** 3 Credits

An advanced study of topics such as the nature and meaning of knowledge, the foundations and limits of knowledge and belief, and the nature of reality. Traditional and contemporary perspectives will be considered.

*Prerequisites: Two courses in philosophy. Offered: Spring.*

**PHI 491 • Applied Humanities Seminar 4 Credits**

An interdisciplinary, experiential capstone course in which students draw on their studies in history, philosophy, political science, or the digital humanities in order to study a major challenge in contemporary society, analyzing causes, effects, and existing responses, and then work together to propose new responses to it.

*Prerequisites: Senior standing and Major in one of the following programs: history, philosophy, political science, digital humanities, international relations, business political science, or social studies education 5-12. TR; Fall, Spring.*

**PHY 102 • Physics of Everyday Life 3 Credits**

Explores how physics concepts can be used to understand everyday phenomena in the world around us. Topics include mechanics, waves (including sound and light), thermodynamics, and atomic and nuclear physics. Lecture demonstrations and laboratories stress a clear understanding of observed phenomena.

*Corequisites: Concurrent registration in PHY 102D is required. Offered: Interim.*

**PHY 102D • Physics of Everyday Life-Lab 1 Credit**

Laboratory experience accompanying PHY 102.

*Corequisites: Concurrent registration in PHY 102 is required. Offered: Interim.*

**PHY 112 • Introduction to Astronomy 3 Credits**

The concepts, techniques, and tools of astronomy and astrophysics for nonscience students. Includes historical overview; identification of constellations; telescopes; the nature of light, atomic spectra, and structure; the nuclear physics of stars; the life cycle of stars; and current theories of the fate of the universe.

*Corequisites: Concurrent registration in PHY 112D is required. Offered: Fall.*

**PHY 112D • Introduction to Astronomy Lab 1 Credit**

Laboratory experience accompanying PHY 112. Includes optics, atomic spectra, and observations with simple instruments and telescopes.

*Corequisites: Concurrent registration in PHY 112 is required. Offered: Fall.*

**PHY 202 • Introductory Physics I 3 Credits**

Mechanics, thermal properties of matter and mechanical waves.

*Prerequisites: MAT 123M, MAT 124M, or solid understanding and competency in high school mathematics as demonstrated by at least one of the following: a Math ACT score of at least 23, 519 on the Math portion of the SAT, a Math Placement Test score of at least 3. Corequisites: Concurrent registration in PHY 202D is required. Offered: Fall.*

**PHY 202D • Introductory Physics I Lab 1 Credit**

Laboratory experience accompanying PHY 202.

*Corequisites: Concurrent registration in PHY 202 is required. Offered: Fall.*

**PHY 206 • Introductory Physics II 3 Credits**

Electricity and magnetism, sound waves, optical phenomena, and modern physics.

*Prerequisites: PHY 202/202D. Corequisites: Concurrent registration in PHY 207 is required. Offered: Spring.*

**PHY 207 • Introductory Physics II Lab 1 Credit**

Laboratory experience accompanying PHY 206.

*Corequisites: Concurrent registration in PHY 206 is required. Offered: Spring.*

**PHY 260 • Careers in Engineering and Physics Seminar 1 Credit**

Developing careers in high-technology fields such as engineering and physics. Explores the wide variety of specific careers possible through video, lecture, tours, and guest speakers. Develops practical professional skills such as writing resumes and cover letters, accumulating connections and experience, and techniques for interviewing.

*Prerequisites: PHY 296/297. Offered: Fall. Special Notes: Carries cross-credit in engineering.*

**PHY 292 • General Physics I** 3 Credits

Kinematics, mechanics, oscillations, fluids, and conservation principles.

*Prerequisites:* MAT 124M (may be taken concurrently). *Corequisites:* Concurrent registration in PHY 292D is required. Offered: Fall.

**PHY 292D • General Physics I Lab** 1 Credit

Laboratory experience accompanying PHY 292.

*Corequisites:* Concurrent registration in PHY 292 is required. Offered: Fall.

**PHY 296 • General Physics II** 3 Credits

Electricity, magnetism, thermodynamics, sound waves, and optics.

*Prerequisites:* PHY 292/292D (with a grade of C or better); MAT 125 (may be taken concurrently).

*Corequisites:* Concurrent registration in PHY 297 is required. Offered: Spring.

**PHY 297 • General Physics II Lab** 1 Credit

Laboratory experience accompanying PHY 296.

*Corequisites:* Concurrent registration in PHY 296 is required. Offered: Spring.

**PHY 302 • Electronics** 3 Credits

Fundamentals of digital and analog electronics intended for scientists and engineers.

*Prerequisites:* PHY 296/297 with C grade or higher and MAT 125. *Corequisites:* Concurrent registration in PHY 303 is required. Offered: Fall.

**PHY 303 • Electronics Lab** 1 Credit

Laboratory experience accompanying PHY 302. Extensive laboratory exercises and a choice of projects provide hands-on experience with circuits using transistors, operational amplifiers, logic gates, flip-flops, and other devices.

*Prerequisites:* PHY 296/297 with C grade or higher and MAT 125. *Corequisites:* Concurrent registration in PHY 302 is required. Offered: Fall.

**PHY 312 • Modern Physics** 3 Credits

Relativity, quantum theory, introductory wave mechanics, nuclear processes, elementary particles, and cosmology.

*Prerequisites:* PHY 296/297 with C grade or higher and MAT 223. *Corequisites:* Concurrent registration in PHY 313 is required. Offered: Spring.

**PHY 313 • Modern Physics Lab** 1 Credit

Atomic and nuclear laboratory experiments accompanying PHY 312.

*Corequisites:* Concurrent registration in PHY 312 is required. Offered: Spring.

**PHY 320 • Mathematical Methods in Physics and Engineering** 4 Credits

Development of skill in mathematical techniques useful in the solution of physics and engineering problems. Included are vector analysis; line and surface integrals; Fourier analysis; partial differential equations; and probability and statistics.

*Prerequisites:* MAT 222 or MAT 224 (may be taken concurrently) and MAT 223. Offered: Fall. *Special Notes:* Carries cross-credit in engineering.

**PHY 332 • Optics** 3 Credits

Principles of geometrical and physical optics.

*Prerequisites:* PHY 312/313 and MAT 223. *Corequisites:* Concurrent registration in PHY 333 is required. Offered: Spring, even # years.

**PHY 333 • Optics Lab** 1 Credit

Laboratory experience accompanying PHY 332 emphasizing physical optics measurements, laser technology, and holography.

*Corequisites:* Concurrent registration in PHY 332 is required. Offered: Spring, even # years.

**PHY 336 • Signals and Systems 4 Credits**

Continuous- and discrete-time signals and systems. Topics include: definitions and properties of signals and systems, convolution, solution of differential and difference equations. Laplace and Z transforms, and Fourier analysis. Emphasis is on applications to signal processing, communication, and control systems.

*Prerequisites: MAT 222 or MAT 224; PHY 302/PHY 303; ENR/PHY 352/353. Offered: Fall, even # years. Special Notes: This course carries cross-credit with engineering.*

**PHY 340 • Mechanics 4 Credits**

Particle dynamics, conservative motion, central forces, accelerated coordinate systems, and Lagrange's equations of motion.

*Prerequisites: PHY 296/297 with C grade or higher; MAT 223. Offered: Fall.*

**PHY 352 • Computer Methods in Physics and Engineering 3 Credits**

Application of the computer to solving applied problems of interest to physicists and engineers. Computer techniques are developed for numerical methods, simulation models, and data acquisition and control in the laboratory.

*Prerequisites: MAT 223; PHY 296/297 and PHY 302/303 with C grade or higher or Consent of instructor. Corequisites: Concurrent registration in PHY 353 is required. Offered: Spring. Special Notes: Carries cross-credit in engineering.*

**PHY 353 • Computer Methods in Physics and Engineering Lab 1 Credit**

Laboratory experience accompanying PHY 352.

*Corequisites: Concurrent registration in PHY 352 is required. Offered: Spring. Special Notes: Carries cross-credit in engineering.*

**PHY 365 • Physics Research Seminar 1 Credit**

An introduction to research in physics and the development of scientific writing skills. Emphasis placed on preparing for departmental research experiences such as PHY 490 and external research experiences such as those found in industry, summer fellowship programs, and graduate schools.

*Prerequisites: PHY 260; PHY 312/313; Junior standing; A major in the Physics and Engineering department. Offered: Spring.*

**PHY 400 • Electricity and Magnetism 4 Credits**

Electrostatics and magnetostatics, electric and magnetic fields in free space and in materials, electromagnetic waves, and transmission lines.

*Prerequisites: PHY 296/297 with C grade or higher; MAT 222 or MAT 224; MAT 223. Offered: Fall, odd # years.*

**PHY 410 • Thermodynamics 4 Credits**

Laws of thermodynamics, conditions for thermodynamic equilibrium, and fundamentals of statistical mechanics.

*Prerequisites: PHY 296/297 with C grade or higher and MAT 223. Offered: Spring, odd # years. Special Notes: PHY 312/313 is strongly recommended as a prerequisite.*

**PHY 422 • Fluid Mechanics 3 Credits**

Laws of statics, kinematics, and dynamics applied to fluid mechanics. Integral and differential conservation laws for mass, momentum, and energy. Dimensional analysis, viscous pipe flow, boundary layers, separated flows, and potential flow.

*Prerequisites: PHY 296/297 with C grade or higher and MAT 223. Corequisites: Concurrent registration in PHY 423 is required. Offered: Fall. Special Notes: Carries cross-credit in engineering.*

**PHY 423 • Fluid Mechanics Lab 1 Credit**

Laboratory experience accompanying PHY 422.

*Corequisites: Concurrent registration in PHY 422 required. Offered: Fall. Special Notes: Carries cross-credit in engineering.*

**PHY 424 • Electronic Materials and Devices** 3 Credits

Theory and application of condensed matter and materials. Physical origin of electrical, optical, mechanical, thermal, and magnetic properties. Emphasis on devices such as pn junction diodes, LEDs, piezoelectrics, and sensors. An accompanying lab explores characterization of materials and the design, fabrication, and testing of devices.

*Prerequisites:* PHY 302/303 or PHY 312/313. *Corequisites:* Concurrent registration in PHY 425 is required. *Offered:* Fall, even # years. *Special Notes:* Carries cross-credit in engineering.

**PHY 425 • Electronic Materials and Devices Laboratory** 1 Credit

Laboratory component of PHY 424.

*Corequisites:* Concurrent registration in PHY 424 required. *Offered:* Fall, even # years. *Special Notes:* Carries cross-credit in engineering.

**PHY 432 • Topics in Contemporary Optics** 3 Credits

Fourier optics, theory of coherence, quantum optics, nonlinear optics, and the physics of lasers.

*Prerequisites:* PHY 312/313 and MAT 223. *Concurrent registration in PHY 433 is required.* *Offered:* Spring, odd # years.

**PHY 433 • Topics in Contemporary Optics Lab** 1 Credit

Laboratory experience accompanying PHY 432.

*Corequisites:* Concurrent registration in PHY 432 is required. *Offered:* Spring, odd # years.

**PHY 440 • Quantum Mechanics** 4 Credits

Concepts and techniques of quantum mechanics.

*Prerequisites:* PHY 312/PHY 313; MAT 222 or MAT 224; MAT 223. *Offered:* Fall, even # years.

**PHY 450 • Topics in Physics and Engineering** 3-4 Credits

Topics selected from various fields of engineering and applied physics for the purpose of illustrating the practical application of physical principles. Emphasis on developing the skills and viewpoints commonly used by engineers and industrial physicists. The field of engineering or physics is announced prior to registration.

*Prerequisites:* Related courses as specified. *Repeatable course:* Course may be repeated when a different topic is emphasized. *Special Notes:* Carries cross-credit in engineering. *Offered:* Occasionally.

**PHY 481 • Internship in Physics** 1-4 Credits

A practical experience in an off-campus professional setting in which the student applies the skills and perspectives of a physicist. Designed by student in consultation with a faculty member.

*Prerequisites:* Major in applied physics or physics and Junior or senior standing. *Offered:* Fall, Spring.

**PHY 490 • Research** 3 Credits

An opportunity for individual student projects under the supervision of the faculty.

*Prerequisites:* Senior standing; PHY 365; Major in Physics and Engineering department. *Offered:* Fall, Spring.

**POS 100 • American Politics and Government** 3 Credits

Structure and workings of major parts of the United States national government, such as the Constitution, the presidency, Congress, the courts, the electoral process, and others. How these institutions help Americans deal with significant current issues.

*Offered:* Fall, Spring.

**POS 202U • Introduction to International Relations** 3 Credits

How governments interact to further their different political, military, and economic interests; basic factors affecting international cooperation and conflict; topics such as summit meetings, terrorism, arms control, and food and energy resources distribution; one or more international crisis simulation exercises.

*Prerequisites:* Second-semester freshman standing or higher; GES 130 (may be taken concurrently) or GES 244 (may be taken concurrently). *Offered:* Fall, Spring.

**POS 205 • Introduction to Comparative Politics 3 Credits**

An introduction to the subfield of Comparative Politics with special emphasis on the nature, history, and development of political regimes. Systems to be covered include Western democracies, communist and post-communist states, military dictatorships, and politically developing states.

*Offered: Fall.*

**POS 211 • The Political Quest 3 Credits**

Major problems of politics and international relations, such as the proper goals of political life, the nature of justice, and the role of the state. Methods of inquiry. Development of the student's personal political stance and its relation to his or her maturing faith.

*Prerequisites: One political science course. Offered: Fall, odd # years, Spring.*

**POS 216L • American Constitutional History 3 Credits**

Examination of the origins and development of American constitutional ideas and institutions from the colonial period to the present. Particular attention paid to the historical connections between major constitutional cases and broader social, political, economic, and cultural trends.

*Prerequisites: GES 130; GES 160 (may be taken concurrently) or GES 244 (may be taken concurrently).*

*Offered: Interim or Spring. Special Notes: Carries cross-credit in history.*

**POS 219L • Public Leadership 3 Credits**

Principles of public leadership and challenges for leaders to meet in the modern age; American experiences with leaders in various roles.

*Prerequisites: GES 130; GES 160 (may be taken concurrently) or GES 244 (may be taken concurrently).*

*Offered: Occasionally.*

**POS 221L • American Political Ideologies 3 Credits**

Major modern American ideologies. Anarchism, conservatism, democratic liberalism, fascism, gender and ethnic, liberation theology, and socialism politics. Christian interfaces with various political theories.

*Prerequisites: GES 130; GES 160 (may be taken concurrently) or GES 244 (may be taken concurrently).*

*Offered: Occasionally interim, Spring.*

**POS 230L • Politics and Religion in the United States 3 Credits**

Examines the historical and contemporary relationship between religion and politics in the United States. Divisions and political affiliations of various religious communities are considered alongside discussion of secularism, pluralism, and civil religion in America.

*Prerequisites: [GES 130; GES 160] or GES 244 (may be taken concurrently). Offered: Interim, Occasionally*

*spring. Special Notes: Carries cross-credit in religious studies.*

**POS 241L • Revolution and Political Development 3 Credits**

Theory and process of modernization, with special emphasis on the Anglo-American historical experience; examinations of U.S. efforts to promote democracy internationally in Europe, Asia, and the Middle East since World War II.

*Prerequisites: GES 130; GES 160 (may be taken concurrently) or GES 244 (may be taken concurrently).*

*Offered: Occasionally interim. Special Notes: Carries cross-credit in history.*

**POS 250 • Political Science Practicum 1 Credit**

In consultation with the Political Science department, students select an off campus program of academic study. Students create a presentation to share their experiences in a colloquium with other international relations, political science, and business and political science majors. Integrates off campus experiences with curricular learning experiences.

*Prerequisites: One POS course; Consent of the Political Science department; Major in international relations, business and political sciences, or political science, or minor in political science. Special Notes: Graded on an S/U basis. Offered: Fall, Spring.*

**POS 252L • History and Politics of Sports 3 Credits**

The history of sports in the modern era, with particular attention paid to sports' connections to international politics and public policy and to sports as a mirror for the history of race, gender, education, business, labor, and religion in the United States.

*Prerequisites: GES 130 and GES 160 or GES 244. Offered: Spring, even # years. Special Notes: This course carries cross-credit in history.*

**POS 304 • Political Parties 3 Credits**

Examines the role of political parties and elections in democratic political systems, focusing on the electoral process, political parties, and citizen participation. Uses the American case as the first large-scale democratic system to examine a number of other electoral systems from the developed and developing worlds.

*Prerequisites: Sophomores with consent of instructor. Offered: Fall, even # years. Special Notes: POS 100 is a recommended prerequisite.*

**POS 305G • The Cold War 3 Credits**

The Cold War as an event in international history, studied from the perspective of the United States, the Soviet Union, China, Europe, and the Third World. Introduces students to ongoing historical debates and to the sources historians use in those debates (including declassified documents available online).

*Prerequisites: [GES 130; GES 160; Contemporary Western Life and Thought (L) course; World Cultures (U) course] or [GES 244; World Cultures (U) course]. Offered: Spring, odd # years. Special Notes: Carries cross-credit in history.*

**POS 306 • Public Administration 3 Credits**

How public policy is put into effect through the administrative agencies of government and the problems in management of such agencies and their relations with the public.

*Prerequisites: Sophomore standing. Offered: Spring. Special Notes: Carries cross-credit in business. Special Notes: POS 100 is a recommended prerequisite.*

**POS 310 • American Foreign Relations 3 Credits**

Development of United States foreign policy since the Nixon administration, with particular attention paid to contemporary issues, long-range historical trends, and the ways in which foreign policy is formulated and carried out.

*Prerequisites: Sophomore standing with consent of instructor. Offered: Fall, even # years. Special Notes: POS 100 and POS 202U are recommended prerequisites.*

**POS 313G • Globalization and International Institutions 3 Credits**

Examination of the processes, institutions, relationships, and dynamic trends in the international system. Attention is given to the creation or maintenance of international economic systems and international organizations as they address emerging or enduring problems of world politics. Key international institutions.

*Prerequisites: [GES 130; GES 160; Contemporary Western Life and Thought (L) course; World Cultures (U) course] or [GES 244; World Cultures (U) course]. Offered: Spring, even # years. Special Notes: POS 202U is a recommended prerequisite.*

**POS 315 • The Politics of Terrorism and Counterterrorism 3 Credits**

Analyzes terror and terrorism both historically and contemporaneously through study of the political psychology of terrorists and terrorist groups, the tactics of terror, and the complex relationship between terror and states. Special attention paid to the motivations for terror and the effect of religion on terrorism as a political strategy.

*Prerequisites: POS 202U. Offered: Spring, odd # years.*

**POS 317 • Political Psychology 3 Credits**

Political psychology is concerned with the causes, dynamics, and consequences of human thinking and action in the context of politics. This field survey covers the psychology of decision making, political attitude formation, public opinion, personality and emotions, intergroup relations, ideology, and the role of mass media in politics.

*Prerequisites: One political science course. Offered: Fall, odd # years. Special Notes: Carries cross-credit in psychology.*

**POS 321 • Contemporary Democracies 3 Credits**

The meaning of democracy in theory and practice throughout history and in the modern political systems of Great Britain, Japan, and Mexico. Independent research in other democratic systems. Offered: Fall, odd # years. Special Notes: POS 100 or POS 211 are recommended prerequisites.

**POS 324G • Human Rights in International History 3 Credits**

International and comparative exploration of how human rights have been defined, violated, and protected. Historical topics (e.g., abolition of the slave trade, social reform and Christian missions, genocides of the 20th century) as well as contemporary issues. Includes a service-learning project. Prerequisites: [GES 130; GES 160; Contemporary Western Life and Thought (L) course; World Cultures (U) course] or [GES 244; World Cultures (U) course]. Special Notes: Carries cross-credit in history. Offered: Occasionally.

**POS 325 • Political Communication 3 Credits**

Analysis of the theoretical background behind political communication from a public speaking and media perspective. Attention to decision-making skills required in political campaigns. Discussion of advanced persuasive campaign theory.

Prerequisites: COM 110, POS 100, or Consent of instructor. Offered: Occasionally interim. Special Notes: Carries cross-credit in communication studies.

**POS 329 • African Politics 3 Credits**

Consideration of political development in Africa from the pre-colonial era through the present, focusing on changes in political regimes through time, the nature of economic struggles, and sources of violent conflict.

Offered: Spring. Special Notes: Carries cross-credit in history, POS 202U and POS 205 are recommended prerequisites.

**POS 340 • American Political Institutions 3 Credits**

Examination of the U.S. Congress, Supreme Court, and presidency, with attention to the effects of institutions on the democratic and policy processes. Consideration of political science research on political institutions and contemporary issues facing them.

Prerequisites: POS 100 or Consent of instructor. Offered: Spring, odd # years.

**POS 342 • American Public Policy 3 Credits**

Examination of public policy-the result of government action-through consideration of the policy process, policy design, and current status of American public policy. Special attention devoted to social policy with student investigation and research in public policy.

Prerequisites: POS 100 or Consent of instructor. Offered: Spring, even # years.

**POS 345 • Modern Political Thought 3 Credits**

Examination and consideration of selected political thinkers of the 19th and 20th centuries, including Arendt, Berlin, Foucault, Freud, Kuyper, Mouw, Nietzsche, Rawls, Yoder, and others. Concentrates on primary sources and Christian responses to the "end of political theory" in the 20th century.

Prerequisites: One course in political science, philosophy, Western history, or Consent of instructor. Offered: Fall, even # years.

**POS 356 • Modern Middle East 4 Credits**

Political, social, religious, economic, and cultural history of the Middle East since 1800. Particular attention is paid to colonialism, globalization, war, gender roles, revolution, and reform. Controversies such as the Arab/Israeli conflict, the Islamic Revolution in Iran, Saddam Hussein's Iraq, and the U.S. war on terror are discussed.

Prerequisites: Sophomore standing. Offered: Fall. Special Notes: Carries cross-credit in history.

**POS 360 • Classics in Western Political Philosophy 4 Credits**

Selected political theorists. Such writers as Aristotle, Calvin, early Christian writers, Locke, Luther, Machiavelli, Marx, Niebuhr, and Plato. Concentrates on primary sources.

Prerequisites: One course in political science, philosophy, or history. Offered: Fall, odd # years. Special Notes: Carries cross-credit in philosophy and history.



**POS 410 • Topics in Political Science** 3 Credits

Intensive study of a specialized topic in political science. The topic to be studied and the subfield of the course are announced prior to the relevant registration period.

*Prerequisites:* Junior standing and Two courses in political science. *Repeatable course:* Students may repeat the course for credit provided a different topic is covered. *Offered:* Occasionally.

**POS 481 • Internship in Political Science** 1-4 Credits

An off-campus working experience in a government agency or political organization under appropriate supervision. Placement is individually arranged with the Political Science department.

*Prerequisites:* Consent of department chairperson. *Offered:* Fall, Spring.

**POS 491 • Applied Humanities Seminar** 4 Credits

An interdisciplinary, experiential capstone course in which students draw on their studies in history, philosophy, political science, or the digital humanities in order to study a major challenge in contemporary society, analyzing causes, effects, and existing responses, and then work together to propose new responses to it.

*Prerequisites:* Senior standing and Major in one of the following programs: history, philosophy, political science, digital humanities, international relations, business political science, or social studies education 5-12. *TR; Fall, Spring.*

**POS 499 • Senior Seminar** 4 Credits

Advanced research and analysis in selected problems and value questions in political science.

*Prerequisites:* POS 211 and Senior standing or Consent of instructor. *Offered:* Fall, Spring.

**PSY 100 • Introduction to Psychology** 3 Credits

Methods, theories, and principal findings of psychological investigation.

*Offered:* Fall, Spring.

**PSY 203 • Lifespan Development** 3 Credits

Physical, cognitive, emotional, social, moral, and spiritual development from conception to death.

Includes a consistent focus on individual differences.

*Prerequisites:* PSY 100. *Offered:* Fall, Spring. *Special Notes:* Students may not receive credit for PSY 203 and PSY 206.

**PSY 206 • Child and Adolescent Development** 3 Credits

Interacting processes of physical, cognitive, social, emotional, moral, and spiritual development from conception through adolescence. Includes observations of children.

*Prerequisites:* PSY 100. *Offered:* Fall. *Special Notes:* Students may not receive credit for both PSY 206 and PSY 203.

**PSY 211 • Adult Development and Aging** 3 Credits

Interacting processes of physical, cognitive, social, emotional, moral, and spiritual development and change from early adulthood until death.

*Prerequisites:* PSY 100. *Offered:* Spring.

**PSY 215 • Social Psychology** 3 Credits

Behavior and experience of individuals and groups in relation to other individuals and groups. Theory, method, and findings in areas such as conformity, persuasion, social cognition, attraction, altruism, aggression, prejudice, group behavior, and applied topics.

*Prerequisites:* PSY 100. *Offered:* Fall, Spring.

**PSY 230M • Introduction to Statistical Methods and Experimental Design** 4 Credits

Descriptive, correlational, and inferential statistics, plus experimental design. Parametric and nonparametric statistical techniques are taught with emphasis on designing and conducting two-group experiments and analyzing the data.

*Offered:* Fall, Spring. *Special Notes:* Students may not receive credit for both PSY 230M and MAT 207M or HAS 250M.

**PSY 300 • Psychopathology 3 Credits**

Classification, causes, symptoms, and treatment of various forms of psychopathology. Analysis of Christian and secular perspectives of psychopathology and a survey of some major issues in the field of mental health.

*Prerequisites: PSY 100. Offered: Fall, Interim, Spring.*

**PSY 304 • Introduction to Forensic Psychology 3 Credits**

Provides students the opportunity to explore psychological and social processes in the legal, judicial, and criminal investigation systems. Emphasis is placed upon students developing the capacity to evaluate relevant research theory and application in forensic psychology.

*Prerequisites: One of the following: ANT 200U, PSY 100, SOC 101, or SOW200U, or Consent of instructor. Offered: Fall, even # years.*

**PSY 305 • Personality 3 Credits**

Examination of traditional and contemporary theories of personality, with an emphasis on comparing and contrasting these theories. Explores non-western and Christian perspectives of the description and development of personality.

*Prerequisites: PSY 100. Offered: Spring.*

**PSY 308G • Cross-Cultural Psychology 3 Credits**

Behavior and experience related to cultural differences. Theory, method, and findings in areas of cognition, social psychology, and applied concerns. Specific people groups may be emphasized.

*Prerequisites: [GES 130; GES 160; Contemporary Western Life and Thought (L) course; World Cultures (U) course] or [GES 244; World Cultures (U) course]. Offered: Spring.*

**PSY 310 • Addiction and Recovery 3 Credits**

Psychological, physiological, and causal aspects of addiction, with emphasis on understanding the experience of persons with addiction. Addictions studied include drugs, alcohol, gambling, sex, and the internet. Also covers family issues related to addiction, models of recovery, and treatment options. Integration of Christianity with this topic throughout the course.

*Prerequisites: PSY 100. Offered: Interim.*

**PSY 313G • Families in Cross-cultural Perspective 3 Credits**

Contemporary, historical, and cross-cultural, predominantly non-Western perspective on a variety of family systems and the people living in them. Explores values and assumptions underlying these systems, roles, intergenerational relationships, identity formation, and developmental tasks.

*Prerequisites: [GES 130; GES 160; Contemporary Western Life and Thought (L) course; World Cultures (U) course] or [GES 246; World Cultures (U) course]. Offered: Fall.*

**PSY 315 • History of Psychology 3 Credits**

Historical roots of contemporary psychology. Focus is on the influence of historical trends, people, and events on the evolution of psychological questions, constructs, methods, and issues.

*Prerequisites: PSY 100 and Junior or senior standing. Offered: Spring.*

**PSY 316 • Consciousness: Psychology and Philosophy in Dialogue 3 Credits**

A team-taught investigation of ancient, medieval, and modern philosophies of consciousness and the historical roots of contemporary psychology. Shows how philosophical and psychological theories of consciousness transcend disciplinary boundaries. Focuses on interaction between philosophy and psychology, emphasizing the origins of cognitive science in philosophy of mind and consciousness.

*Prerequisites: PSY 100 or One philosophy course. Offered: Occasionally. Special Notes: Carries cross-credit in philosophy.*

**PSY 317 • Political Psychology 3 Credits**

Causes, dynamics, and consequences of human thinking and action in the context of politics. The psychology of decision making, political attitude formation, public opinion, personality and emotions, intergroup relations, ideology, and the role of mass media in politics.

*Prerequisites: One political science course. Offered: Fall, odd # years. Special Notes: Carries cross-credit in political science.*

**PSY 320Z • European Pioneers in Psychology 3 Credits**

A study-abroad experience exploring prominent European figures in the history of psychology within the context of the major historical currents and schools. Cultural, philosophical, intellectual, and spiritual roots of psychological theory, especially in connection with host countries. Site and museum visits, and encounters with local professional and academic psychologists.

*Prerequisites: PSY 100; Junior or senior standing; Consent of instructors; Timely completion of application process. Offered: Occasionally interim.*

**PSY 323 • Motivation and Emotion 3 Credits**

How biological, environmental, cognitive, emotional, and personal systems interact to initiate and direct human behavior. How experimental psychologists study emotional and motivational systems.

*Prerequisites: PSY 100. Offered: Fall.*

**PSY 325G • Psychology of Religion 3 Credits**

Topics of central importance within many world religions (e.g., wisdom, love) examined through various psychological theories and empirical findings. Emphasizes the capacity to understand religious behavior and experience from psychological and religious perspectives.

*Prerequisites: [GES 130; GES 160; Contemporary Western Life and Thought (L) course; World Cultures (U) course] or [GES 244; World Cultures (U) course]. Offered: Spring.*

**PSY 330 • Disabilities and Giftedness 4 Credits**

Focus on the development of individuals with disabilities and giftedness from a lifespan perspective. Cognitive, physical, emotional, and sociocultural variables relevant to developmental delay; giftedness; learning disabilities; physical, sensory, and communication disabilities; emotional disturbance; and multiple disabilities. Critical analysis of psychosocial educational interventions. Service learning with those with disabilities.

*Prerequisites: EDU 240, PSY 203, PSY 206, or PSY 211; Junior standing. Offered: Fall.*

**PSY 335 • Psychological Assessment 4 Credits**

Methods of assessing human behavior and the nature and significance of individual differences. Includes basic psychometric theory; principles of test construction; and theory and utilization of current standardized tests of intelligence, achievement, and personality.

*Prerequisites: PSY 100 and PSY 230M. Offered: Spring.*

**PSY 340 • Physiological Psychology 3 Credits**

Physiological and neuroanatomical mechanisms underlying behavior; sensory mechanisms, wakefulness, and attention processes; and brain mechanisms of aggression, fear, pain, thirst, reproductive behavior, learning, and discrimination processes.

*Prerequisites: PSY 100 and Mathematics (M) course. Corequisites: Concurrent enrollment in PSY 341 is required. Offered: Fall.*

**PSY 341 • Physiological Psychology Lab 1 Credit**

Laboratory experience accompanying PSY 340.

*Corequisites: Concurrent enrollment in PSY 340 is required. Offered: Fall.*

**PSY 346 • Animal Behavior 3 Credits**

Behavior from primitive invertebrates to advanced mammals, highlighting trends in behavior systems. Natural setting studies in the ethology tradition, comparative psychology studies, and biosociological principles with their implications for human social systems.

*Prerequisites: PSY 100 or One course in biology. Corequisites: Concurrent enrollment in PSY 347 is required. Special Notes: Carries cross-credit in biology. Offered: Spring, odd # years.*

**PSY 347 • Animal Behavior Lab 1 Credit**

Laboratory course accompanying PSY 346.

*Corequisites: Concurrent enrollment in PSY 346 is required. Offered: Spring, odd # years. Special Notes: Carries cross-credit in biology.*

**PSY 348 • Conditioning and Learning** 3 Credits

Basic procedures of classical and operant conditioning, theories of learning, and applications of behavioral conditioning principles to selected problems in human learning. Includes laboratory experiences.

*Prerequisites: PSY 100 and Mathematics (M) course. Corequisites: Concurrent enrollment in PSY 349 is required. Offered: Spring.*

**PSY 349 • Conditioning and Learning Lab** 1 Credit

Laboratory experience accompanying PSY 348.

*Prerequisites: PSY 100 and Mathematics (M) course. Corequisites: Concurrent enrollment in PSY 348 is required. Offered: Spring.*

**PSY 350 • Cognitive Psychology** 3 Credits

Psychological theory and research concerning thinking, memory, reasoning, language, and problem solving. Includes laboratory experience.

*Prerequisites: PSY 100 and PSY 230M. Offered: Spring.*

**PSY 355 • Research Principles and Laboratory** 4 Credits

Research methods in psychology in the context of designing independent research. Standard research designs (experimental, quasi-experimental, and non-experimental) are evaluated in terms of threats to internal and external statistical construct validity.

*Prerequisites: PSY 100 and PSY 230M. Offered: Fall, Spring.*

**PSY 357 • Research Seminar** 3 Credits

Students develop a research project with faculty supervision in preparation for independent research. Seminar format allows for in-depth analysis of contemporary issues in the field of psychological science, and students apply these issues to their personal projects.

*Prerequisites: PSY 100, PSY 230M, PSY 355, and Consent of instructor. Offered: Spring.*

**PSY 399 • Topics in Psychology** 3 Credits

Contemporary concerns in psychology not covered in the current formal course offerings of the department.

*Prerequisites: PSY 100. Offered: Occasionally.*

**PSY 400 • Principles of Counseling and Psychotherapy** 3 Credits

Introduction and analysis of major therapy systems from Christian and secular perspectives, basic counseling techniques, and current ethical issues facing the counseling professions. Designed for students planning graduate study in human services.

*Prerequisites: PSY 100; PSY 300 or PSY 305. Offered: Fall, Spring.*

**PSY 430 • Advanced Psychopathology** 3 Credits

Explores issues pertaining to the nature and occurrence of psychological disorders, including classification, cultural context, developmental considerations, etiology, and treatment. Critical evaluation of contemporary theory and research, including conceptualizations, methodologies, and statistical approaches.

*Prerequisites: PSY 300. Offered: Fall, odd # years.*

**PSY 440 • Sensation and Perception** 3 Credits

A study of how the brain receives and interprets information from the environment. The biological operation of each of the senses is covered, as well as how the action of sense organs is translated into meaningful perceptions.

*Prerequisites: PSY 100 and M-tag course. Corequisites: Concurrent enrollment in PSY 441 is required. Offered: Spring, odd # years.*

**PSY 441 • Sensation and Perception Lab** 1 Credit

Laboratory experience accompanying PSY 440.

*Prerequisites: PSY 100 and M-tag course. Corequisites: Concurrent enrollment in PSY 440 is required. Offered: Spring, odd # years.*

**PSY 481 • Internship in Psychology 3-4 Credits**

A directed experience relevant to psychology in an off-campus setting.

*Prerequisites: Consent of instructor. Offered: Fall, Spring.*

**PSY 493 • Psychology Internship and Seminar 4 Credits**

A professionally supervised, applied learning experience in the work world. Includes a seminar component in which students meet regularly with the Bethel faculty instructor. Facilitates students' processing of their internship experiences and offers a forum to discuss internship-related issues and career exploration.

*Prerequisites: Major in psychology; Senior standing; Minimum 2.25 GPA in psychology courses, 2.0 cumulative GPA. Offered: Spring, Summer.*

**PSY 498 • Research 2-4 Credits**

Work with a psychology faculty member on an empirical research project. Emphasis on the use of research methodology, techniques, and psychological theory. The work may be spread over two semesters.

*Prerequisites: Major in psychology; invitation of supervising faculty member; PSY 230M. Grade exceptions: Graded on an S/U basis. Offered: Fall, Spring.*

**PSY 499 • Senior Seminar 3 Credits**

Foundational issues in psychology and the interface of psychology, Christianity, and other disciplines. Includes an in-depth individual writing project.

*Prerequisites: Major in psychology and Senior standing. Offered: Fall, Spring.*

**REL 201 • Religion and Art in Asia 3 Credits**

Examination of artistic expressions of the major religious traditions of India, China, Japan, and Southeast Asia. Definitions of "religion" and "art" provide a guide for identifying and understanding Asian architecture, statuary, and paintings. Doctrinal and ritual elements of the major traditions are explained, and art that symbolizes and expresses these elements is analyzed.

*Offered: Spring, even # years.*

**REL 202 • Introduction to Religious Studies 3 Credits**

An introduction to the world's religious traditions and to the history and methods of religious studies as a discipline. Using primary and secondary sources, this course focuses on affirmations regarding ultimate reality as it relates to the meaning and purpose of human existence within various religious and cultural contexts.

*Prerequisites: GES 130 (may be taken concurrently) or GES 244 (may be taken concurrently). Offered: Fall or Spring.*

**REL 205U • Religions of India, China and Japan 3 Credits**

Introduction to the study of religion and its application to religions of India, China, and Japan. The origin, development, and diversity of major and minor religions including Hindu, Buddhist, Confucian, and Shinto traditions through reading primary and secondary literature. The spread and importance of these traditions in America is demonstrated.

*Prerequisites: GES 130 (may be taken concurrently) or GES 244 (may be taken concurrently). Offered: Fall.*

**REL 206UZ • Religious Traditions in Asia: Thailand 3 Credits**

Formal academic study, direct observation of, and interaction with the Buddhist, Muslim, Christian, and traditional religions on location in Thailand. The presence of mosques, pagodas, temples, churches and shrines provides the opportunity to engage with living representatives of each tradition. Interaction with representatives of the religions supplement academic learning.

*Prerequisites: GES 130 (may be taken concurrently) or GES 244 (may be taken concurrently). Offered: Occasionally interim.*

**REL 212U • History of Islam 3 Credits**

Islam from its inception and development to Islam as it is practiced today. Students interact with members of the Islamic community in Minnesota in an attempt to understand Islam from the personal experiences of Muslims. Contemporary issues and controversies are examined through the lens of the Muslim experience throughout history.

*Prerequisites: GES 130 (may be taken concurrently) or GES 244 (may be taken concurrently). Offered: Spring. Special Notes: Carries cross-credit in history.*

**REL 225L • New Religious Movements 3 Credits**

History, beliefs, and practices of the major alternative religions active in America today, including Mormonism, Jehovah's Witnesses, offshoots of Eastern religious traditions, and the New Age movement. Relationships of these movements to their parent traditions are discussed and comparative analyses drawn.

*Prerequisites: BIB 101; GES 130; GES 160 (may be taken concurrently) or GES 244 (may be taken concurrently). Offered: Occasionally.*

**REL 230L • Politics and Religion in the United States 3 Credits**

Examines the historical and contemporary relationship between religion and politics in the United States. Divisions and political affiliations of various religious communities are considered alongside discussion of secularism, pluralism, and civil religion in America.

*Prerequisites: GES 130; GES 160 (may be taken concurrently) or GES 244 (may be taken concurrently). Offered: Interim. Special Notes: Carries cross-credit in political science.*

**REL 328G • Muslim Women in History 3 Credits**

Global survey of the lives of Muslim women from the 7th century to the present. Examination of how Muslim women's lives have historically been shaped by their social context, with particular attention to religious interpretation and expression, culture, ethnicity, and geographic location.

*Prerequisites: [GES 130; GES 160; Contemporary Western Life and Thought (L) course; World Cultures (U) course] or [GES 244; World Cultures (U) course]. Offered: Interim. Special Notes: Carries cross-credit in history.*

**REL 356 • Judaism 3 Credits**

Exploration of the diverse political, religious, and social expressions of Judaism through study of the significance of the Jewish liturgical year in original contexts, medieval and modern European contexts, and American contexts.

*Prerequisites: BIB 101 and GES 130 (may be taken concurrently). Offered: Occasionally.*

**REL 401 • Christianity and the World's Religions 3 Credits**

Exploration of the historical and contemporary relationships of Christianity and various world religions, specifically focused at the theological level. Focus rotates from year to year, emphasizing the interfaith dialogue between Christianity and one other world religious tradition.

*Prerequisites: BIB 101 and THE 201. Offered: Occasionally. Special Notes: Carries cross-credit in biblical and theological studies.*

**RES 201 • Introduction to Reconciliation Studies 3 Credits**

Overview of theory and literature in the field, contributing factors leading to the need for reconciliation, and paradigms for reconciliation praxis. Biblically-based principles and processes for moving toward societal reconciliation. Cultural and religious diversity, conflict resolution, spiritual disciplines, social and economic justice issues, and related subjects are covered.

*Offered: Fall, Spring.*

**RES 207U • Fannie Lou Hamer, Martin Luther King Jr., Malcolm X, and Our Multicultural World 3 Credits**

Compares and contrasts the lives and messages of Fannie Lou Hamer, Martin Luther King, Jr., and Malcolm X. Considers how their teachings and practices address various forms of inequity within the context of African-American culture and religion, the cultural diversity of the United States, and the rest of the world.

*Prerequisites: GES 130 (may be taken concurrently) or GES 244 (may be taken concurrently). Offered: Fall, Spring.*

**RES 215L • European American Experiences, Whiteness, and Reconciliation** 3 Credits

Explores how family history and upbringing influence understanding of whiteness. Since ideological constructions of whiteness are linked to various injustices confronting people of color, students will wrestle with how to adopt practices within the spirit of reconciliation that break down walls of division for the greater good.

*Prerequisites: (GES 130; GES 160 (may be taken concurrently)) or GES 244; Sophomore standing. Offered: Fall.*

**RES 220A • Hip-Hop, The Spoken Word, and Reconciliation** 3 Credits

Engages Hip-Hop and the spoken word as our modern-day Psalms: raw, uncompromising, challenging, confrontational, and confessional. Explores how a conversation among Hip-Hop, the spoken word, and biblical stories cultivate a relationship with God as transparent as the Psalms and Jesus' own relationship with his Father.

*Prerequisites: Sophomore standing. Offered: Spring.*

**RES 230Z • Justice and Reconciliation** 4 Credits

How does Jesus engage the relationship between trauma, justice, and reconciliation? What contemplative practices can re-energize efforts to tackle inequity? Learning from Twin Cities leaders, churches, and community educators intent on co-creating systems and services that honor the marginalized complements biblical interpretations of justice, scholarly analysis, and memoirs addressing injustice.

*Offered: Interim.*

**RES 305 • Conflict Resolution and Mediation Skills** 3 Credits

Provides practical peacemaking and reconciliation skills relevant to helping Christians resolve conflict in a healthy, balanced way. Focus on using experiential learning to develop negotiation and mediation skills.

*Prerequisites: RES 201. Offered: Fall, Spring.*

**RES 320 • The Power of Story and Reconciliation** 3 Credits

Explores complex stories that can nurture cultural humility and empathy. Includes readings of creative and biblical narratives with emphasis on listening deeply to others' experiences. Confronts a world divided by difference and explores how stories can foster understanding between peoples.

*Prerequisites: Sophomore standing. Offered: Fall.*

**RES 340Z • Principles and Methods of Intercultural Leadership** 4 Credits

Grounded in a cross-cultural experience, focuses on practical principles and methods for intercultural visioning, administration, training, and communication for cross-cultural work. Emphasizes developing intercultural competencies needed for collaborative and mutually beneficial outcomes in diverse environments (e.g., mission or ministry; profit and not-for-profit; governmental or agency work).

*Prerequisites: RES 201 or RES 215L; Junior or senior standing or Consent of the instructor. Offered: Spring.*

**RES 350G • Racial Reconciliation** 3 Credits**RES 481 • Internship in Reconciliation Studies** 3-4 Credits

Practical learning experience to apply understanding and skills of reconciliation studies in a real-world setting.

*Prerequisites: RES 201; Major in reconciliation studies; Junior or senior standing. Offered: Occasionally.*

**RES 499 • Senior Seminar in Reconciliation Studies** 4 Credits

Prepares students to use the lenses of Christ-centered biblical "reconciliation" theology, critical thinking, multicultural perspectives, social-change analysis, and conflict resolution skills for leadership in the work of reconciliation in society. Students study theoretical underpinnings of reconciliation studies and leadership models of reconciliation practice.

*Prerequisites: RES 201 and Senior standing. Offered: Fall.*

**SOC 101 • Introduction to Sociology** 3 Credits

Major concepts, theories, methodologies, findings, controversies, and history of sociology. Contributions of sociology to Christian life and thought.

*Offered: Fall, Spring.*

**SOC 229U • Interaction with Urban Life and Systems** 3 Credits

Experientially based introduction to the religious, ethnic, and economic diversity of urban life. Formal and informal interrelationships in the urban environment and various models for approaching urban ministry. Intensive study of and interaction with a specific cultural group that lies outside the majority culture(s) found in North America.

*Prerequisites:* GES 130 (may be taken concurrently) or GES 244 (may be taken concurrently). Offered: Interim.

**SOC 240 • Socioeconomic & Justice Issues in Market Economies** 3 Credits

Equips students with knowledge and skills for understanding and critically evaluating how market economies operate, their broad socioeconomic consequences, and their impact on the lives of socially disadvantaged people.

*Offered:* Spring. *Special Notes:* Carries cross-credit in social work.

**SOC 304G • Sociology of Crime and Deviance** 3 Credits

Introduction to comparative criminal justice systems, and the role of the police, the courts, and correction institutions in both developed and developing societies. Cross-cultural and comparative analysis of theories and data used to analyze criminal behavior and deviance. How the media and crime-control agencies shape understanding of crime.

*Prerequisites:* [GES 130; GES 160; Contemporary Western Life and Thought (L) course; World Cultures (U) course] or [GES 244; World Cultures (U) course]. Offered: Fall, even # years. *Special Notes:* POS 202U is a recommended prerequisite.

**SOC 315 • Social Responsibility in the Marketplace** 3 Credits

Explores the reciprocal relationship between businesses and society from a multi-disciplinary perspective. Examines contrasting ethical arguments in historical contexts about the role of business in society. Discusses how healthy relationships can be promoted between business and society for the benefit of both.

*Prerequisites:* [GES 130; World Cultures (U) course] or [GES 246; World Cultures (U) course]. Offered: Fall. *Special Notes:* Carries cross-credit in reconciliation studies.

**SOC 318G • The Urban Church** 3 Credits

Taught on site in cities around the world (e.g., Amsterdam). Students research the challenges of urban communities and help local churches develop church-based responses to these challenges. Intensive interaction with urban communities and churches. Method for applied and experiential learning in response to social needs.

*Prerequisites:* [GES 130; GES 160; Contemporary Western Life and Thought (L) course; World Cultures (U) course] or [GES 244; World Cultures (U) course]. Offered: Occasionally.

**SOC 330G • Sociology of Third World Development** 3 Credits

Critically examines economic development theories and sociological issues for developing Third World countries. Strategies for promoting economic development and cultural change internationally, regionally, nationally, and locally. Issues and processes involved in community development in a globalized society.

*Prerequisites:* [GES 130; GES 160; Contemporary Western Life and Thought (L) course; World Cultures (U) course] or [GES 244; World Cultures (U) course]. Offered: Spring.

**SOC 381G • Urbanism: A Way of Life** 3 Credits

Comparative study of urban life and urban social and cultural forces. Ways in which humans construct community; develop distinct urban lifestyles; and interact across social, ethnic, and religious boundaries. Special attention given to implications for urban planning, community development, and urban ministry.

*Prerequisites:* [GES 130; GES 160; Contemporary Western Life and Thought (L) course; World Cultures (U) course] or [GES 244; World Cultures (U) course]. Offered: Fall.



**SOC 387Z • Cross Cultural Experience** 4 Credits

An intensive experience of living and communicating in another culture for a minimum of two months. Student is fully immersed in the culture as much as possible and guided by a mentor from the host culture.

*Prerequisites:* ANT 200U; Systems (G) course; Application approved by the department prior to the experience. *Grade exceptions:* Graded on an S/U basis. *Offered:* Occasionally. *Special Notes:* Students may receive credit for only one of the following: SOC385, SOC 387Z, and SOC389.

**SOW 200Z • Introduction to Social Work** 4 Credits

Overview of social work mission, core values, history, and fields of practice. Understanding dimensions of diversity, cultures, and structures that may oppress and marginalize people groups. Significant cross-cultural, community-based service learning in which students communicate and collaborate with diverse individuals. Consideration of social work as career choice.

*Prerequisites:* Sophomore standing and Major in social work or Minor in social welfare studies or Consent of instructor. *Offered:* Fall, Spring.

**SOW 240 • Socioeconomic & Justice Issues in Market Economies** 3 Credits

Equips students with knowledge and skills for understanding and critically evaluating how market economies operate, their broad socioeconomic consequences, and their impact on the lives of socially disadvantaged people.

*Offered:* Spring. *Special Notes:* Carries cross-credit in sociology.

**SOW 250 • Social Welfare History** 3 Credits

Examines the historical movements of social welfare responses to the poor and oppressed from the colonial period to the present, emphasizing economic, demographic, cultural, and political forces. Historical documents representing significant turning points in society are presented to gain appreciation of the linkage among past, present, and future reforms.

*Prerequisites:* Major in social work or Minor in social welfare studies or Consent of instructor. *Offered:* Spring.

**SOW 304 • Social Work Practice I** 3 Credits

Generalist social work theory and practice with organizations and communities. Application of human behavior in the social environment. Research-based knowledge emphasized. Assignments in community settings focus on engagement and assessment; dimensions of diversity; interaction of social systems; and strategies to promote human and civil rights.

*Prerequisites:* SOW 200Z; Major in social work; Candidacy status in the social work program. *Corequisites:* Concurrent enrollment in SOW 313 and SOW 330. *Offered:* Fall.

**SOW 305 • Social Policy Practice** 4 Credits

Interrelationship of social problems, social welfare policies, and service delivery from historical, economic, political, and program perspectives. Social systems content applied to social policy analysis. Students develop, analyze, advocate, and provide leadership for policy and service delivery that promote economic and social justice through community-based projects.

*Prerequisites:* SOW 200Z and [SOW 304; SOW 313; SOW 330; Major in social work; Admission to the social work program] or [Minor in social welfare studies (those students minoring in social welfare studies must obtain consent of instructor)]. *Offered:* Spring.

**SOW 307Z • Intentional Urban Living I** 2 Credits

Intensive urban learning opportunity involving exploration and analysis of urban community, urban neighborhood social and political structures, and theological issues that arise in an urban context. Involves living in an urban neighborhood in Minneapolis or St. Paul and substantial interaction in the neighborhood.

*Prerequisites:* Consent of instructor. *Offered:* Fall.

**SOW 308Z • Intentional Urban Living II 2 Credits**

Intensive urban learning opportunity involving exploration and analysis of urban community, urban neighborhood social and political structures, and theological issues that arise in an urban context. Involves living in an urban neighborhood in Minneapolis or St. Paul and substantial interaction in the neighborhood. Involves an individualized research project and/or action project focused on a change initiative.

*Prerequisites: Consent of instructor. Offered: Spring.*

**SOW 313 • Social Work Practice II 3 Credits**

Generalist social work theory and practice with individuals and families. Beginning professional development, critical thinking, effective communication, Human Behavior and the Social Environment (HBSE), ethical and evidenced-based practice. Simulated case assignments develop knowledge and skills of social work practice: engagement, assessment, planning, intervention, evaluation, and termination.

*Prerequisites: SOW 200Z; Major in social work; Candidacy status in the social work program. Corequisites: Concurrent enrollment in SOW 304 and SOW 330. Offered: Fall.*

**SOW 326 • Restorative Justice 3 Credits**

Examines and analyzes the philosophy and principles of restorative justice, including its historical and theological roots by comparing and contrasting retributive and restorative paradigms. Applications of restorative justice examined from the perspective of victim-offender dialogue and the use of restorative justice principles in offender reintegration.

*Prerequisites: SOC324. Offered: Spring, odd # years. Special Note: carries cross-credit with sociology.*

**SOW 327G • Social Perspective, Human Worth, and Social Action 3 Credits**

Examines historical and current societal conditions and their impact on individuals and communities. Culture, power, oppression, exclusion, and the impact of diverse realities in the U.S. are explored. Comparative examination by synthesizing contemporary writings, social theory, and diverse voices. Experiential learning and dialogue promote understanding, justice-seeking strategies, and social action.

*Prerequisites: [GES 130; GES 160; Contemporary Western Life and Thought (L) course; World Cultures (U) course] or [GES 244; World Cultures (U) course]. Offered: Spring.*

**SOW 330 • Social Work Field Experience I 2 Credits**

Introductory field experience in a multi-service community-based agency serving an ethnically diverse population. Apply and integrate beginning knowledge, values, skills, and ethics with an emphasis on developing a professional identity. Weekly on-campus field seminar while students work a minimum of 80 hours in a field setting under agency supervision.

*Prerequisites: SOW 200Z; Major in social work; Candidacy status in the social work program; Consent of instructor. Corequisites: Concurrent enrollment in SOW 304 and SOW 313. Offered: Fall.*

**SOW 331 • Social Work Field Experience II 2 Credits**

Apply and integrate beginning knowledge, values, skills, and ethics for social work practice with an emphasis on diversity, human rights and justice, and professional generalist practice. Weekly on-campus field seminar supports integration while students work a minimum of 100 hours in field setting under agency supervision.

*Prerequisites: SOW 304; SOW 313; SOW 330; Major in social work; Admission to the social work program; Consent of instructor. Offered: Spring.*

**SOW 351 • Methods of Applied Social Research 4 Credits**

Social research methods, including an emphasis on becoming proficient and critical consumers of research-based data, for the purposes of knowledge advancement, informed practice, and program and practice effectiveness evaluation.

*Prerequisites: SOW 200Z; Mathematics (M) course (PSY 230M recommended); Major in social work; Candidacy status in social work program or Minor in social welfare studies (those students minoring in social welfare studies must obtain consent of instructor). Offered: Fall.*

**SOW 405 • Social Work Practice III 4 Credits**

Generalist social work theory applied to integrated practice within client systems. Emphasis is on families and groups and on the planned change process. Student development of a group work project and case study review promote application of critical thinking, research-informed practice and culture competence.

*Prerequisites:* SOW 200Z; SOW 304; SOW 313; SOW 330; SOW 331; Admission to the social work program.  
*Corequisites:* Concurrent enrollment in SOW 432. Offered: Fall.

**SOW 431 • Conversations about End of Life 1 Credit**

Development of advance care planning (ACP) facilitation skills in the context of faith, cultural, healthcare system, and societal perspectives. A First Steps ACP Facilitator Certificate is available for students who successfully complete ACP Facilitator requirements.

*Prerequisites:* Senior standing in nursing or social work, or Consent of instructor. Offered: Spring. Special Notes: Carries cross-credit in nursing.

**SOW 432 • Social Work Field Instruction I 3 Credits**

Field practicum in which students perform the role of a professional social worker under supervision of a qualified field instructor. Weekly on-campus field seminar supports integration of theory with social work practice. Minimum of 135 hours in the field. A structured learning contract applies social work knowledge, values, and skills.

*Prerequisites:* Admission to the social work program; Admission to the social work Field Program; Consent of instructor. *Corequisites:* Concurrent enrollment in SOW 405. Offered: Fall.

**SOW 433 • Social Work Field Instruction II 3 Credits**

A continuation of SOW 432. Time involvement must total a minimum of 135 hours in the field. Satisfactory progress must be made toward competence in professional social work practice.

*Prerequisites:* SOW 432; Admission to the social work program; Admission to the social work Field Program; Consent of instructor. *Corequisites:* Concurrent enrollment in SOW 434 and SOW 499. Offered: Spring.

**SOW 434 • Social Work Field Instruction III 3 Credits**

A continuation of SOW 433. Time involvement must total a minimum of 135 hours in the field. Satisfactory progress in SOW 432/433/434 on field assignments, learning contract, and 400 hours of supervised practice indicate student's readiness to perform the role of a generalist social work practitioner.

*Prerequisites:* SOW 432 and Admission to the social work program. *Corequisites:* Concurrent enrollment in SOW 433 and SOW 499 is required. Offered: Spring.

**SOW 499 • Senior Integrative Seminar 3 Credits**

Integration of generalist social work knowledge, values, and skills through ethics-based case studies and completion of practice/program evaluation research applied to field practicum setting. Critical thinking, leadership, and scholarship emphasized.

*Prerequisites:* SOW 405; SOW 432; Admission to the social work program. *Corequisites:* Concurrent enrollment in SOW 433 and SOW 434 is required. Offered: Spring.

**SPA 101 • Introductory Spanish I 4 Credits**

Listening, speaking, reading, and writing. Opportunities for oral and written practice encourage actual communication in Spanish.

*Prerequisites:* No more than one year of high school Spanish or Placement exam. Offered: Fall, Spring.

**SPA 102S • Introductory Spanish II 4 Credits**

Continuation of functional, practical understanding and communicative use of the Spanish language. Further study of Spanish history and culture through films, discussions, and readings.

*Prerequisites:* SPA 101 or Placement exam. Offered: Fall, Spring.

**SPA 120A • Photography in Spain 3 Credits**

Technical and conceptual acquaintance with the medium of photography and its vocabulary within the realm of high art. Includes camera operation, black and white film developing, black and white print processing, and print finishing.

Offered: Fall. Special Notes: Course is taught and assignments are completed in Spanish. Carries cross-credit in art.

**SPA 201S • Intermediate Spanish I** 3 Credits

Synthesis and expansion of language study in order to further develop communicative language ability. Study of the rich cultural diversity in the Spanish-speaking world.

*Prerequisites: SPA 102S or Placement exam. Offered: Fall, Spring.*

**SPA 202UZ • Intermediate Spanish II** 4 Credits

A further development of communicative language ability through the study of the rich cultural diversity in the Spanish-speaking world. Topics include religious practices, Hispanics in the United States, and violations of human rights. Service-learning experience required.

*Prerequisites: SPA 201S or Placement exam; GES 130 (may be taken concurrently) or GES 244 (may be taken concurrently). Offered: Fall, Spring. Special Notes: This course meets the S-tag General Education course requirement.*

**SPA 208S • Spanish for Health Professionals** 3 Credits

Designed for those studying or preparing for healthcare professions. Emphasis on building culturally and linguistically competent communication skills with Spanish-speaking immigrants in healthcare settings.

*Prerequisites: SPA 201S or Placement exam. Offered: Occasionally.*

**SPA 228S • Intensive Language Study in the Spanish-Speaking World** 3 Credits

Study of the Spanish language and Hispanic culture taught in a Spanish-speaking country through an approved language school. Homestay required.

*Prerequisites: Two semesters of intermediate Spanish at the college level or Placement exam; Consent of department. Grade exceptions: Graded on an S/U basis. Offered: Interim, by arrangement. Special Notes: Program must be approved by the Languages and Cultures department in advance. Enrollment is limited.*

**SPA 290S • Ibero-American History** 3 Credits

An examination of key historical processes in Spain, Latin America, and the Spanish-speaking communities in the United States with a focus on social, economic, political, geographic, and religious dimensions.

*Prerequisites: SPA 202UZ, SPA 208S, or Placement exam. Offered: Fall, Spring.*

**SPA 292S • Ibero-American History in Spain** 4 Credits

An examination of key historical processes in Spain, Latin America, and the Spanish-speaking communities in the United States with a focus on social, economic, political, geographic, and religious dimensions.

*Prerequisites: SPA 202UZ or SPA 208S. Offered: Fall.*

**SPA 300 • Introduction to Hispanic Literature** 4 Credits

Readings in novels, essays, short stories, poetry, newspapers, and magazines from Latin America and Spain.

*Prerequisites: SPA290 or SPA292 (may be taken concurrently). Offered: Fall (Spain Term). Special Notes: Students may not receive credit for both SPA 300 and SPA 305.*

**SPA 301U • Hispanic Cultures** 4 Credits

Study of the history, traditions, cultural practices, values, and social structures of Latin America and Spain. Service-learning experience may be required.

*Prerequisites: GES 130 (may be taken concurrently) or GES 244 (may be taken concurrently); SPA290, SPA291, or SPA292. Offered: Spring.*

**SPA 303U • Historic Spain and its Cultures** 4 Credits

Study of the multi-cultural richness of Spain in its unique history, society, politics, art, film, and music. Students participate in a series of field trips to places of cultural and historical interest in Segovia and to museums in Madrid.

*Prerequisites: GES 130 or GES 244 (may be taken concurrently), SPA290, SPA292 (may be taken concurrently), or Consent of instructor. Offered: Fall.*

**SPA 305 • Readings from Latin America and Spain** 3 Credits

Readings in novels, essays, short stories, and poetry from Latin America and Spain.

*Prerequisites: SPA 290S or SPA 292S. Offered: Fall. Special Notes: Students may not receive credit for both SPA 305 and SPA 300.*

**SPA 312 • Contemporary Literature** 4 Credits

Prose and poetry from selected contemporary Latin American and Spanish authors.

*Prerequisites: SPA 300 or SPA 305. Offered: Fall, even # years.*

**SPA 313 • Classical Literature** 4 Credits

Prose and poetry from the classical literature of Spain.

*Prerequisites: SPA 300 or SPA 305. Offered: Fall, odd # years.*

**SPA 316 • Modern Spain: An Examination of Ethics - Spain** 4 Credits

An examination of moral and ethical questions during the Spanish Civil War, the Franco regime, and post-Franco Spain. Topics include national unity, justice, political assassination, the responsibility of individuals in society, Basque nationalism, the role of the United States, immigration, and the role of the Catholic Church.

*Prerequisites: SPA 305 or Concurrent enrollment in SPA 300. Offered: Fall.*

**SPA 317 • Advanced Communication in Spain** 4 Credits

Further development of communicative ability in Spanish, including reading, writing, listening, and conversational skills. Students write compositions, participate in discussions, have conversational exchanges with Spanish university students, give presentations, and read short essays.

*Prerequisites: SPA 301U or SPA 303U (may be taken concurrently) or Consent of instructor. Offered: Fall.*

**SPA 318 • Classical Literature in Spain** 4 Credits

Prose and poetry from the classical literature of Spain.

*Prerequisites: SPA 305 or Concurrent enrollment in SPA 300. Offered: Fall. Special Notes: Students may not receive credit for both SPA 313 and SPA 318.*

**SPA 322 • Advanced Spanish Communication** 4 Credits

Further development of communicative abilities in Spanish including reading, creative and academic writing, formal and informal discussions and debate, and formal presentation skills.

*Prerequisites: SPA 301U or SPA 303U. Offered: Spring.*

**SPA 327 • Marketing and Management in Spain** 3 Credits

Theoretical and practical concepts of marketing and management in the semi-globalized world. Understand the significant challenges globalization presents to management and marketing, specifically in the context of Spain. Business terminology and reality in a Spanish business environment.

*Prerequisites: SPA 202UZ. Offered: Fall. Special Notes: Course is taught and assignments are completed in Spanish. Course carries cross-credit in business.*

**SPA 481 • Internship in Spanish** 3-4 Credits

Cross-cultural experience to apply and expand Spanish communication knowledge and communication skills in an off-campus setting. Placements must be at an organization or business within the Latino community or in the Spanish-speaking world. Must be planned in advance of placement in consultation with the Languages and Cultures department.

*Prerequisites: Spanish major or minor or Enrollment in Spain term. Offered: Fall, Interim, Spring, Summer.*

**SPA 499 • Senior Seminar** 4 Credits

An in-depth study and presentation of a topic related to Hispanic cultures, literatures, or the Spanish language. Service-learning experience may be required.

*Prerequisites: Major in Spanish and Senior standing. Offered: Fall.*

**SPD 205 • Introduction to Special Education 2 Credits**

Identification of the impact historical and philosophical foundations, legal bases, and contemporary issues have on special education. Identification of common disability category characteristics. Description of the impact culture, faith, and linguistics have on special education. Description of how the Individuals with Disabilities Education Act (IDEA) impacts special education.

*Prerequisites: EDU 200; EDU 201; Admission to the Teacher Education program. Offered: See your advisor for course rotation.*

**SPD 208 • Introduction to Academic and Behavior Management for the Exceptional Learner 3 Credits**

Introduction to how special education and general education academic systems work together. Identification of functional behavioral assessments, processes, and principles of individual and school-wide systems of supports. Demonstration of how evidence-based instruction can be adapted. Identification of how required curricular components direction instruction. Analysis of positive instructional environments.

*Prerequisites: EDU 200 and EDU 201. Offered: See your advisor for course rotation.*

**SPD 220 • Reading Foundation 3 Credits**

Identification of relationships among reading, writing, and oral language, comprehension processes, and instructional strategies. Description of the structure of the English language and word identification strategies, and the role of vocabulary knowledge in language. Analysis of different texts for K-12 classrooms. Assessment strategies for reading and writing needs.

*Prerequisites: EDU 200 and EDU 201. Offered: See your advisor for course rotation. Special Notes: See your advisor if you have already taken EDU 272.*

**SPD 221 • Reading Field Experience 1 Credit**

Identification of relationships among reading, writing, and oral language, comprehension processes, and instructional strategies. Description of the structure of the English language and word identification strategies, and the role of vocabulary knowledge in language. Analysis of different texts for K-12 classrooms. Assessment strategies for reading and writing needs.

*Prerequisites: SPD 220. Offered: See your advisor for course rotation. Special Notes: See your advisor if you have already taken EDU 273.*

**SPD 300 • Characteristics of Mild-Moderate Disabilities 3 Credits**

Exploration of the five disability categories represented under Academic Behavioral Strategist (ABS). Identification of strategies that support stakeholders of children with mild-moderate needs. Explanation of topics that form the basis for special education practice for students with mild-moderate disabilities. Identification of the impact culture and linguistics has on special education.

*Prerequisites: EDU 200 and EDU 201. Offered: See your advisor for course rotation.*

**SPD 310 • Norm-Referenced Assessment 4 Credits**

Description of standards and critical elements in the special education assessment process. Identification of test development principles and evaluation of standardized assessment instruments for special education decision-making. Description of responsibilities of assessment team members. Synthesis of assessment data. Application of scriptural principles to assessment in special education.

*Prerequisites: Major in special education. Corequisites: Must be taken concurrently with SPD 370. Offered: See your advisor for course rotation.*

**SPD 318 • Foundations of Instructional Strategies for Students with Mild-Moderate Disabilities 4 Credits**

Development of an instructional sequence for students in special education. Evaluation of data for making accommodations and modifications. Identification of differentiation strategies. Application of evidence-based practices. Identification of the relationship between teaching and learning theories and academic standards. Exploration of the relationship between faith concepts and instruction in special education.

*Prerequisites: EDU 200 and EDU 201. Offered: See your advisor for course rotation.*

**SPD 325 • Special Education Planning and Programming 3 Credits**

Development and evaluation of an individual education program based on student assessment results. Consideration of technology, supplementary aids, services, and transition needs of students. Synthesis of cultural, ethnic, and linguistic diversity. Demonstration of best practice and collaboration techniques between school, family, and outside agencies.

*Prerequisites: Major in special education. Offered: See your advisor for course rotation.*

**SPD 331 • Responsive Instruction, Intervention, and Assessment 3 Credits**

Identification of appropriate assessment measures and professional resources related to interventions. Interpretation of assessment and progress monitoring data to make informed instructional and placement decisions. Creation of research-based interventions, instruction, and modifications based on data collected through collaboration with stakeholders. Description of student assessment results.

*Prerequisites: EDU 200 and EDU 201. Offered: See your advisor for course rotation.*

**SPD 341 • Introduction to Behavioral Methods & Mental Health for Mild to Moderate Special Needs 3 Credits**

Introduction to behavior methods and mental health for students with mild/moderate special education needs. Interventions for K-12 students with mental health and behavioral needs. Impact of mental health and behavioral diagnoses within K-12 education. Identification of roles of professionals within and outside the school related to mental health.

*Prerequisites: EDU 200 and EDU 201. Offered: See your advisor for course rotation.*

**SPD 355 • Classroom-Based Assessment 3 Credits**

Description of legal, professional, and ethical standards in assessment related to informal assessment measures and environmental factors influencing student achievement and behavior. Description of student's learning style, strengths, and analysis of behavior based on observations and assessment data. Identification of the influence diversity, age, and gender have on assessment.

*Prerequisites: Major in special education. Corequisites: Must be taken concurrently with SPD 370. Offered: See your advisor for course rotation.*

**SPD 370 • Assessment Field Experience 1 Credit**

Identification of students' strengths and needs through assessment. Identification of the purpose of multidisciplinary teams. Development of an evaluation report. Explanation of assessment results with family, student, and staff. Creation of interventions. Development of a plan for continued professional development in the area of assessment. 30 hours/10 weeks.

*Prerequisites: Major in special education. Corequisites: Must be taken concurrently with SPD 310 and SPD 355. Offered: See your advisor for course rotation.*

**SPD 373 • Academic Behavioral Strategist Field Experience 1 Credit**

Identification of students with mild to moderate disabilities through the special education referral, evaluation, and eligibility process. Clarification of IEP team meeting and development components, as well as roles and responsibilities of IEP team members. Identification of effective academic and behavioral interventions, accommodations, and modifications. Integration of faith and teaching.

*Prerequisites: Major in special education. Offered: See your advisor for course rotation.*

**SPD 375 • Consultation, Collaboration, & Resources 3 Credits**

Focus on the communication skills necessary to consult and collaborate effectively with parents, administrators, teachers, paraprofessionals, and agency personnel about the special needs of students. Identification of resources, outside agencies, as well as transition needs and services. Clarification of personal beliefs and adjusting to diverse student needs within special education.

*Prerequisites: Major in special education. Offered: See your advisor for course rotation.*

**SPD 480 • Student Teaching - Academic Behavioral Strategist** 14 Credits

Management of a special education teacher's responsibilities, implementation of procedures necessary to incorporate referral, assessment and evaluation, and IEP planning. Consultation with parents and professionals to provide special education services to students. Implementation of interventions. Analysis of personal and professional growth, development, and efficacy. 12 weeks supervised student teaching.

*Prerequisites: Admission to student teaching; 2.75 GPA; Major in special education. Offered: See your advisor for course rotation.*

**TEL 230 • Introduction to Teaching English to Speakers of Other Languages** 3 Credits

Overview of the field of teaching English to speakers of other languages (TESOL) for those considering employment in schools in the U.S. or abroad, or serving in missions or in the local community. Provides basic skills and resources for anyone interacting with new Americans.

*Offered: Occasionally interim or Spring.*

**TEL 240 • TESOL Practicum Abroad** 1 Credit

In consultation with the department, students select a program outside the United States in which they tutor English as a foreign language for at least three weeks. Prior to departure, students complete a study of the culture in which they will be living. Students share their experiences in a colloquium of TESL/TEFL majors upon their return.

*Prerequisites: LIN 210Z and Consent of the Languages and Cultures department. Grade exceptions: Graded on an S/U basis. Offered: By arrangement.*

**TEL 301 • Analysis of the English Language** 3 Credits

Overview of the English language structure geared to the needs of teachers of English to speakers of other languages (both EFL and ESL). Understanding and application of English grammar and pronunciation in order to explain various grammatical aspects and provide answers to student questions concerning English grammar.

*Prerequisites: LIN 210Z or LIN 300. Offered: Spring, odd # years.*

**TEL 305 • Teaching Language Skills for Second Language Learners** 3 Credits

The principles of teaching listening and speaking skills to second language learners. Strategies for teaching language skills including using authentic materials, creating meaningful communicative activities, and teaching with Total Physical Response (TPR) and Total Proficiency Through Reading and Storytelling (TPRS). Students create lesson plans and practice teaching with these strategies.

*Offered: Fall.*

**TEL 320 • Curriculum Development and Assessment** 3 Credits

Development of curricula for EFL/ESL students in various settings and with various needs, including special education. Appropriate teaching and assessment materials for the EFL/ESL classroom.

*Prerequisites: LIN 210Z. Offered: Spring. Special Notes: Can be taken concurrently with EDU 400.*

**TEL 481 • Internship in TESL/TEFL** 3-4 Credits

Supervised experience in an overseas school program or with a local agency to apply knowledge of and skills in teaching English to non-native speakers. Must be planned in advance of the placement in a consultation with the Languages and Cultures department.

*Prerequisites: Major or minor in TEFL. Offered: Fall, Interim, Spring.*

**THA 100A • Beginning Acting for Stage and Screen** 3 Credits

The art of acting. Workshop experiences to develop personal creative talents through an exploration of performance techniques including movement, improvisation, and stage acting.

*Offered: Fall, Spring.*

**THA 120A • Projects in Performance** 1 Credit

An individual project in backstage/technical work (set building, props, lights, or costumes) or acting to be done in conjunction with the theatre productions being performed during current semester.

Minimum of 30 hours. Class size depends on the needs for the individual production.

*Prerequisites: Consent of department. Offered: Fall, Spring even # years*



**THA 195 • Theatre Hour 0 Credit**

Attendance of two performances at an area theatre and discussion of topics of significance to theatre artists.

*Grade exceptions: Graded on an S/U basis. Offered: Fall, Spring. Special Notes: Theatre majors must register each semester in residence in order to complete the theatre attendance requirement for graduation.*

**THA 202A • Producing and Performing a Musical 3 Credits**

An intensive experience in the production and performance of a musical. Instruction and coaching in the unique art of musical theatre as well as direct involvement in all aspects of mounting a show according to a professional summer stock or repertory model.

*Prerequisites: Audition for and casting in the show. Offered: Interim.*

**THA 212A • Voice Production 3 Credits**

A group-intensive laboratory designed to explore the art of using the voice. Key skills such as projection, articulation, vocal flexibility, and vocal exercises designed to broaden and develop the vocal instrument.

*Prerequisites: Sophomore standing. Offered: Fall 2019, 2021.*

**THA 220 • Projects in Performance 1 Credit**

An individual project in acting, stage-managing, or design to be done in conjunction with the theatre productions being performed during current semester.

*Prerequisites: Casting in a production or Consent of department. Special Notes: Maximum of 1 credit per area, per semester and 4 credits per four years. Offered: Fall, Interim, Spring.*

**THA 302 • Producing and Performing a Musical 3 Credits**

Additional experience in the production and performance of a musical. Instruction and coaching in the unique art of musical theatre as well as direct involvement in all aspects of mounting a show according to a professional summer stock or repertory model.

*Prerequisites: THA 202A and Audition for and be cast in the show. Offered: Interim.*

**THA 320 • Projects in Performance 1 Credit**

An individual project in acting, stage-managing, or design to be done in conjunction with the theatre productions being performed during current term.

*Prerequisites: Casting in a production or Consent of department. Special Notes: Maximum of 1 credit per area, per semester and 4 credits per four years. Offered: Fall, Interim, Spring.*

**THA 330 • Topics in Theatre Arts 3 Credits**

A group-intensive laboratory designed to explore special topics in theatre such as playwriting, character/tap dance, theatre for youth and children, and other topics depending on student interest. Students may interact with theatre professionals and develop individual performance skills.

*Prerequisites: Consent of instructor and Sophomore standing. Offered: Occasionally.*

**THA 342 • Making Plays: Page to Stage 3 Credits**

Developing an idea, issue, or event into a stage performance. Students collaborate from inception to production - in devising, writing, and creating (both onstage and back-stage). Includes research, creative writing, visual arts, music, media/technical arts, and acting. Learn and grow in creatively telling important stories well.

*Prerequisites: Sophomore standing or Consent of instructor. Offered: Spring, odd # years.*

**THA 350 • Advanced Acting for Stage and Screen 3 Credits**

Advanced work in scene study, character analysis, and individual performance skills.

*Prerequisites: THA 100A. Offered: Fall, even # years*

**THA 360 • Musical Theatre 3 Credits**

The identification and development of a singer-actor's skills through classroom exercises and assignments utilizing the literature of musical theatre; process and value of group interaction and coaching. Includes various performances.

*Prerequisites: THA 100A, THA 202A, or Consent of instructor; Sophomore standing. Offered: Occasionally.*

**THA 420 • Projects in Performance** 1 Credit

An individual project in acting, stage-managing, or design to be done in conjunction with the theatre productions being performed during current semester.

*Prerequisites: Casting in a production or Consent of department. Special Notes: Maximum of 1 credit per area, per semester and 4 credits per four years. Offered: Fall, Interim, Spring.*

**THA 442 • Making Plays: Page to Stage** 3 Credits

Developing an idea, issue, or event into a stage performance. Students collaborate from inception to production - in devising, writing, and creating (both onstage and back-stage). Includes research, creative writing, visual arts, music, media/technical arts, and acting. Learn and grow in creatively telling important stories well.

*Prerequisites: Sophomore standing or Consent of instructor. Offered: Spring, odd # years.*

**THE 201 • Christian Theology** 3 Credits

Investigates central themes of the Christian faith from a primarily systematic perspective. Topics include Scripture, God, the person and work of Jesus Christ, salvation, and last things. Emphasis on the unity and diversity of theological beliefs within Christianity, and on the interrelationships among theological understanding, culture, and discipleship.

*Prerequisites: BIB 101; Sophomore standing. Offered: Fall, Interim, Spring.*

**THE 235 • Current Theological Controversies** 3 Credits

Study of a number of theological topics of contemporary interest or debate such as the Calvinism/Arminianism debate, the inerrancy of Scripture, the nature of divine foreknowledge, spiritual gifts, and end times controversies.

*Prerequisites: THE 201. Offered: Occasionally.*

**THE 240 • Topics in Theology** 3 Credits

Study of a theological area or topic. The specific topic is announced when the course is offered.

*Prerequisites: THE 201. Offered: Occasionally.*

**THE 256L • Christian Apologetics** 3 Credits

Study of the intellectual viability of the Christian faith. Topics include the nature of apologetics and apologetic method, theological and philosophical arguments for and against the existence of God, and historical and philosophical arguments for and against the central beliefs of Christianity.

*Prerequisites: THE 201 or GES 246; GES 130 and GES 160 (may be taken concurrently) or GES 244 (may be taken concurrently). Offered: Fall, Interim, Spring.*

**THE 263 • Christian Social Ethics** 3 Credits

Christian approaches to ethical problems within today's society, such as the morality of war, poverty and welfare, homelessness, racism, and human sexuality. Roles of Christians and churches in response to these issues. Classical ethical approaches of utilitarianism, Kant, and social contract ethics.

*Prerequisites: BIB 101; THE 201. Offered: Fall.*

**THE 310Z • Conflict, Reconciliation, and the Church** 3 Credits

Ministry in an urban, multicultural context. Emphasizes biblical, theological, and historical themes of reconciliation, diversity, poverty, and justice. Experiences include homeless shelters, youth ministry centers, spiritually formative practices, and the religious and cultural life of a major city.

*Prerequisites: THE 201; Junior standing. Special Notes: Carries cross listing in Biblical and Theological Studies. Offered: Interim.*

**THE 311 • Early Church to Reformation Theology in Global Perspective** 3 Credits

Explores the global historical development of Christian thought from the Early Church to the Reformation. Includes assessment of major figures such as Augustine and Aquinas, and developments such as early North African, Syriac, Byzantine, medieval Asian, and European theologies.

*Prerequisites: BIB 101; THE 201 or Consent of instructor. Offered: Fall.*

**THE 312L • Post-Reformation to Contemporary Theology in Trans-Atlantic Perspective** 3 Credits

Explores the global historical development of Christian thought from the Post-Reformation era to the present. Includes assessment of major figures such as Barth, Bonhoeffer, Schleiermacher, and Wesley and developments including African American, Feminist and Womanist theology, and Pietism.

*Prerequisites:* GES 130 and GES 160 (may be taken concurrently) or GES 244 (may be taken concurrently).

*Offered:* Spring.

**THE 315 • Contemporary Theological Issues** 3 Credits

Theoretical and practical engagement with the academic disciplines of theology. Considers contemporary theological issues facing the 21st century church and explores current research and writing in the fields of theology.

*Prerequisites:* THE 201 or Consent of the instructor. *Offered:* Spring.

**THE 326G • Christian Theology in Africa, Asia, and Latin America** 3 Credits

Introduces major theological themes and theories that have emerged in the socio-political and cultural contexts of sub-Saharan Africa, Asia, and Latin America. Offers critical and constructive dialogue with key theological themes and issues in Black, Feminist, Liberation, Dalit, and African theologies.

*Prerequisites:* [GES 130; GES 160; Contemporary Western Life and Thought (L) course; World Cultures (U) course] or [GES 244; World Cultures (U) course]. *Offered:* Occasionally fall

**THE 401 • Christianity and the World's Religions** 3 Credits

Exploration of the historical and contemporary relationships of Christianity and various world religions, specifically focused at the theological level. Focus rotates from year to year, emphasizing the interfaith dialogue between Christianity and one other world religious tradition.

*Prerequisites:* BIB 101 and THE 201. *Offered:* Occasionally. *Special Notes:* Carries cross-credit in religious studies.

**THE 431 • Advanced Topics in Systematic Theology** 3 Credits

Research on a topic in the area of systematic theology. The specific topic will be announced when the course is offered. Past offerings include Doctrine of God, Christology, Ecclesiology, and Pneumatology.

*Prerequisites:* THE 201 or Consent of instructor. *Offered:* Fall.

**THE 432 • Advanced Topics in Historical Theology** 3 Credits

Research on a topic in the area of historical theology. The specific topic will be announced when the course is offered. Past offerings include Barth and Bonhoeffer and History and Theology of Pietism.

*Prerequisites:* THE 201 or Consent of instructor. *Offered:* Occasionally.

**THE 433 • Advanced Topics in Philosophical Theology** 3 Credits

Research on a topic in the area of philosophical theology. The specific topic will be announced when the course is offered. Potential topics include Arguments for God's Existence, The Problems of Evil and Hell, and Science and Theology.

*Prerequisites:* THE 201 or Consent of instructor. *Offered:* Occasionally.

**THE 440 • Topics in Theology** 3 Credits

Research course in a topic in theology. Content determined by the professor in conjunction with students majoring in biblical and theological studies. Usually, the course entails an advanced study of one of the major doctrines of the Christian faith.

*Prerequisites:* THE 201 or Consent of instructor. *Offered:* Occasionally.

**THE 499 • Seminar: Theology** 3 Credits

A selected topic in theology related to a course theme. A major research project is followed by an oral and written presentation of its results.

*Prerequisites:* BIB 321; THE 315; Interpreting Biblical Themes (J) course; or Consent of instructor. *Offered:* Fall. *Special Notes:* Carries cross credit with biblical studies.