



FOREST ENTRANCE
HOLCOMB GARDENS

BUTLER UNIVERSITY

COLLEGE *of* LIBERAL ARTS *and* SCIENCES

Administration

Jay Howard, PhD, Dean; Stuart Glennan, PhD, Associate Dean; Jennifer L. Poor, PhD, Associate Dean for Student Affairs

College Website

www.butler.edu/las

The power, importance, and centrality of the liberal arts are affirmed daily in the College of Liberal Arts and Sciences (LAS). The College offers 29 majors and 31 minors across 12 departments and four programs in the humanities, the social sciences, and the natural sciences. Students in the College are encouraged and expected to explore different ways of understanding the world, to experience cultures diverse from their own, to practice critical thinking, to appreciate the value of and joy associated with learning, and to recognize the power their education provides them for personal gain and social change. A liberal arts degree from Butler positions students to do almost anything with their lives beyond Butler and to make a difference in their lives and in the lives of those with whom they interact.

We work on a daily basis to strengthen ties between students and faculty members. Students and their faculty mentors work closely together both in and out of the classroom. They conduct collaborative research projects, make joint presentations at professional meetings, and publish the results of their work in the literature of their disciplines. They talk about ideas, the future, and the world. And they very frequently remain in touch long after graduation.

We also believe that learning takes place in many settings in addition to the classroom. Students in the College of Liberal Arts and Sciences participate in internships in Indianapolis and around the world, and they regularly study abroad and in various field locations.

Core Values of the College of Liberal Arts and Sciences

The liberal arts' basic and historic purpose is at once to teach us to think for ourselves, to act wisely and well in the world, and to undertake occupations useful to ourselves and others.

Liberal arts education seeks ultimately to open us to the human condition in its pains and joys, thereby to nurture our personal integrity, and to foster in us compassion and respect for those whose lives we share in our own communities and around the world.

Liberal arts education rests on a paradox: thinking soundly oneself means first listening carefully to the thoughts of others. The liberal arts urge us to cultivate ourselves through the consciousness of others; careful attention to their ideas and actions help us refine our own.

Liberal arts education is pluralistic. It is composed of many voices, each appropriate to time and place, some discordant, none absolute. It seeks to develop in us wit to judge which skills are appropriate at which times. Liberal arts education is restless. It takes nothing for granted. Its characteristic activity is not uncritical assent but critical judgment. It scrutinizes sacred truths of every sort.

The liberal arts develop not only critical but also creative skills, not only rational analysis but also creative expression. They seek to develop and realize the fullness of the human personality. Their exercise aims as well at preparing students to educate themselves long after they have left formal school. Liberal arts education is meant to train its students for public responsibility, not just private good.

A liberal arts education is as much about the journey as the destination. It takes as much delight in the minute-by-minute quirks of learning as in the fulfillment of distant goals. It balances the will to know with empathy and wonderment.

continued

The Latin word “*ars*” means at once skill, knowledge, and practice. A liberal arts education begins with the skills of language and thought.

It teaches us to read well; to listen well; to write clear, concise prose; to speak privately in conversation, publicly in discussion, and formally in speeches; to judge one’s audience and regard one’s own words through the eyes and ears of others; to learn proper ways of integrating and citing the words and thoughts of others into one’s own work; to do these things reasonably well in languages and worldviews other than our own.

It teaches us to set out a case or hypothesis or argument; to evaluate the rigor of others’ arguments; to find and judge information in libraries, on the internet, and in other repositories. It teaches us modes of ascertaining truth and falsehood; resourcefulness appropriate to moral and aesthetic judgment; methods of logical, experimental, scientific, mathematical, and statistical reasoning.

These skills allow us to tackle and solve increasingly difficult and challenging problems, appreciate sources of bias and means of overcoming them, and entertain arguments from dissonant points of view. They develop in us a sense of subtlety, depth, and complexity.

A liberal arts education sees the cultivation of these skills not only as an end in itself but also as a preparation for the pursuit of knowledge and the other purposes of human life. The Chinese *I Ching (Book of Changes)* well captures a fundamental quality of liberal arts education when it intimates that knowledge and practice cannot be mastered until they have been regarded from different perspectives.

As students of the liberal arts, we cultivate as fully as possible the legacy of human thought, imagination, creativity, and research; observe

nature; confront and evaluate important theories that shape our understanding of the world and how to care for it; figure out how societies, our own and those of others, work and can be improved; weigh the costs and benefits of modern human life to the individual and the planet; seek to grasp and reduce the sources of human hatred and conflict; aim to understand and strengthen what inspires human cooperation; explore the workings of the human mind and body; unknit claims of teachers, politicians, advertisers, scientists, preachers, columnists, and your roommate; ponder history from the earliest epochs to the unfolding present; investigate the mechanisms of the cosmos, from the atom to the stars; delve into the past experiences of our own and other societies, as well as the current news; make ourselves at home in other cultures; make those from other cultures at home among ourselves; see the interplay between our beliefs about the natural world and our beliefs about religion, politics, and culture; search out purpose, ponder the meaning of life, scrutinize the human heart, and weigh conscience; discover the sweep of living systems, from microbes to biomes; learn to account for ourselves in a moral world that is neither black nor white; engage in a careful search for truth; know the ways of money and the nature of work; wrestle with ideas about God; fathom the relations between technology and human life; raise children—our own and those of others; consider the well-being of future generations; appreciate the beauty and uses of mathematics; forge agreements with loved ones, friends, and enemies; and engage ourselves in the principles, purposes, and practice of public life.

As students of the liberal arts, we do these things as part of a community with venerable roots—a community still evolving in space and time, a community of thought, imagination, value, labor, and action.

General Information

College Graduation Requirements— Bachelor of Arts Degree

Students may be graduated upon completion of 120 semester hours, including the Core Curriculum, 40 hours of upper-division work, the foreign language requirement, and a major in the College.

College Graduation Requirements— Bachelor of Science Degree

To receive a bachelor of science degree, students must, in addition to satisfying the regular University, College, and major requirements, complete at least 60 hours of courses in the natural sciences and mathematics—specifically courses in biological sciences, chemistry, physics, astronomy, mathematics, computer science, software engineering, and Core Curriculum courses in The Natural World and Analytic Reasoning.

Foreign Language Requirements

Students in the College of Liberal Arts and Sciences seeking the degree of bachelor of arts or bachelor of science must demonstrate competence in a foreign language by earning at least six hours of credit in one foreign language at the 200 or 300 level. Foreign language courses are offered at the 100 level for students in need of preparation for more advanced study. Although 100-level courses do not satisfy the foreign language requirement, they do count as credit hours toward the degree. All first-year students must take a placement examination. Further information is available in the Department of Modern Languages, Literatures & Cultures. American Sign Language (ASL) also fulfills the LAS language requirement. Students should contact the College of Communication's Communication Sciences and Disorders program for more information on ASL. Students with Liberal Arts and Sciences secondary majors whose primary majors are in other colleges must fulfill the foreign language requirement.

Majors

Students in the College of Liberal Arts and Sciences must declare their majors in the Office of the Dean. They then will be assigned an advisor in the department of their major. Programs are planned in consultation with this advisor and bear his or her approval. Students who change majors must also declare this change in the Office of the Dean. Students may choose majors from any of the following fields in the College:

- Actuarial Science
- Anthropology
- Astronomy and Astrophysics
- Biology
- Chemistry
- Classical Studies
- Computer Science
- Criminology
- Economics
- English
 - Concentration in Creative Writing
 - Concentration in Literary Theory, Culture, and Criticism
 - Concentration in Literature
 - Concentration in Public and Professional Writing
- Environmental Studies
- French
- Gender, Women, and Sexuality Studies
- German
- History
- Individualized Major
- International Studies

- Mathematics
- Peace and Conflict Studies
- Philosophy
- Physics
- Political Science
- Psychology
- Religion
- Science, Technology, and Society
- Sociology
- Sociology (with Specialization in Social Work and Social Policy)
- Software Engineering
- Spanish

All majors consist of at least 30 hours in the subject with a minimum of 20 hours in courses numbered above 299. Ten hours of each major must be completed at Butler University. Grades below C- and courses taken pass/fail do not count toward the major.

Students may earn double majors (two majors within the College) or add a secondary major (a major in another college) to their major in the College of Liberal Arts and Sciences.

Combined Majors

Combined majors consist of at least 40 hours in closely related fields, with 20 hours of upper-division courses, and must have the approval of the chair of each department or program concerned.

To assist students considering combined majors, LAS departments have developed standard lists of requirements for certain combined majors:

- Criminology and Psychology
- History and Anthropology
- History and Political Science
- Philosophy and Psychology
- Philosophy and Religion
- Political Science and Psychology
- Psychology and Anthropology
- Sociology and Criminology
- Sociology (with Specialization in Social Work and Social Policy) and Criminology
- Sociology (with Specialization in Social Work and Social Policy) and Psychology

Students may consult departments or the College of Liberal Arts and Sciences website for further information on these combined majors. They may also petition departments to consider other combined majors, or they may elect to propose an individualized major.

Minors

Students who choose to add minors to their programs indicate their choice on a form available in the Office of the Dean. They confer

with the chair of the department for advising. The College offers minors in the following areas:

- Actuarial Science
- African Studies
- Anthropology
- Astronomy
- Biology
- Chemistry
- Chinese
- Classical Studies
- Computer Science
- Criminology
- Economics
- English
 - Concentration in Creative Writing
 - Concentration in Literature
 - Concentration in Public and Professional Writing
- Ethics
- Environmental Studies
- French
- Gender, Women, and Sexuality Studies
- Geography
- German
- History
- International Studies
- Mathematics
- Neuroscience
- Peace and Conflict Studies
- Philosophy
- Physics
- Political Science
- Psychology
- Religion
- Science, Technology, and Society
- Sociology
- Spanish

A minor must consist of at least 18 hours of coursework in the subject. Ten hours of each minor must be completed at Butler University. Grades below C- and courses taken pass/fail do not count toward a minor.

Degree After Completing One Year of Professional Study

Candidates for the degree of bachelor of arts or bachelor of science may be permitted to spend their senior year in an approved school of medicine, dentistry, law, religion, or forestry, and may receive a degree from Butler University provided they complete the following:

- All Core Curriculum requirements of Butler University for the bachelor's degree.
- Foreign language requirement of the College.

- 98 hours with a minimum GPA of 2.0. (Transfer students in LAS pre-professional programs who have successfully completed at least 64 semester hours at Butler University, of which at least 10 hours are upper division, and who have a total of at least 98 hours, also may spend the senior year in professional school and complete the requirements for the BA or BS degree at Butler.)
- All requirements for the major.
- At the professional school, a number of credits equivalent in hours and grade points to the omitted work of the senior year at Butler University.

Preparation for Teacher Licensure

Students in the College of Liberal Arts and Sciences may seek a teaching license, but preparation for licensure is handled by the College of Education. Students may choose a primary major in the College of Education and a secondary major in the College of Liberal Arts and Sciences. Alternatively, students may choose a primary major in the College of Liberal Arts and Sciences, while taking courses required for licensure in the College of Education. In either case, advising concerning requirements for licensure is handled by the College of Education.

Associate Degree

To earn an associate degree, students are required to complete a minimum of 60 semester hours, including the University Core Curriculum, but excluding the Writing across the Curriculum and Speaking across the Curriculum requirements, and with a reduced number of Butler Cultural Requirement events. A cumulative GPA of at least 2.0 is needed to graduate. The elective hours taken as part of an associate degree program may be taken in a particular field or major. Students may consult the Office of the Dean of Liberal Arts and Sciences for further information concerning the degree.

In addition, the last 20 hours must be taken in residence at Butler unless permission for an exception is granted. Students who hold associate degrees may later earn bachelor's degrees. To do so, they must complete a minimum of 15 additional hours at Butler University and all requirements for the second degree. A minimum of 20 hours of the associate degree must be taken at Butler University.

An associate of science degree is awarded if the majority of the elective hours are in a department

that awards a bachelor of science degree to four-year degree recipients. Others receive the AA degree.

Graduate Programs

Graduate programs in the College require a 30-hour major, plus a thesis, or a 36-hour major (non-thesis option), depending upon departmental requirements. The College of Liberal Arts and Sciences offers the following graduate degrees:

- Master of Arts in English Literature
- Master of Arts in History
- Master of Fine Arts in Creative Writing

Information about these degrees is listed under the entries for the Departments of English and History and Anthropology.

For general information on applying and admission to any Butler graduate program or course, see Admission Information and Requirements chapter. College- and program-specific requirements are detailed below

- HST305, Topic: Old and New South Africa
- HST381, History of Africa
- HST382, Modern Africa
- PO350, African Politics
- PO386, Black Political Thought
- RL354, Islam: Religion, Culture, Society

Additional courses with African content or focus that may count toward the African Studies minor are offered throughout the University and may include African literature, international communication, African film, or other topics.

Study abroad: Students who complete a study-abroad program in Africa may count the credit from that experience toward the minor. For details, consult the coordinator of the African Studies program (Terri Jett, Jordan Hall, room 347B).

Foreign language: Students complete the Liberal Arts and Sciences requirement in foreign language, with the recommendation that the language selected be one widely spoken on the African continent (such as French).

AREAS of INSTRUCTION

African Studies Minor

Administration

Terri Jett, PhD, Program Coordinator

The minor in African studies at Butler University is designed for students with any major who wish to enrich their program with study of one of the most interesting areas of the world. The program is interdisciplinary, drawing upon areas of the humanities, social sciences, and occasionally, the fine arts. Students are encouraged to individualize their programs with study-abroad experiences in Africa, if possible, or internships focusing on museums, performing arts organizations, communication and media agencies, or nongovernmental agencies. Note that faculty in the program may also offer special-topics courses with African content that may be substituted or added to the list of classes below.

Requirements for the Minor

The minor consists of 18–19 hours, with courses selected from the following (each 3 hours):

- AN360, People and Cultures of Africa
- FR334, Topics in Francophone Culture
- FR485, Topics in Francophone Studies

Biological Sciences

Administration

Travis J. Ryan, PhD, Department Chair

Professors

Thomas E. Dolan, PhD; Travis J. Ryan, PhD; Carmen M. Salsbury, PhD; James L. Shellhaas, PhD

Associate Professors

Shelley Etnier, PhD; Jennifer R. Kowalski, PhD; Katherine M. Schmid, PhD; Philip J. Villani, PhD

Assistant Professors

Sean T. Berthrong, PhD; Nathanael R. Hauck, PhD; Lindsay K. Lewellyn, PhD; Andrew M. Stoehr, PhD

Instructors

McKenzie Beverage, MA; Rebecca Dolan, PhD, Director, Friesner Herbarium; Erin Gerecke, PhD; Marva Meadows, MS; Tracey Mills, MS; Michael P. Trombley, PhD

Department Website

www.butler.edu/biology

Why Study Biology?

Biology is the study of living things, including plants, animals, and microbes. A major in biology will provide you with a broad education in the biological sciences, exposing you to many different facets of this diverse science. Biological sciences is a liberal arts major, and therefore it is largely about teaching students how to learn and think about the world. Students will develop an understanding of the scientific method, a process that develops analysis and reasoning skills.

Students will learn to think logically, for example, by designing and following an experiment through to its conclusion and analyzing the results. Many students do not realize the amount of creative thinking and problem-solving skills that also go into biology; these will be developed as well. Biology majors also have the opportunity to hone their communication skills, both oral and written, as they present the results of their experiments.

While many of these skills are emphasized in the classroom, independent research projects with faculty members and external internships afford many students the opportunity to apply these skills to real questions and problems.

A biology degree is versatile. While many students major in biology as a precursor to medical or dental school, there are a number of other fields that students may pursue as well. Students may go on to work as lab technicians at hospitals, or at the state crime lab; others may go on to teach at the primary, secondary, or college level. Many choose to pursue environmental careers, such as working in forestry or parks, or even as an environmental lobbyist. Many biology majors choose to go on to graduate school, where they pursue research in genetics, ecology, cell biology, medical research, or any other of the wide variety of fields in biology. Many other career opportunities are available in biomedical research, agriculture, and environmental management, among other fields.

Why Study Biology at Butler?

The Department of Biological Sciences offers a curriculum emphasizing broad training in biology as the key to success in graduate school, professional school, teacher education, and technical careers. The major is built upon a strong foundation of core courses in the liberal arts, general biology courses, and biology electives to meet student interests. Students studying science should be exposed early and often to the methods of discovery, inquiry, and problem solving used by scientists to explain the natural world. Our faculty members are familiar with these methods as we apply them in our individual research programs, and we strive to develop such capabilities in our students.

Therefore, we give our students opportunities to actively use the tools of scientific investigation in the lab and the field through a variety of courses at the molecular, cellular, organismal, and population levels of biological organization.

Personalized attention is an important aspect of studying biology at Butler. Our biology class sizes are small relative to those at many

institutions; even most of our introductory classes typically have fewer than 30 students, and many upper-level courses have fewer than 20 students. Classes are thus interactive learning environments that foster not only hands-on scientific inquiry skills, but also communication and critical-thinking skills that serve students well no matter what professional path they may choose after graduation.

The low student-to-faculty ratio also provides opportunities for students to gain more intensive experiences through independent study with a faculty mentor. During the academic year, students are welcome to register for research credits.

Another popular option, the Butler Summer Institute, is a nine-week program in which participants undertake independent projects they design with a faculty mentor. Student research is frequently showcased during the annual Butler Undergraduate Research Conference, which attracts college students throughout the Midwest each spring to present their research results to their peers. Students may also apply for funds to travel to other regional or national meetings via the Holcomb Undergraduate Grants program. Finally, students often co-author papers with faculty members for publication in professional journals or presentation at conferences. For example, recent joint student-faculty articles have been published in *Biochemical Genetics*, *Evolution*, *Journal of Experimental Biology*, *Journal of Herpetology*, *American Naturalist*, and *Animal Behavior*.

Students studying biology at Butler also have opportunities for off-campus study, internships, and career exploration through special affiliated programs. For example, the Center for Urban Ecology educates and engages Butler students and citizens in the local community about the discipline of urban ecology and aims to create “citizen scientists” dedicated to continued stewardship of the natural world. Students can attend workshops, take classes, devise independent research projects, or participate in internship opportunities in ecology and environmental topics. Another option, the Smithsonian Tropical Research Institute (STRI) in Panama, is dedicated to understanding tropical biodiversity. The Butler-STRI partnership includes opportunities for students to serve as paid interns in Panama for existing research projects conducted by STRI scientists and for students to engage in new research initiatives with Butler faculty in Panama. Further, the partnership includes two

field-based courses taught on site in Panama by Butler biology faculty. Students may also want to apply for biology internships, which are available throughout Indianapolis, the state of Indiana, and surrounding states.

Some students choose a major in biology as a gateway toward a career in health-related fields. Butler students who have qualified themselves with outstanding academic performance in the major have had great success in entering professional schools in medicine, dentistry, optometry, physical therapy, and veterinary medicine. Students receive individual advising by faculty on the selection of courses that will both satisfy the minimum entrance requirements and prepare them well for the professional school of their choice.

In addition, the pre-professional school advising area within the Center for High Achievement and Scholarly Engagement plans co-curricular activities, maintains a reference library of useful publications, and coordinates the application process.

Biology Student Learning Outcomes

We expect that students will be able to show mastery of various types of learning during their progression through different types of courses in the major. By the time they complete the biology major, students should be able to:

- Demonstrate content knowledge and proficiency in using and explaining techniques essential to the study of fundamental areas of biology: genetics, cellular and molecular biology, and ecology and evolutionary biology
- Use and apply scientific literature properly to ask and answer questions in the biological sciences
- Design experiments and collect, analyze, and interpret data using graphical and statistical analyses, in order to evaluate hypotheses
- Communicate scientific ideas, concepts, and findings through writing and speaking
- Apply scientific findings to relevant societal issues

Degree Programs

- Major in Biology (BS, BA)
- Minor in Biology

Requirements for the Major

A total of 37 biology credit hours are required. All first-year students must complete BI111 (Contemporary Issues in Biology) and the three fundamentals courses, which consist of BI210

(Genetics—Fundamentals), BI220 (Cellular and Molecular Biology—Fundamentals), and BI230 (Ecology and Evolutionary Biology—Fundamentals). BI230 is a prerequisite for all BI courses numbered 300 and higher. All students must also complete BI299—Biology Seminar (pass/fail) in the spring semester of their second year in the major. To acquire the remaining credit hours for the major, students must take biology electives at the 300 level or above; at least four of these electives must be lab courses. One of the electives must be an organism-based course chosen from the following: BI301, BI302, BI311, or BI438 (indicated with an asterisk below). All senior biology majors must complete BI480 (Biology Capstone). In addition, all biology majors must take general chemistry (CH105–106 or CH107). Note: BI325, Principles of Pathogenic Microbiology, cannot be counted toward the 37-hour minimum required for the biology major. Students will be allowed to use a maximum of three hours of independent study credit, internship credit, research, or honors thesis credit toward the 37-hour minimum required for the biology major.

Students must earn a grade of C- or better in all prerequisite courses as well as in all required courses for the major.

Required Courses

Note that all BI courses numbered 300 and above require BI230 with a C- or better except where noted below:

- BI111, Contemporary Issues in Biology (first-semester majors and exploratory students only; transfer students and those joining the major after their first semester at Butler are exempt from BI111, but must complete an additional hour of biology elective credit at the 300 level or above)
- BI210, Genetics—Fundamentals
- BI220, Cellular and Molecular Biology—Fundamentals (prerequisite BI210 with C- or better)
- BI230, Ecology and Evolutionary Biology—Fundamentals (prerequisite BI220 with C- or better)
- BI299, Biology Seminar (pass/fail)
- BI480, Senior Biology Capstone (prerequisite BI230 and senior standing)
- BI301*, Principles of Zoology
- BI302*, Principles of Botany
- BI306, Mammalogy
- BI307, Vertebrate Biology
- BI308, Tropical Field Biology
- BI309, Local Flora
- BI311*, Biology of Algae and Fungi
- BI320, Animal Behavior
- BI323, Principles of Immunology

- BI339, Philosophy of Biology
- BI401–403, Independent Study
- BI405–409, Topics in Biology
- BI411, Principles of Physiology
- BI413, Vertebrate Histology and Microtechnique
- BI417, Tropical Terrestrial Biology
- BI418, Advanced Ecology
- BI419, Conservation Biology
- BI423, Advanced Evolutionary Biology
- BI430, Animal Development
- BI431, Plant Development
- BI432, Plant Physiology
- BI433, Advanced Cell Biology
- BI434, Transmission Genetics
- BI435, Molecular Genetics (BI203)
- BI436, Genomics, Bioinformatics, and Gene Evolution (BI203)
- BI438*, Microbiology
- BI440, Practical Molecular Biology
- BI442, Comparative Biomechanics
- BI460, Cellular and Molecular Neurobiology
- BI490, Internship in Biological Sciences
- BI499, Honors Thesis

* Indicates organism-based courses, one of which must be taken as an elective for credit toward major.

Requirements for the Minor

The minor consists of 21 credit hours. Students must complete the three fundamentals courses (BI201, BI202, and BI203) and two BI elective courses with lab at the 300 level or above (excluding BI325).

Core Courses Offered by Biological Sciences

NW200-BI, Biology and Society: This course will examine current societal issues with biological connections, the role scientists and others play toward helping us understand these issues, and the underlying biological concepts for each topic. Course includes lecture and laboratory components. A course for non-science majors only. (U)(5) Annually, term varies.

NW201-BI, Environmental Biology: Application of scientific principles to understanding and managing the environment. Emphasizes the human relationship with the environment and possible solutions to environmental problems. Lecture and laboratory. A course for non-science majors. (U)(5) Occasionally.

NW202-BI, The World of Plants: Introduction to Plant Biology. How the anatomy and physiology of diverse plants help them to survive,

reproduce, and benefit humans and ecosystems. Lecture and laboratory. A course for non-science majors. (U)(5) Annually, term varies.

NW203-BI, Genetics and Evolution: A study of the significant concepts in molecular, organismal, and population genetics and the theory of evolution. All topics will be taught within their historical and contemporary contexts. Lecture and laboratory. A course for non-science majors. (U)(5) Annually, term varies.

NW204-BI, Survey of Biology: A survey of the major concepts in the biological sciences. Lecture and laboratory. A course for non-science majors. (U)(5) Occasionally.

NW205-BI, Urban Ecology—Exploring and Enhancing the Urban Environment of Indianapolis: The majority of the world's population now lives in urban areas, but environmental scientists have only begun to explore the ecology in and of cities recently. This course uses the city of Indianapolis as a case study to understand the effect that cities have on the environment, the processes that take place in the urban ecosystem, and the opportunities cities hold for ecological restoration. Lecture and laboratory. A course for non-science majors. (U)(5) Annually, term varies.

NW206-BI, Life, Death, and Immortality: How the HeLa Monster Did and Didn't Change the World: A patient on a 1951 "colored" ward unknowingly contributed to science, changing medicine forever. Exploring the underlying biology/genetics through lecture and laboratories, we'll also review the ethical, socioeconomic, racial, and gender issues related to these HeLa cells, including a community outreach project that may be used to satisfy the ICR. (U)(5) Occasionally.

NW207-BI, Ecology and the Natural Environment: This course will explore the foundational ecological principles that govern the interactions between species and the abiotic and biotic world and, in turn, determine patterns of distribution and abundance. Fundamental concepts of ecology at the population, community, and ecosystem levels will be emphasized. (U)(5) Spring.

NW261-BI-I, Food: Pasture, Table, Body, and Mind: This course about food will encourage society to consider how food connects to both society and to science and how society and science connect to one another. By using a framework of pasture, table, body, and mind, we will explore the ecological relationship between a healthy environment and growing healthy food,

the factors that influence our food choices, the constituents of food and how they contribute to our physical well-being, and the ways in which society and culture influence our eating habits. A course for non-science majors. (U)(5) Occasionally.

Biological Sciences Courses

BI105, Introductory Cell Biology: An introduction to the basic principles of cell biology for first-year pharmacy students. The course will cover introductory chemistry, biochemistry, cell structure, metabolism, genetics, and embryology. Will not count for credit toward a major in biology. Only available to COPHS students. (U)(3) Fall and spring.

BI111, Contemporary Issues in Biology: This topic-driven course is designed to illustrate the connection between biology and current societal issues. In addition to coverage of background information, a portion of the course will be dedicated to problem-based activities and class discussions. (U)(3) Fall.

BI210, Genetics—Fundamentals: This course introduces students to basic principles of transmission and molecular genetics. Topics include meiosis, transmission genetics, gene expression, and mutations. Laboratories emphasize basic techniques. (U)(4) Fall and spring.

BI220, Cellular and Molecular Biology—Fundamentals: This course introduces students to basic properties and functions of cells and the molecules they contain, including the relationship between the structure and function of diverse cell types. Prerequisite: BI210 with a C- or better. (U)(4) Fall and spring.

BI230, Ecology and Evolutionary Biology—Fundamentals: This course introduces students to basic theory of ecology and evolutionary biology. Laboratories emphasize experimental design, statistical analysis, and scientific communication. Prerequisite: BI220 with C- or better. (U)(5) Fall and spring.

BI257, Human Anatomy and Physiology: A course for non-major students to relate structure and function in the human body. Prerequisite: CC214P, any NW-BI course, or two of the following: BI201, BI202, and BI203. (U)(5) Fall.

BI299, Biology Seminar: Attendance at and participation in the biology seminar series, including pre- and post-seminar reports. Biology majors are expected to complete this course during their second year in the major. Prerequisite: BI230 with a C- or better. (P/F)(U)(1) Spring.

BI301, Principles of Zoology: A survey of the basic principles of animal biology, covering the major animal groups, their evolutionary relationships, and their structural and functional characteristics. Prerequisite: BI230 with a C- or better. (U)(4) Annually, term varies.

BI302, Principles of Botany: A survey of the basic principles of plant biology, covering the major plant groups, their evolutionary relationships, and their structural and functional characteristics. Prerequisite: BI230 with a C- or better. (U)(4) Annually, term varies.

BI306, Mammalogy: This course will address the taxonomy, ecology, evolution, behavior, and economic importance of mammals. The laboratory portion of the course will emphasize the taxonomy of mammals and the observation and trapping/handling of small mammals. Prerequisite: BI230 with a C- or better. (U)(4) Occasionally.

BI307, Vertebrate Biology: Phylogeny, taxonomy, behavior, and life histories of the vertebrates. Prerequisite: BI230 with C- or better. (U)(4) Occasionally.

BI308, Tropical Field Biology: Introduction to the habitats, distribution, and ecology of tropical fauna. Includes a field trip to a tropical habitat during the semester. Prerequisite: BI230 with a C- or better. (U)(3) Spring.

BI309, Local Flora: Collection, identification, classification, uses, and ecology of Indiana flowering plants. Learning the use of identification keys will be stressed. Prerequisite: BI230 with a C- or better or any NW-BI course. (U)(3) Occasionally.

BI311, Biology of Algae and Fungi: The biology of algae and fungi including structure, life histories, classification, physiology, ecology, and experimental aspects of algae and fungi. Prerequisite: BI230 with a C- or better. (U)(4) Occasionally.

BI314, Ornithology: This course will address the taxonomy, ecology, evolution, and behavior of birds. The laboratory portion of the course will emphasize the identification, function, and behavior of birds. Prerequisite: BI230 with a C- or better. (U)(4) Occasionally.

BI320, Animal Behavior: The adaptive behavior of animals is approached from physiological, developmental, ecological, and evolutionary perspectives. Prerequisite: BI230 with a C- or better. (U)(4) Annually, term varies.

BI323, Principles of Immunology: Basic concepts and techniques of immunology.

Prerequisite: BI105 or BI230 with a C- or better. (U)(2) Fall.

BI325, Principles of Pathogenic Microbiology:

The course will address microbiological concepts/principles regarding the mechanisms of infection and disease of major organ systems as well as their control. Open only to students of the College of Pharmacy and Health Sciences. Prerequisite: BI105, or BI202 and BI203. (U)(3) Spring.

BI339, Philosophy of Biology: A study of philosophical problems in biology. The course explores both theoretical problems within biology, like the evolution of altruism and problems of taxonomy, and philosophical problems that are influenced by biological theory, including the nature of morality and the status of religious belief. Prerequisite: BI230 with a C- or better or permission of instructor. (U)(3) Occasionally.

BI350, Cell Biology: The structure and function of cells, including the properties of macromolecules, membrane structure, cell organelles, cell metabolism and energy relationships, cell division, and gene expression. Lecture and laboratory. Prerequisite: BI110, or BI120 and BI122. (U)(4) Annually, term varies.

BI357, General Genetics: An introduction to the basics of both classical and modern genetics, with emphasis on human heredity. Prerequisite: BI110, or BI120 and BI122. (U/G)(4) Annually, term varies.

BI401, Independent Study: Open to juniors and seniors who wish to do research with a biological science faculty member in an area of the animal and plant sciences. Permission of the faculty member and the chairman of the biological sciences department required. (U/G)(1) Fall and spring.

BI402, Independent Study: Open to juniors and seniors who wish to do research with a biological science faculty member in an area of the animal and plant sciences. Permission of the faculty member and the chairman of the biological sciences department required. (U/G)(2) Fall and spring.

BI403, Independent Study: Open to juniors and seniors who wish to do research with a biological science faculty member in an area of the animal and plant sciences. Permission of the faculty member and the chairman of the biological sciences department required. (U/G)(3) Fall and spring.

BI405, Topics in Biology: Study of a current biological topic. Prerequisite: BI230 with a C- or better. (U)(1) Occasionally.

BI406, Topics in Biology: Study of a current biological topic. Prerequisite: BI230 with a C- or better. (U)(2) Occasionally.

BI407, Topics in Biology: Study of a current biological topic. Prerequisite: BI230 with a C- or better. (U)(3) Occasionally.

BI408, Topics in Biology: Study of a current biological topic. Prerequisite: BI230 with a C- or better. (U)(4) Occasionally.

BI409, Topics in Biology: Study of a current biological topic. Prerequisite: BI230 with a C- or better. (U)(5) Occasionally.

BI411, Principles of Physiology: Analysis of the functions of all major systems of the vertebrates with emphasis on mammalian physiology. Prerequisite: BI230 with a C- or better. (U)(4) Annually, term varies.

BI413, Vertebrate Histology and Microtechnique: A study of the structure of vertebrate tissues and the techniques used in microscope slide preparations. Prerequisite: BI230 with a C- or better. (U)(4) Occasionally.

BI417, Tropical Terrestrial Biology: This three-week summer field course experience, taught by Butler biology faculty, will lead students to understand how climate changes the structure and function of terrestrial ecosystems through a comparative analysis of temperate and tropical environments. The first week begins on campus and examines the diversity of a temperate forest. The last two weeks are spent at the Smithsonian Tropical Research Institute (STRI) field station in Gamboa, Panama, where field exercises are used to explore the flora and fauna typical of tropical biodiversity. Visits by world-renowned STRI scientists will exemplify the types of research questions and methodologies used to study tropical communities. Field trips include bird watching along Pipeline Road, primate observing on Barro Colorado Island, frog and bat observing during night hours, a canopy crane trip for a bird's-eye viewing of the forest, and others. Students are expected to keep a travel log and, towards the end of the course, they will develop their own research project, collect data, and give a presentation on their findings. Prerequisite: BI230 with a C- or better or permission of instructors. (U)(4) Summer.

BI418, Advanced Ecology: An exploration of various topics in the field of ecology; specific topics vary with each course offering. Prerequisite: BI230 with a C- or better. (U)(4) Occasionally.

BI419, Conservation Biology: This course will focus on the biological principles that

must be the anchor for the management and/ or preservation of native flora and fauna. Conservation biology, however, is by necessity a multidisciplinary endeavor, and the course also deals with the social, political, and economic factors that weigh on conservation decisions. Prerequisite: BI230 with a C- or better. (U)(3) Occasionally.

BI423, Advanced Evolutionary Biology: An exploration of various topics in the field of evolutionary biology; specific topics vary with each course offering. Prerequisite: BI230 with a C- or better. (U)(3) Occasionally.

BI430, Animal Development: A study of embryonic development from the formation of gametes, through fertilization, and up to the development of the multicellular organism. Emphasis will be on the anatomical changes during development and on the cellular and molecular events causing these changes. Prerequisite: BI230 with a C- or better. (U)(4) Occasionally.

BI431, Plant Development: An introduction to the cellular and molecular mechanisms important in the development of members in the plant kingdom, from multicellular algae to flowering plants. The laboratory will include techniques important in investigating developmental phenomena such as scanning electron microscopy and tissue culture. Prerequisite: BI230 with a C- or better. (U)(4) Occasionally.

BI432, Plant Physiology: Introduction to how plants work, including housekeeping functions (photosynthesis, mineral nutrition, water relations, metabolism), growth and reproduction, defenses, and responses to the environment. Laboratories include necessary anatomy but emphasize biochemistry and molecular biology. Prerequisites: BI230 with a C- or better and CH106 or CH107. (U)(4) Occasionally.

BI433, Advanced Cell Biology: This course will focus on developing a deeper understanding of the basic concepts in cell biology that were introduced in the fundamentals course (BI220). Lab will focus on application of cell biological techniques to the development of research projects. Prerequisite: BI230 with a C- or better. (U)(4) Annually, term varies.

BI434, Transmission Genetics: An in-depth look at the inheritance of traits in individuals and populations. Topics will range from classic Mendelian inheritance to quantitative genetics to epigenetics. The course will explore the topics through lectures and the discussion of primary

literature and classic texts. Prerequisite: BI230 with a C- or better. (U)(4)

BI435, Molecular Genetics: Molecular structure and biochemical function of a gene in viruses, prokaryotes, and eukaryotes as illustrated by the original research literature. Prerequisite: BI230 with a C- or better. (U)(4) Occasionally.

BI436, Genomics, Bioinformatics, and Gene Evolution: This course will introduce students to the new, rapidly expanding fields of genomics, proteomics, and bioinformatics, as well as the overarching field of systems biology. The students will also learn what these new approaches reveal about how genes and genomes evolve. Prerequisite: BI230 with a C- or better. (U)(4) Occasionally.

BI438, Microbiology: Basic principles of microbiology and associated laboratory techniques. Lecture, demonstration, and laboratory. Prerequisite: BI230 with a C- or better. (U)(4) Fall.

BI442, Comparative Biomechanics: Biomechanics uses physical principles to explore organism function. This course will cover basic principles of solid and fluid mechanics as they pertain to living organisms. Prerequisite: BI230 with a C- or better. (U)(4) Occasionally.

BI460, Cell and Molecular Neurobiology: This course covers cellular/molecular nervous system biology (e.g., nervous system structure/development, neuronal signaling/survival/regeneration, synapse formation/function). Labs involve independent research on neuronal function in *C. elegans* roundworms. Prerequisite: BI230 with a C- or better or instructor permission; BI422 recommended. (U)(4) Annually, term varies.

BI480, Biology Capstone: This course provides a capstone experience, a chance to put into practice the knowledge and analytical skills learned as a biology major. The course will explore a specific area of biology through reading and discussion of the scientific literature and preparation of a review paper. Prerequisite: BI230 with a C- or better. (U)(3) Fall and spring.

BI490, Internship in Biological Sciences: A course offering the student supervised work/research experience in a setting pertinent to the major area of study but outside the department. Permission of the department chair is required. (U)(3) Occasionally.

BI499, Honors Thesis: (U)(3) Occasionally.

Chemistry

Administration

LuAnne McNulty, PhD, Department Chair

Professors

Olujide Akinbo, PhD; John Esteb, PhD; Geoffrey C. Hoops, PhD; Joseph L. Kirsch, PhD; Shannon G. Lieb, PhD; Stacy A. O'Reilly, PhD; Robert A. Pribush, PhD; Michael Samide, PhD; Anne M. Wilson, PhD

Associate Professors

Todd Hopkins, PhD; R. Jeremy Johnson, PhD; LuAnne McNulty, PhD

Instructors

Adam Azman, PhD; Elizabeth Davis, PhD; Paul Morgan, PhD; Erin Whitteck, PhD

Department Website

www.butler.edu/chemistry

Why Study Chemistry?

Chemistry is often referred to as the “central science.” It plays a role in the discovery of better medicines, in the development of safer chemicals for household use, and in the development of the next generation of electronic gadgets. An essential aspect to chemistry is the necessity of doing these things in a sustainable manner.

The study of chemistry will do more than just impart technical knowledge, ideas, and techniques useful in a laboratory setting. It will allow for experiences that will develop problem-solving abilities and critical-thinking skills. Class and conference presentations, poster sessions, and lab reports will help develop proficiency in communicating in a variety of settings. The skills gained can be applied not just to careers in chemistry, but also to careers in health care, law, business, and education, and to the pursuit of advanced degrees in a variety of fields.

Why Study Chemistry at Butler?

The faculty and staff are dedicated to providing a supportive yet challenging environment for students interested in studying chemistry at the undergraduate level. The curriculum is designed to prepare students for the evolving nature of both chemistry and the broader field of science. Students are encouraged to pursue undergraduate research with faculty whose expertise spans a wide range of chemistry subdisciplines. Beginning in the first-year curriculum, departmental poster sessions, weekly seminars, and project-driven laboratories encourage interaction between students and faculty during and outside class.

Chemistry Student Learning Outcomes

- Understand key concepts related to the physical and chemical properties of matter
- Communicate within and outside the chemical discipline
- Develop problem-solving skills through experimentation and analysis
- Appreciate the relationship between integrity, science, and society
- Demonstrate knowledge of and use of appropriate safety protocols in laboratory settings

Degree Programs

- Major in Chemistry (BS, BA)
- Minor in Chemistry

Requirements—ACS Certification

Students who plan to enter the chemical profession or pursue graduate studies in chemistry should complete the requirements (or as many of the requirements as possible) for American Chemical Society Certification. (See www.acs.org.) Students interested in chemistry as a path to a professional program and who are considering an additional major or a minor may want to pursue the major with honors eligibility. Students completing a major in chemistry with 32 hours should combine their chemistry major with another area of study and plan for a double major.

The requirements for a major in chemistry with certification from the American Chemical Society include these:

Introductory, Foundation, and Allied courses

- CH105–106, General Chemistry or CH107, Advanced General Chemistry
- CH351, Organic Chemistry I and CH352, Organic Chemistry II
- CH321, Analytical Chemistry
- CH332, Inorganic Chemistry
- CH361, Biochemistry
- CH471 or CH472, Physical Chemistry I or II
- MA106, Calculus I and MA107, Calculus II
- PH201–202, Intro to Analytical Physics or PH107–108, Elementary Physics

Three additional in-depth courses from the following list:

- CH422, Analytical Chemistry II
- CH431, Advanced Inorganic Chemistry
- CH4x9, Special Topics in Chemistry
- CH462, Biochemistry II: Central Metabolism
- CH465, Environmental Chemistry
- CH471 or CH472, Physical Chemistry I or II

Chemistry Laboratory Experiences

A minimum of 400 hours of in-lab experiences are required and must cover four of the five areas of chemistry. Labs taken as part of CH321, CH351, and CH352 count toward the 400 hours of lab experience.

- CH424, Instrumental Analysis Laboratory
- CH432, Synthesis and Characterization
- CH463, Biochemistry Laboratory I
- CH473, Physical Chemistry Laboratory I
- CH474, Physical Chemistry Laboratory II
- CH493–494, Undergraduate Research
- Butler Summer Institute
- Research Experiences for Undergraduates

Recommended Chemistry and Allied Courses

- CH491, Chemistry Literature
- CH392, Chemistry Seminar I
- CH492, Chemistry Seminar II
- CH493–494, Undergraduate Research
- MA208, Calculus and Analytic Geometry III
- MA334, Differential Equations

Requirements for a Major in Chemistry with Honors Eligibility

At least 32 hours of chemistry, not including CH392 Chemistry Seminar I.

- CH105–106, General Chemistry or CH107, Advanced General Chemistry
- CH351, Organic Chemistry I and CH352, Organic Chemistry II
- CH321, Analytical Chemistry
- CH332, Inorganic Chemistry
- CH361, Biochemistry
- CH392 Chemistry Seminar I
- CH471 or CH472, Physical Chemistry I or II
- MA106, Calculus I and MA107, Calculus II
- PH201–202, Intro to Analytical Physics or PH107–108, Elementary Physics

Requirements for the Major

Introductory, Required, and Allied Courses

- CH105–106, General Chemistry or CH107, Advanced General Chemistry
- CH351, Organic Chemistry I and CH352, Organic Chemistry II
- MA106, Calculus I
- PH201–202, Intro to Analytical Physics or PH107–108, Elementary Physics

Complete enough hours of **upper-level chemistry courses from the following list to reach 32 total hours of chemistry**. Courses must include work in two of the four remaining areas of chemistry:

- CH321, Analytical Chemistry; CH422, Analytical Chemistry II; CH424, Instrumental Analysis Laboratory

- CH332, Inorganic Chemistry; CH431, Advanced Inorganic Chemistry
- CH361, Biochemistry I; CH462, Biochemistry Laboratory I; CH463, Biochemistry IIA
- CH471 or CH472, Physical Chemistry I or II; CH473 or CH474, Physical Chemistry Laboratory I or II

Requirements for the Minor

General and Organic Chemistry

- CH105–106, General Chemistry or CH107, Advanced General Chemistry
- CH351, Organic Chemistry I and CH352, Organic Chemistry II

An additional course from this list:

- CH321, Analytical Chemistry
- CH332, Inorganic Chemistry
- CH361, Biochemistry
- CH471 or CH472, Physical Chemistry I or II

Core Courses Offered by Chemistry

NW210-CH, Chemistry and Society: Study of chemistry and its applications to and impact on society. Four hours of lecture/discussion and one two-hour laboratory per week. Credit not applicable toward a major in chemistry. (U)(5) Fall, spring, and summer.

NW211-CH-I, Water Quality: Study of chemistry and its applications to water systems in and around Indianapolis. Four hours of lecture/discussion and one two-hour laboratory per week. Credit not applicable toward a major in chemistry. (U)(5).

Chemistry Courses

CH105, General Chemistry: The study of atomic and molecular structure, reactions, stoichiometry, thermochemistry, and states of matter. Four lectures and one three-hour laboratory per week. For students with some background in chemistry. (U)(5) Fall.

CH106, General Chemistry: The study of kinetics, equilibria, acid-base theories, thermodynamics, and electrochemistry. Four lectures and one three-hour laboratory per week. Prerequisite: CH105 or equivalent with a grade of C or better. (U)(5) Spring.

CH107, Advanced General Chemistry: A course for students with a strong chemistry background. Admission by placement exam only. Topics to be covered are chemical bonding, chemical kinetics, solution chemistry, acid-base chemistry, chemical equilibrium, thermodynamics, and electrochemistry. (U)(6) Fall.

CH110, Chemistry in the Community: Students will research, develop, and present engaging demonstrations related to chemistry and natural science. Students will research the appropriate safety concerns and scientific principles behind the demonstration while developing the communication skills necessary to connect with the expected audience. The demonstration will be presented at multiple science outreach events within the Indianapolis community during the course. Reflective writing will be assigned concerning how the interactions with the public have affected the students' perceptions of chemistry, themselves, and the community. Course counts towards the ICR requirement. Prerequisite: CH106 or CH107. (U)(1) Fall.

CH321, Analytical Chemistry 1: An introduction to the fundamental theory and techniques of quantitative analysis. Four lectures and one four-hour laboratory per week. Prerequisite: CH106 or CH107 with a grade of C or better. (U)(5) Fall and spring.

CH332, Inorganic Chemistry: The study of atomic structure, ionic, covalent molecular, and metallic substances, acid/base theories with an emphasis on main group elements and an introduction to coordination chemistry. Three lectures per week. Prerequisite: CH351 with a grade of C or better. (U)(3) Spring.

CH351, Organic Chemistry: The systematic study of organic compounds stressing structure and reactions. The course covers nomenclature, stereochemistry, resonance, reactions of hydrocarbons and alkylhalides, and basic laboratory techniques. Prerequisite: CH106 or CH107 with a grade of C or better. Four hours of lecture and one three-hour laboratory per week. (U)(5) Fall.

CH352, Organic Chemistry 2: A continuation of CH351 covering reactions and mechanisms of alcohols, acids and their derivatives, amines and other functional groups as well as synthesis, spectroscopy, and advanced laboratory techniques. Prerequisite: CH351 with a grade of C or better. Four hours of lecture and one three-hour laboratory per week. (U)(5) Spring.

CH361, Biochemistry 1—Bio-Organic Chemistry: Systematic study of the structure of biological macromolecules (proteins, nucleic acids, carbohydrates), binding of ligands in proteins, and the fundamentals of enzymatic catalysis. Prerequisite: CH352 with a grade of C or better. Knowledge in introductory biology strongly recommended for this course. Four hours lecture per week. (U)(4) Fall.

CH392, Communication in Chemistry: Oral communication in chemistry. Focus on both formal and informal presentation skills, preparation of appropriate visual aids, observation, and evaluation of oral presentations. Fulfills the Speaking across the Curriculum (SAC) requirement. Prerequisite: 20 hours of chemistry. (U)(2) Fall and spring.

CH402, Internship in Chemistry: Designed to give chemistry students professional and practical experience in business, industry, and other activity related to their degree objectives. Oral presentation required. Course will not count for laboratory hours required for ACS certification. Each course may only be taken once for credit. Prerequisites: junior standing and permission of the department chair. (U)(3) Fall and spring.

CH403, Internship in Chemistry: Designed to give chemistry students professional and practical experience in business, industry, and other activity related to their degree objectives. Oral presentation required. Course will not count for laboratory hours required for ACS certification. Each course may only be taken once for credit. Prerequisites: junior standing and permission of the department chair. (U)(6) Fall and spring.

CH411, Independent Study: These courses provide an opportunity for a qualified student to pursue a special course of study under the direction of a faculty mentor. Prerequisites: Fourteen hours of chemistry, permission of the instructor, and permission of the head of the department. (U/G)(1) Occasionally.

CH412, Independent Study: These courses provide an opportunity for a qualified student to pursue a special course of study under the direction of a faculty mentor. Prerequisites: 14 hours of chemistry, permission of the instructor, and permission of the head of the department. (U/G)(2) Occasionally.

CH422, Analytical Chemistry 2: This course provides an introduction to advanced instrumental theory, design, and technique. Three lectures per week. Prerequisite: CH321 with a grade of C or better. (U)(3) Annually, term varies.

CH424, Instrumental Analysis Laboratory: Project-based application of specific instrumental methods of chemical analysis. Instrumental techniques covered could include: atomic or molecular spectroscopy, chromatography, or electrochemistry. The topic will vary by section number. One four-hour

laboratory per week. Prerequisite: CH321. (U)(2) Annually, term varies.

CH429, Special Topics in Analytical Chemistry: Various advanced topics in analytical chemistry. The subject matter for study will be listed when the course is offered. Prerequisite: one year of analytical chemistry or permission of the instructor. (U/G)(3) Occasionally.

CH431, Advanced Inorganic Chemistry: The study of coordination chemistry, organometallic chemistry, and catalysis. Three lectures per week. Prerequisite: CH332 with C or better. Corequisite: CH471 or CH472. (U/G)(3) Fall.

CH432, Synthesis and Characterization: Project-based laboratory dealing with the synthesis, characterization, and properties of synthetic products. One four-hour lab per week. Section 01 Inorganic Synthesis. Section 02 Biochemical Synthesis. Section 03 Organic Synthesis. Prerequisites: CH332 and CH361 or permission of instructor. (U)(2) Annually, term varies.

CH439, Special Topics in Inorganic Chemistry: Various advanced topics in inorganic chemistry. The subject matter for study will be listed when the course is offered. Prerequisite: One year of inorganic chemistry or permission of the instructor. (U/G)(3) Occasionally.

CH459, Special Topics in Organic Chemistry: Various advanced topics in organic chemistry. The subject matter for study will be listed when the course is offered. Prerequisite: One year of organic chemistry or permission of the instructor. (U/G)(3) Occasionally.

CH462, Biochemistry IIA: Central Metabolism: Topics include carbohydrate and lipid metabolism, electron transport and oxidative phosphorylation, biological membranes: structure, transport, and signal transduction. Prerequisites: CH361 with a grade of C or better. Three hours of lecture and one two-hour computer laboratory per week. (U)(4) Spring.

CH463, Biochemistry Laboratory 1: Laboratory separation, detection, quantitation, and characterization of proteins, including enzyme-catalyzed kinetics, using chromatography, electrophoresis, and spectroscopy. This writing-intensive class will also emphasize reading, writing, and peer-review skills involving biochemical literature. One one-hour lecture and one three-hour laboratory per week. Prerequisites: CH361 and CH321, both with grade of C or better. (U)(2) Spring.

CH465, Environmental Chemistry: This course focuses on the application of basic chemistry principles in understanding the source, fate, transport, and transformation of compounds in natural and polluted environmental compartments. This includes the atmosphere, hydrosphere, and lithosphere. Impact of these on a number of issues will be discussed. Prerequisite: CH351. (U)(3) Occasionally.

CH469, Special Topics in Biochemistry: Various advanced topics in biochemistry. The subject matter for study will be listed when the course is offered. Prerequisite: One year of biochemistry or permission of the instructor. (U/G)(3) Occasionally.

CH471, Physical Chemistry 1: The introduction to quantum chemistry, bonding, spectroscopy, and statistical mechanics. Prerequisites: CH352 or equivalent, MA107 or equivalent, PH202 or equivalent. (U/G)(3) Spring.

CH472, Physical Chemistry 2: The introduction to chemical thermodynamics and chemical kinetics. Prerequisites: CH352 or equivalent, MA107 or equivalent, PH202 or equivalent. (U/G)(3) Fall.

CH473, Physical Chemistry Laboratory: Introduction to methods for determining physical phenomena of chemistry. The topics covered will vary by section number, and can include thermodynamics, kinetics, spectroscopy, quantum chemistry, and computational methods. Co- or prerequisite: CH471 or CH472. (U/G)(2) Annually, term varies.

CH475, Computational Chemistry: The course covers theoretical methods of computing molecular structure. Based on the structure, thermodynamic properties, reactivity, and spectroscopic measurements (ultraviolet, visible, infrared, and nuclear magnetic resonance) can be computed. Computed values are compared to experimental data. Prerequisite: CH352 with a C or better. (U)(2) Occasionally.

CH479, Special Topics in Physical Chemistry: Various advanced topics in physical chemistry. The subject matter for study will be listed when the course is offered. Prerequisite: One year of physical chemistry or permission of the instructor. (U/G)(3) Occasionally.

CH492, Chemistry Seminar 2: Attendance at and participation in the chemistry departmental seminar series, including an oral presentation on a research project or literature review. Required for university honors. Prerequisites: CH392 and 28 hours of chemistry. (U)(1) Fall and spring.

CH493, Undergraduate Research: Individual research under guidance of a faculty member. Required for university honors. Prerequisites: 14 hours of chemistry, permission of the instructor, and permission of the head of the department. (U/G)(1) Fall and spring.

CH494, Undergraduate Research: Individual research under guidance of a faculty member. Required for university honors. Prerequisites: 14 hours of chemistry, permission of the instructor, and permission of the head of the department. (U/G)(2) Fall and spring.

CH499, Honors Thesis. (U)(3) Annually, term varies.

CH518, Advanced Placement Workshop Chemistry High School Teachers: The workshop will focus on the topics found on the AP exam and in college general chemistry (atomic structure, periodic properties, bonding, kinetics, thermodynamics, electrochemistry, equilibrium, solutions, acid/base, and solubility). The focus of the workshop will be on problem solving and course content material with some limited laboratory demonstration activities. (G)(3) Summer.

Classical Studies

Administration

Chad Bauman, PhD, Department Chair

Associate Professor

Christopher Bungard, PhD

Assistant Professor

Lynne Kvapil, PhD

Department Website

www.butler.edu/classics

Why Study Classics?

The culture, history, and literature of ancient Greece and Rome have long captivated the imagination of people throughout history and across the globe, from the Renaissance to the founding fathers of America, to modern writers from the Caribbean. We continue to live in a world of classical roots, whether it be the Athenian roots of democracy or the Roman origins of our republic, the Greek love for the beauty of athletics, or an enthusiasm for theatre that moved from Greece to Rome to Shakespeare and beyond. The Greeks and the Romans helped articulate the liberal arts that are at the heart of a Butler education. As we engage with the thinking and the art of the ancients, we aim to develop an understanding, enjoyment, and critical appreciation of some abiding principles of our world. We enter into dialogue with minds of the past in order to understand ourselves better now.

Studying the Greeks and Romans, we become part of our larger family over time. We enrich our minds and our imaginations, and we sharpen our skills for work and life today.

Why Study Classics at Butler?

- **Intimate and vibrant learning community:** Students in the Classical Studies Program at Butler have the opportunity to work closely with a small but dedicated faculty. Smaller classes give students a greater opportunity to engage directly with faculty and with each other. As part of a smaller major, students develop a stronger sense of being part of a community of thinkers engaging in a subject they are passionate about.
- **Building on past knowledge:** Our program recognizes the quality of work many students have done before arriving on our campus. Students placing into the second or third year of Latin and completing at least six hours of study in Latin are eligible for 3–9 advanced placement credit hours, which may count toward the major or the minor.
- **Real engagement with the ancient world:** Students are encouraged to immerse themselves in the environments that inspired the ancient Greeks and Romans. Our program offers the opportunity to study the culture and literature of the Romans while traveling to important sites in Rome and Italy, or to participate in an archaeological field school in Greece. Our program is also supportive of students who wish to study abroad in programs in Greece and Italy specifically focused around classical studies.
- **Practical experience:** Our students are encouraged to take advantage of opportunities to work with faculty on research of their own, whether in the form of a Butler Summer Institute project or a senior thesis. Students who have done quality research have presented their work at undergraduate conferences and regional classics conferences.
- **Making your education your own:** Thanks to generous support from the Georgia Watkins Fund, our program provides funds to help students participate in archaeological digs, select summer study programs, or conferences in classics. Grants are awarded on a competitive basis.
- **Embracing the liberal arts:** Since the field of classical studies embraces a wide variety of approaches to the study of the ancient Greeks and Romans, our program

encourages students who wish to relate their interest in classics with work in other disciplines. Our students often take courses in English, history, philosophy, religion, political science, and the modern languages.

Classical Studies Student Learning Outcomes

Students majoring in classical studies are expected to gain factual knowledge about key figures, historical events, and concepts from Greek and Roman antiquity. They will interpret and analyze significant works from antiquity, and at the same time gain a better understanding of cultural diversity by comparing current values and practices to those of the Greeks and Romans. They will become proficient in reading Latin or Ancient Greek texts and discover how knowledge of Latin or Ancient Greek helps in the understanding of modern languages.

Degree Programs

- Major in Classical Studies (BA)
- Minor in Classical Studies

Requirements for the Major

A minimum of 30 hours combined of classics, Greek, and/or Latin, including one 300-level course in Greek or Latin. A minimum of three 300-level courses. Students may test out of the 200-level courses.

Requirements for the Minor

A minimum of 18 hours combined of classics, Greek, and/or Latin. A minimum of two 300-level courses. Note: It is recommended that students learn either Greek or Latin, at least at the beginning level. If they continue with two courses at the 200 level or above, these courses will count both toward their minor and toward fulfilling the foreign language requirement for a liberal arts degree.

Core Courses Offered by Classical Studies

PCA262-CLA, Greek Art and Myth: Art illuminates myth; myth makes sense of art. Students will acquire a sense of the major periods of Western art, will consider artistic questions large (Is art subjective? Is there a proper subject matter of art?) and small (What is *contrapposto*?), will study in some depth about 60 artistic images, mostly Greek, and will become acquainted with a set of Greek myths. The course will include a museum visit, a skit, and a creative art project. (U)(3) Fall and spring.

TI200-CLA, Roman Perspectives: This course will examine civic engagement in the Roman world, both as a pagan and Christian capital for the West. We will undertake this investigation by looking at a variety of original sources translated into English. As we examine the texts of these authors, we will also have the opportunity to think about how the ideas of the ancient Romans have influenced cultures from Britain, France, and Spain in the West to the shores of North Africa to the civilizations of the Eastern Mediterranean. (U)(3) Fall.

TI201-CLA, Ancient Greek Perspectives: An examination of areas of ancient Greek culture. Sources include texts of poetry, history, drama, law, medicine, and philosophy, as well as works of art. Themes will vary depending on the professor. Possible themes: deep thinking and free thinking, participation in democracy, gender roles, warfare, and empire. (U)(3) Spring.

Classical Studies Courses

CLA261, Etymology: Word Power for Test Takers: Course will focus on the Greek and Latin roots that are the basis for much of the scientific, technical, and professional communities. Recommended for students intending to take the MCAT, LSAT, GRE, and GMAT. (U)(3)

CLA300, Study Tour of Classical Greece: Tour of the major archaeological sites and museums of the Bronze Age and Classical Greece. (U/G)(2-6) Summer.

CLA301, Epic Poetry: An in-depth study of the ancient epic. Course will focus on Homer's "*Iliad*," Homer's "*Odyssey*," or Virgil's "*Aeneid*." Other material will be brought in as background. (U)(3) Spring.

CLA303, Drama on the Ancient Stage: Course may focus on Greek or Roman tragedy or comedy. Performance may be part of the course. (U)(3) Fall.

CLA322, Art and Architecture of Greece and Rome: An introduction to the art and architecture of Greece and Rome, including the topography of Athens and Rome. (U)(3) Spring.

CLA323, Women in Antiquity: This course introduces students to primary source material (literary, documentary, and material) that sheds light on the lives of women in ancient Greece and Rome, methods of analyzing this data, and various debates in this field of study. We may also discuss issues of gender and sexuality, minorities, and non-elites. (U/G)(3) Occasionally.

CLA360, Topics in Classics: In-depth study of special topics not covered in regular courses. (U)(3) Fall and spring.

CLA400, Independent Study: Individual study of a specific topic in Classics that does not involve the reading of Latin or Greek texts. (U)(1) Occasionally.

CLA401, Independent Study: Individual study of a specific topic in Classics that does not involve the reading of Latin or Greek texts. (U)(2) Occasionally.

CLA402, Independent Study: Individual study of a specific topic in Classics that does not involve the reading of Latin or Greek texts. (U)(3) Occasionally.

CLA499, Honors Thesis: Thesis research. (U)(3) Occasionally.

Foreign Language Courses

GK101, Elementary Greek 1: Introductory course which prepares students to read the New Testament and the works of Homer, Sophocles, Plato, and others. (U)(4) Fall.

GK102, Elementary Greek: Introductory course which prepares students to read the New Testament and the works of Homer, Sophocles, Plato, and others. GK101 is a prerequisite. (U)(4) Spring.

GK203, Intermediate Ancient Greek 1: A course at the intermediate level, with emphasis on vocabulary acquisition. Material will be chosen for accessibility. Readings may include: Euripides' "*Alcestis*," Plato's "*Crito*," selections from Homer's "*Iliad*" or Herodotus' "*History*" or Lysias' speeches, or selections from the New Testament in Koine Greek. Prerequisite: GK101 and GK102 or placement at the 200 level. (U)(3) Occasionally.

GK204, Intermediate Ancient Greek 2: A course at the intermediate level, with emphasis on vocabulary acquisition. Material will be chosen for accessibility. Readings may include: Euripides' "*Alcestis*," Plato's "*Crito*," selections from Homer's "*Iliad*" or Herodotus' "*History*" or Lysias' speeches, or selections from the New Testament in Koine Greek. Prerequisite: GK101 and GK102 or placement at the 200 level. (U)(3) Occasionally.

GK301, Advanced Ancient Greek: A course at the advanced level with a vocabulary stretch and arcane points of grammar. Readings may include: tragedies of Aeschylus, Sophocles, or Euripides; Plato's "*Apology*," "*Symposium*," "*Phaedrus*," or selections from "*The Republic*;" Thucydides' *The*

History of the Peloponnesian War. This course is repeatable for credit. The author will change each semester. Prerequisites: GK203 and GK204, placement into the 300 level, or the permission of the instructor. (U/G)(3) Fall, spring, and summer.

GK360, Topics in Greek: In-depth study of works not covered in earlier courses. This course is repeatable for credit. Prerequisites: GK203 and GK204, placement into the 300 level, or permission of instructor. (U/G)(3) Fall, spring, and summer.

GK400, Independent Study: Directed reading in Greek. Consult head of department before registering. (U/G)(1) Fall, spring, and summer.

GK401, Independent Study: Directed reading in Greek. Consult head of department before registering. (U/G)(2) Fall, spring, and summer.

GK402, Independent Study: Directed reading in Greek. Consult head of department before registering. (U/G)(3) Fall, spring, and summer.

GK499, Honors Thesis: (U)(3) Occasionally.

LT101, Elementary Latin 1: An introductory course that prepares the student to read the Latin prose and poetry of Virgil, Homer, Livy, Ovid, and others. (U)(4) Fall.

LT102, Elementary Latin 2: An introductory course that prepares the student to read the Latin prose and poetry of Virgil, Homer, Livy, Ovid, and others. LT101 is a prerequisite. (U)(4) Spring.

LT203, Intermediate Latin 1: A course at the intermediate level, with emphasis on vocabulary acquisition. Material will be chosen for accessibility. Readings may include: Cicero's orations, Virgil's "*Aeneid*," or the letters of Pliny. Prerequisites: LT101 and LT102 or placement at the 200 level. (U)(3) Fall.

LT204, Intermediate Latin 2: A course at the intermediate level, with emphasis on vocabulary acquisition. Material will be chosen for accessibility. Readings may include: Cicero's orations, Virgil's "*Aeneid*," or the letters of Pliny. Prerequisites: LT101 and LT102 or placement at the 200 level. (U)(3) Spring.

LT301, Advanced Latin: A course at the advanced level with a vocabulary stretch and arcane points of grammar. Readings may include: Ovid's "*Metamorphoses*;" lyric poetry by Catullus, Propertius, Tibullus, and Ovid; satire by Horace or Juvenal; or the comedies of Plautus and Terence. Prerequisites: LT203 and LT204, placement into the 300 level, or permission of the instructor. (U/G)(3) Fall, spring, and summer.

LT360, Topics in Latin: In-depth study of works not covered in earlier courses. This course is repeatable for credit. Prerequisites: LT203 and LT204, placement into the 300 level, or permission of instructor. (U/G)(3) Fall, spring, and summer.

LT400, Independent Study: Directed reading in Latin. Consult head of department before registering. (U/G)(1) Fall, spring, and summer.

LT401, Independent Study: Directed reading in Latin. Consult head of department before registering. (U/G)(2) Fall, spring, and summer.

LT402, Independent Study: Directed reading in Latin. Consult head of department before registering. (U/G)(3) Fall, spring, and summer.

LT499, Honors Thesis: (U)(3) Occasionally.

Computer Science and Software Engineering

Administration

Jonathan P. Sorenson, PhD, Department Chair
Professors

Zhi-Hong Chen, PhD; Panagiotis K. Linos, PhD;
Jonathan P. Sorenson, PhD

Associate Professor

Ankur Gupta, PhD

Department Website

www.butler.edu/computer-science

Why Study Computer Science or Software Engineering?

These disciplines are an excellent choice for students who enjoy problem solving and are good at mathematics and the sciences. Good communication skills are also a plus, as this type of work is typically done in small groups or as part of a team. Computers and software have become essential tools in all disciplines, so you can pair the study of computer science or software engineering with a major or minor in any other area of study, including the sciences, business, fine arts, or the humanities. Employment prospects in computer science and software engineering are excellent.

Why Study Computer Science or Software Engineering at Butler?

- Our Engineering Projects in Community Service Program combines service learning with the practice of software engineering; student-run teams develop software for charity and nonprofit clients.
- Our supercomputer is available for student research projects, with possible support

available through the Honors Program and the Butler Summer Institute.

- Our students learn parallel programming theory and techniques both in the first-year-level CS142 course and in the junior/senior-level CS452 course.
- Most of our students add a second major or minor and still graduate on time.
- Quality internships and part-time jobs are plentiful in the Indianapolis area.
- Our alumni advisory board is active and engaged, not only mentoring our students and visiting for pizza lunches with our students, but also advising the department on curriculum and career preparation.

Our software engineering program prepares students for professional careers as software system designers, developers, testers, maintainers, and project managers. Our computer science program is more broad-based and prepares students not only for a variety of careers in the computing disciplines, such as systems or database administration and web development, but also for graduate study either in computer science or a related discipline, or for professional programs such as law school.

Degree Programs

- Major in Computer Science (BS, BA)
- Major in Software Engineering (BS, BA)
- Minor in Computer Science

Computer Science Student Learning Objectives

- Analyze and solve mathematics-based problems
- Understand and explain the main concepts, principles, algorithms, data structures, and theories of computer science
- Write programs and develop software to solve problems
- Communicate and work effectively in teams
- Articulate one's role in society as a computing professional, including ethical, legal, and social obligations

Requirements for the Computer Science Major

All of the following courses:

- MA106–107, Calculus and Analytic Geometry I, II
- MA215, Linear Algebra
- CS151 and CS252, Foundations of Computing I, II
- CS248, Object-Oriented Programming and Data Structures
- CS282 or CS283, EPICS I
- CS321, Computer Organization

- CS351, Algorithms
- SE361, Object-Oriented Design
- CS333, Theory of Database Systems
- CS452, Parallel Algorithm Design and Programming
- CS485, Computer Ethics
- CS473, Topics in Computer Science
- 1 course numbered CS440–459
- 1 course numbered CS430–439 or SE460 or above

Requirements for the Computer Science Minor

- CS151, Foundations of Computing I
- CS248, Object-Oriented Programming and Data Structures
- 12 additional credit hours of computer science or software engineering electives numbered 250 or above

Software Engineering Student Learning Objectives

- Analyze and solve mathematics-based problems
- Understand and explain the main concepts, principles, algorithms, data structures, and theories of computer science and software engineering
- Write programs and develop software to solve problems
- Communicate and work effectively in teams
- Articulate one's role in society as a computing professional, including ethical, legal, and social obligations
- Acquire and synthesize new knowledge for software development in specific application domains

Requirements for the Software Engineering Major

All of the following courses:

- MA106 and MA107, Calculus and Analytic Geometry I, II
- MA162, Probability and Statistics
- CS151 and CS252, Foundations of Computing I, II
- CS248, Object-Oriented Programming and Data Structures
- CS282 or CS283, EPICS I
- CS321, Computer Organization
- CS351, Algorithms
- CS333, Theory of Database Systems
- CS452, Parallel Algorithm Design and Programming
- CS485, Computer Ethics
- SE361, Object-Oriented Design
- SE461, Managing Software Development
- SE462, Modernizing Legacy Software

- SE463, Software Testing and Quality Assurance
- SE411, Internship

One of the following two courses:

- CS435, Computer Networks
- CS441, Organization of Programming Languages
- Three additional credit hours of computer science or software engineering electives numbered 300 or above

Core Courses Offered by Computer Science

AR220-CS, Robot Programming: This introductory programming course features personal robots that can move, draw, and take digital pictures. Robot behaviors are programmed and controlled remotely using a high-level language such as Python from a desktop or laptop computer. Topics include conditional execution, repetition, defining functions, and using arrays. No prior programming experience required. (U)(3) Fall, spring, and summer.

Computer Science Courses

CS142, Introduction to Computer Science and Programming: An introduction to programming in a high-level language (assignment, data types, expressions, selection, loops, functions, arrays) including parallel programming for supercomputers. Topics such as AI, software engineering, and databases are also discussed. Prerequisite: MA101 or equivalent. (U)(3) Fall, spring, and summer.

CS151, Foundations of Computer Science: Introduction to mathematical problem solving, with emphasis on techniques for designing computer-based solutions. Concepts include problem-solving principles, logic, proof techniques, sets, sequences, functions, relations, and inductive and recursive thinking. Prerequisites: MA101 or MA102 or equivalent, with a declared major or minor in CS/SE. (U) (3) Fall.

CS248, Object-Oriented Programming and Data Structures: This course is an introduction to object-oriented programming using Java. Topics include algorithm analysis, recursion, the stack, queue, tree, and heap data structures, sorting algorithms, and GUI programming. A brief survey of computer science is also included: history, software engineering, computer organization, operating systems, networks, programming languages, databases, artificial intelligence, and theory. Prerequisites: CS142 or equivalent and CS151. (U)(5) Spring.

CS252, Foundations of Computing 2: As a continuation of CS151, concepts include mathematical logic, formal grammars, algebraic structures, finite state machines and automata, graph theory, and combinatorics. Prerequisite: CS151 (U)(3) Spring.

CS282S, Epics 1 Service Learning: Supervised team software project for a local charity or nonprofit organization. May be repeated for credit. Corequisite: CS142 or equivalent. (U)(2) Fall and spring.

CS283S, Epics 1 Service Learning: Supervised team software project for a local charity or nonprofit organization. May be repeated for credit. Corequisite: CS142 or equivalent. (U)(3) Fall and spring.

CS300, Teaching Practicum: Students assist a faculty member teaching a 100- or 200-level CS course by helping students with assignments and laboratory exercises, conducting help sessions, preparing course materials, and setting up laboratory exercises. The student receives regularly scheduled supervision from the faculty instructor. May be repeated once for credit. (U)(3) Occasionally.

CS308, Problem Seminar: A survey of basic problem-solving strategies such as recursion, divide and conquer, and backtracking and applying these strategies to sample problems in mathematics, text processing, graphics, and games. Prerequisite: CS248 or permission of the instructor. (U)(1) Fall and spring.

CS321, Computer Organization: Principles of computer architecture are introduced from a layered point of view, beginning at the level of gates and digital logic, and progressing through micro-programming, the machine language execution cycle, addressing modes, symbolic assembly language, and the fundamentals of operating systems. Advanced topics including pipelined and parallel architectures are also covered. Corequisite: CS248. (U)(3) Fall.

CS333, Database Systems: An introduction to the theory, design, and use of modern database management systems. Topics include the relational, entity-relationship, and object-oriented data models, query languages such as SQL, file systems, concurrency and deadlock, reliability, security, and query optimization. Prerequisites: CS248 and CS252. (U/G)(3) Fall.

CS351, Algorithms: A systematic study of data structures and algorithms with an introduction to theoretical computer science. Topics include lists, stacks, queues, trees, and graph structure, searching and sorting algorithms, mathematical

algorithms, time and space complexity, an introduction to the theory of NP-completeness, and an introduction to computability theory. Prerequisite: CS248. (U)(3) Fall.

CS382S, Epics 2 Service Learning: Supervised team software project for a local charity or nonprofit organization. May be repeated for credit. Prerequisite: CS248. (U)(2) Fall and spring.

CS383S, Epics 2 Service Learning: Supervised team software project for a local charity or nonprofit organization. May be repeated for credit. Prerequisite: CS248. (U)(3) Fall and spring.

CS403, Independent Study: Provides an opportunity for qualified students to pursue special topics under the guidance of a department staff member. Prerequisite: Permission of the department. (U/G)(3) Occasionally.

CS411, Internship: Supervised work experience directly related to major area of study. Prerequisites: Junior or senior standing and permission of department. (U)(3) Occasionally.

CS431, Theory of Operating Systems: Introduces the major concept areas of operating systems principles, including the study of process, storage, and processor management; performance issues; distributed systems; and protection and security. Prerequisites: CS248, CS252, and CS321. (U/G)(3) Occasionally.

CS435, Computer Networks: An introduction to computer networks from a layered point of view beginning with the physical and data link layers, and progressing through the medium access layer, the network layer, the transport layer, and the applications layer. Specific content includes Ethernet, TCP/IP, and the Web. Students will write client/server programs that communicate across a network. Prerequisite: CS321. (U/G)(3) Occasionally.

CS441, Organization of Programming Languages: Emphasizes the principles and programming paradigms that govern the design and implementation of contemporary programming languages. Includes the study of language syntax, processors, representations, and paradigms. Prerequisites: CS252, CS321, and SE361. (U/G)(3) Occasionally.

CS447, Computer Graphics: An introduction to the mathematical basis of computer graphics and graphics algorithms. Topics include 2D and 3D graphics, transformations, perspective, and animation. Prerequisite: CS248. (U)(3) Occasionally.

CS451, Theory of Computation: Basic theoretical principles of computer science that are embodied in formal languages, automata, computability, and computational complexity. Includes regular expressions, context-free grammars, Turing machines, Church's thesis, and unsolvability. Prerequisites: CS252, CS321, and CS351. (U/G)(3) Occasionally.

CS452, Parallel Algorithm Design and Programming: A study of theoretical and practical paradigms of parallel algorithm design. Topics include model costs, lower bounds, architecture and topology, data-parallelism, synchronization, transactional memory, message passing, and parallel design for sorting, graphs, string processing, and dynamic programming. (U)(3) Spring.

CS455, Numerical Analysis: Solutions of equations and systems, error analysis, numerical differentiation and integration, interpolation, least squares approximation, and numerical solution of ordinary differential equations. Prerequisites: MA107 and CS142 or equivalent. (U/G)(3) Occasionally.

CS458, Introduction to Cryptography and Cryptanalysis: An introduction to classical and public-key cryptographic protocols, including mathematical and algorithmic cryptanalysis. Symmetric key systems include simple substitution and transposition ciphers, the Vigenère cipher, the one-time pad, block ciphers, and quantum cryptography. Public-key systems include RSA, discrete-log systems, Diffie-Hellman and ElGamal, digital signatures, and zero knowledge protocols. Prerequisites: CS151 or MA205, and CS142 or equivalent. (U)(3) Occasionally.

CS473, Topics in Computer Science: In-depth study of special topics not covered in regular courses. Prerequisite: Permission of department. (U/G)(3) Fall and spring.

CS482S, Epics 3 Service Learning: Supervised team software project for a local charity or nonprofit organization. May be repeated for credit. Prerequisites: SE361 and one of CS282, CS283, CS382, or CS383. (U)(2) Fall and spring.

CS483S, Epics 3 Service Learning: Supervised team software project for a local charity or nonprofit organization. May be repeated for credit. Prerequisites: SE361 and one of CS282, CS283, CS382, or CS383. (U)(3) Fall and spring.

CS485, Computer Ethics: Ethical and social issues in computing with emphasis on professional responsibilities, risks and liabilities, and intellectual property. Prerequisites: CS142 and sophomore standing. (U/G)(1) Fall.

CS490, Research Methods: An introduction to research methodology in computer science, including an overview of computer science literature and techniques for presenting and evaluating research results. Prerequisites: CS321, CS351, and SE361, or junior standing and permission of the department. (U)(2) Occasionally.

CS499, Honors Thesis. (U)(3) Occasionally.

Software Engineering Courses

SE267, Business Application Development: Programming in Visual Basic, with applications to business. Topics include data representation, control structures, arrays, functions, and objects. Prerequisite: None. (U)(3) Fall, spring, and summer.

SE331, Web-Based Client/Server Programming: Web-based applications programming in a Unix-based environment. Topics include XHTML/CSS and JavaScript on the client side, and PHP and Perl CGI programming on the server side. Other topics include client/server object-oriented software architectures, protection and security related to network programming, and database connectivity. Prerequisite: CS248 (U)(3) Occasionally.

SE361, Object-Oriented Design: This course uses the Unified Modeling Language (UML) as a vehicle to introduce the basic principles of object-oriented methodology and design, covering classes, objects, data abstraction, polymorphism, information hiding, and relationships among classes such as inheritance, association, aggregation, and composition. Specific design techniques are covered for object-oriented programming languages such as Java and C++. The course also provides a first exposure to the software development lifecycle of object-oriented software applications. A small team-design project is required. Prerequisite: CS248. (U)(3) Spring.

SE411, Internship: Supervised work experience in software engineering. Prerequisites: SE361, SE461, CS485, and one of SE462, CS382, or CS383. (U)(3) Occasionally.

SE461, Managing Software Development: Techniques, principles, and processes for developing large, complex software systems: Systems analysis and specification, modeling, design patterns, implementation, validation and verification, quality assurance, and project management. A team-based software project is required. Prerequisite: SE361. (U/G)(3) Occasionally.

SE462, Modernizing Legacy Software:

Fundamental concepts, principles, techniques, and tools for the maintenance and evolution of legacy software systems. Software maintenance and evolution process models, reengineering, reverse engineering, and program comprehension tools. A modernization project is required. Prerequisite: SE361. (U/G)(3) Occasionally.

SE463, Testing and Quality Assurance:

Basic concepts, systematic techniques, and tools involved in testing and QA of software systems. Some topics to be covered include black and white box testing techniques, object-oriented testing, regression testing, system integration testing, planning, and reporting of testing activities. Prerequisite: SE361 (U)(3) Occasionally.

SE473, Topics in Software Engineering:

In-depth study of special topics not covered in regular courses. Prerequisite: Permission of the department. (U/G)(3) Occasionally.

Economics

Professors

Peter Grossman, PhD, Efroymson Chair of Economics; Robert Main, PhD; William Rieber, PhD

Associate Professor

Kathy Paulson Gjerde, PhD

Adjunct Faculty

Robert Kirk, PhD; Theodore Kuhn, MA; Thomas Litkowski, MA; Timothy Zimmer, PhD

Program Website

www.butler.edu/las/economics

Why Study Economics?

Economics provides you with problem-solving and data-gathering skills to make informed decisions in a variety of settings, e.g., government, law, finance, business, and journalism; and for a variety of job responsibilities—from college intern to a newly hired bank credit analyst at one end of the spectrum, to U.S. senator, Supreme Court justice, or CEO of a successful business on the other.

Besides being a strong major in its own right, economics is a nice complement for students who have interests in philosophy, political science, sociology, history, mathematics, psychology, foreign languages, engineering, and English. Indeed, the Nobel Prize in Economics is often awarded to economists who also have a keen interest in one of the above areas.

Why Study Economics at Butler?

You can study economics as a major in the College of Liberal Arts and Sciences and also as a major in the College of Business. The student in Liberal Arts and Sciences may have a given career path in mind but often does not. He or she knows that economics offers an array of opportunities and takes economics to learn critical-thinking skills and about the dynamic economic environment in which we live. The career choice will follow. The same applies to a student who majors in the College of Business, but the career choice in that case is more targeted to the business sector. The economics courses taken in either college are the same; the courses outside of economics, though, are different between the two colleges.

Economics Student Learning Outcomes

Students will learn and discuss issues such as how the Federal Reserve creates money and influences interest rates domestically and around the world, why the euro changes in value against the dollar, and the reason behind Zimbabwe inflation. You'll learn about the "Wealth of Nations" from rich countries (e.g., the United States) to poor ones (e.g., Bangladesh), about growing countries (e.g., China) and countries transitioning to capitalism (e.g., Russia). You'll learn about the invisible hand of the market and the different roles of government in a mixed economy.

The tools in addressing these questions include supply and demand, international trade and exchange rate determination, monetary and fiscal policy, market structure, and statistical relationships.

Degree Programs

- Major in Economics (BA)
- Minor in Economics

Requirements for the Major

The major consists of 34 hours, including the required foundation (13 hours*), other required courses (9 hours), and electives (12 hours).

Required Foundation

- EC231, Principles of Microeconomics
- EC232, Principles of Macroeconomics
- MA125, Business Calculus or MA106, Calculus and Analytical Geometry I (either course also satisfies the University Core Curriculum under Analytic Reasoning)
- MS100, Basic Excel Skills
- MS264, Statistics
- MS265, Information Technology

* Not counting MA125 or MA106, and with MS101 being one hour.

Other Required

- EC332, Intermediate Macroeconomics
- EC354, Intermediate Microeconomics
- EC464, Quantitative Methods—
Econometrics

Electives: any four courses numbered 300 or 400 level

Requirements for the Minor

The minor consists of 18 hours:

- EC231, Principles of Microeconomics
- EC232, Principles of Macroeconomics
- Either EC332, Intermediate
Macroeconomics or EC354, Intermediate
Macroeconomics
- 3 courses numbered 300 or 400 level

Core Courses Offered by Economics

SW220-EC, The Economy and Society:

This course examines important concepts of microeconomics and macroeconomics and analyzes issues such as energy prices, prescription drug costs, pollution, and globalization of markets using these concepts. It explores how economic life is intertwined with a society's culture, politics, values, and history. Further, it considers the limitations of the economic methodology to place economics in a context with the other social sciences. (U)(3) Fall and spring.

SW221-COB, Sustainability in Institutions:

There is an emerging body of thought that argues that, in order to be successful in the long run, institutions of all sorts—including but not limited to businesses—need to take into account economic performance, environmental impacts, and social justice. The course will explore what these concepts mean and the challenge of implementing a workable integration of these concepts. The course is crossdisciplinary and will get into issues of science, social science, ethics, and economics. Historically, environmental and social impacts have been considered, if at all, as costs to be ignored, minimized, or externalized as much as possible. This new body of thought argues that environmental quality and social performance should be integrated into institutional strategy. This course will introduce students to economic and ethical analysis in order to help them to have appropriate bases for making judgments. The course will then explore the challenge of minimizing environmental and social impacts. (U)(3) Occasionally.

Economics Courses

EC231, Principles of Microeconomics:

This course examines the economic behavior of individuals, firms, and markets. The course provides basic concepts of economics and the analytical tools for students to understand how and why people make economic choices. Prerequisites: Sophomore standing, or 15 hours and MA106 or MA125. (U)(3) Fall, spring, and summer.

EC232, Principles of Macroeconomics:

This course studies aggregate output, employment, trade, government fiscal and monetary policies, and other national and international economic issues. It provides a framework for understanding and evaluating economic policy choices made by political leaders throughout the world. Prerequisite: EC231. (U)(3) Fall, spring, and summer.

EC332, Intermediate Macroeconomics:

Discusses measures of national income; it also examines causes of growth and fluctuations in national income. Prerequisites: EC231 and EC232. (U)(3) Annually, term varies.

EC336, Comparative Economic Systems:

An inquiry into the underlying principles and operational methods of national economic systems throughout the world. Focuses on the transition of the former socialist countries to market economies, and reviews the alternative models of central planning, market socialism, and market capitalism. Compares the economic policy choices (and consequences) that countries adopt to further national objectives. Prerequisite: SW220 or EC231. (U)(3) Occasionally.

EC339, Economic History of the United

States: Study of the economic development of the United States, emphasizing both theoretical and quantitative tools of analysis. Prerequisite: SW220 or EC231 (U)(3) Occasionally.

EC342, Law and Economics:

This course looks at law and crime from an economic perspective. Topics include property law, contract law, torts, and crime. The course examines theory as well as many actual cases. It also explores the evolution and economic impacts of our laws and legal structure. Prerequisite: EC 101 or SW220 or EC 231 and EC232. (U)(3) Occasionally.

EC346, Health Care Economics:

The course will apply economic tools and methods to better understand the current health care system and possible reform policy initiatives. It is intended to be discussion-based and should be attractive to students with a diverse academic background. Prerequisite: EC231 (U)(3) Fall and spring.

EC351, Urban Economics: The application of economic analysis to urban affairs, e.g., ghetto redevelopment, growth, and fiscal management. Theory and policy both are considered in analyzing urban economic problems. Prerequisite: SW220 or EC231. (U)(3) Occasionally.

EC352, Personnel Economics: This course presents an economic approach to a variety of human resource issues, including recruitment and hiring, turnover, motivating workers to high levels of productivity, and job assignment. Basic microeconomic theory is applied to these topics to gain a better understanding of how to successfully manage people. Prerequisites: EC231 and EC232. (U)(3) Spring.

EC354, Intermediate Microeconomics: Economic theory and management decision-making. Specific topics include demand determinants, cost-output functions, and pricing theory. Credit will not be given for both EC350 and EC354. Prerequisites: EC231, EC232, and MA125 or MA106. (U)(3) Annually, term varies.

EC355, Money and Banking: The study of the U.S. monetary system, including the role of the Federal Reserve System. The functions and operations of commercial banks and other depository institutions also are examined. Credit will not be given for both EC355 and FN371. Prerequisites: EC231, EC232. (U)(3) Occasionally.

EC391, Environmental and Natural Resources: The economics of externalities and their relation to property rights. Alternative strategies for dealing with environmental problems. Analysis of problems of allocating natural resources over time. Prerequisite: SW220 or EC231. (U)(3) Occasionally.

EC401, Independent Study. (U)(1) Occasionally.

EC402, Independent Study. (U)(2) Occasionally.

EC403, Independent Study. (U)(3) Occasionally.

EC433, International Economics: Examines theories of international trade, tariffs, and regional economics integration; also examines foreign trade financing, international investment, and balance of payments adjustment. Prerequisites: EC231, EC232. (U)(3) Fall, spring, and summer.

EC434, Public Finance: Systems of expenditure, taxation, borrowing, and budgeting of national, state, and local governments. Theories and

principles of taxation. Prerequisite: EC101 or EC231. (U)(3) Occasionally.

EC438, Economic History of Europe: A study of the economic development of selected European states since 1500. Emphasis on economic, demographic, political, social, and cultural forces affecting production and distribution. Prerequisite: SW220 or EC231. (U)(3) Occasionally.

EC462, Mathematical Economics: This course is an introductory exploration of mathematical economics. It examines economics through mathematical models and operations and explores basic issues in economics—supply and demand, profit and utility maximization, monetary and fiscal policy—using formal mathematical models. Students will not simply go over mathematical economic models but will develop an appreciation for how formal economic models are constructed. Prerequisite: EC231, EC232, MA106 or equivalent. (U)(3) Occasionally.

EC464, Quantitative Methods—Econometrics: Applications of statistical methods to economic analysis and forecasting. Examines methods of hypothesis testing, linear regression, and time-series analysis, and applies these to issues of micro- and macroeconomics. Prerequisites: EC231, EC232, and MS264 or MA260. (U)(3) Spring.

EC495, Special Topics in Economics: Seminar in selected economics topics. Course content will vary from semester to semester. Prerequisite: SW220 or EC231. (U)(3) Occasionally.

EC499, Honors Thesis. (U)(3) Occasionally.

Engineering Dual Degree Program

Administration

Joseph L. Kirsch, PhD, Program Director;
Jessica R. McCormick, MST, Academic Program Coordinator and Advisor

Program Website

www.butler.edu/engineering

The Engineering Dual Degree Program (EDDP) is a partnership between the College of Liberal Arts and Sciences at Butler University and the Purdue School of Engineering and Technology at Indianapolis. Through this five-year undergraduate program, students can earn two degrees: a degree in engineering from Purdue University along with a degree from Butler University in one or more of the following disciplines: sciences; mathematics; economics;

or science, technology, and society. Application for the EDDP is through Butler University, as well as student enrollment and residence for the duration of the program.

Why Study Engineering at Butler?

Two universities. Two degrees. One program.

- The EDDP provides a student with the opportunity for a diverse, creative, professional, technical, and liberal educational experience occurring through two quality, neighboring universities.
- Students have access to engineering degrees that are ABET (Accreditation Board for Engineering and Technology) accredited and Butler University majors that rest upon a strong tradition of professional and liberal education.
- Our curriculum is integrated throughout the entire program. Most engineering courses are taught at Butler for the first three years of the program with courses taken at both campuses (a five-mile commute) during the last two years.
- Students receive individualized academic support and regularly graduate with their two degrees in five years.
- Career services are available to EDDP students through Butler University, the Purdue School of Engineering and Technology at Indianapolis, and Purdue University at West Lafayette.
- One internship is required, which is typically completed during the summer; however, many students complete more than one or complement their internship with a research experience.
- Students have diverse educational experiences that lead to a wide range of career opportunities with a highly successful placement rate for graduates.

EDDP students select a major from both institutions.

Major Options at Butler University

- Biology
- Chemistry
- Computer Science
- Economics
- Mathematics
- Physics
- Science, Technology, and Society

Major Options at the Purdue School of Engineering and Technology at Indianapolis (IUPUI)

- Biomedical Engineering
- Computer Engineering

- Electrical Engineering
- Energy Engineering
- Mechanical Engineering
- Motorsports Engineering

The EDDP curriculum can be viewed at the program website. Engineering courses are noted on the Butler University transcript with a departmental designation of DD.

English

Administration

Andrew G. Levy, PhD, Department Chair

Professors

Dan Barden, MFA; Joseph R. Colavito, PhD; Hilene Flanzbaum, PhD; Andrew G. Levy, PhD; Susan Neville, MFA; Carol Reeves, PhD; William P. Walsh, PhD

Associate Professors

Chris Forhan, MFA; Lee Garver, PhD; Jason Goldsmith, PhD; Ania Spyra, PhD; William Watts, PhD

Assistant Professors

Michael Dahlie, MFA; Brynnar Swenson, PhD

Instructors

Barbara Campbell, PhD; Natalie Carter, PhD; Bryan Furuness, MFA; Angela Hofstetter, PhD; Jim Keating, MBA, EdD; Alessandra Lynch, MFA; Nicholas Reading, MFA; Robert Stapleton, MFA; Susan Sutherland, MA

Department Website

www.butler.edu/english

Why Study English?

The English major offers students the tools to master close reading, formal analysis, literary history, critical theory, research strategies, and creative expression. English majors enjoy the beauty of great works of art as they simultaneously ask important questions about the relationship between language and the production of meaning and value. Our students learn to discuss and write critically about the many ways literature and language have influenced the values and lived experiences of societies over centuries, among genders and classes, races and ethnicities, and across geographical boundaries. When English majors head out into the world, we expect that they will carry with them a passion for reading and writing, and a commitment to use language clearly, purposefully, and with sophistication and elegance.

Why Study English at Butler?

The English Department at Butler University balances the study of traditional fields of English and American literature with a commitment to

interdisciplinary work, involving contemporary fields such as gender and sexuality, film studies, comparative literature, cultural studies, rhetoric of science, and creative writing. Our full-time faculty includes formalists and theorists, cultural historians and rhetoricians, and novelists and poets. Our course offerings reflect diversity: students can choose a traditional English Literature major, or a major with a concentration in Creative Writing; Literary Theory, Culture, and Criticism; or Public and Professional Writing.

In each case, students will find small classes, dedicated teachers, and an active and engaged group of fellow students.

Butler's English Department is home to one of the country's most important Visiting Writers Series, which encourages a sense of literary and creative community that goes beyond the classroom. Recent visitors to the series have included Joyce Carol Oates, Richard Russo, Yusef Komunyakaa, Elmore Leonard, Jorie Graham, and Junot Diaz. The popular Visiting Writers Series course offers students the chance to meet and talk to many of these writers. The department's secondary programs also extend the opportunities for our majors, including a city-wide creative writing camp, a large peer-tutoring program where students help students across the University, an award-winning Writing in the Schools service-learning initiative, and an internship program where students gain experience in classrooms, pressrooms, and in small and large businesses.

English Student Learning Objectives

Our students graduate as incisive readers, cogent thinkers, and powerful writers, well prepared for any profession requiring a rigorous understanding and mastery of language. Because of their exposure to a vast array of human experiences in literature, English majors are more likely to be able to listen to the voices of opposition and disagreement; to accept the persistence in the world of ambiguity and complexity without resorting to facile simplification, cliché, or stereotypes; to consider evidence rather than rush to judgment; and to react to human dilemmas and suffering with compassion. English majors also carry with them a lasting ability to take informed pleasure in all forms of literature and creative production. We believe that the education our majors gain as readers and writers is invaluable whether they work in education, the legal field, the arts, electronic communication, publishing, business, the nonprofit sector, government, or other careers.

Degree Programs

- Major in English (BA)
Concentrations in Creative Writing; Literary Theory, Culture, and Criticism; Literature; and Public and Professional Writing
- Master of Arts in English (MA)
- Master of Fine Arts in Creative Writing (MFA)
- Minor in English Literature
- Minor in Creative Writing
- Minor in Public and Professional Writing

Requirements for the Major

- Minimum of 36 hours beyond first-year English
- Sophomore Requirements: EN185 and three of the four courses in the Literary and Cultural History Sequence (EN245, EN246, EN265, and EN266), EN321 or EN322.
- Junior/Senior Requirements: EN390, Research Seminar; one 300–400-level course in language, rhetoric, or literary criticism; two 300-level literature courses; one 300–400-level course in subject area not covered in the Literary and Cultural History Sequence; for seniors, one 400-level seminar and one 450-level senior essay with emphasis in writing.

With Creative Writing

Through the concentration in creative writing, English majors have the opportunity to study the art and craft of creative writing. Students are given the opportunity to take workshops in poetry, fiction, and nonfiction. Recent independent-study projects have included screenplays, memoirs, and graphic novels. Each year, through the nationally recognized Vivian S. Delbrook Visiting Writers Series, students have the opportunity to meet and work one-on-one with writers such as Jonathan Lethem, Jean Valentine, and Lorrie Moore. Students who enroll in the creative writing concentration will take:

- Minimum of 48 hours beyond first-year English
- Sophomore Requirements: EN185, EN218, EN219, three of the four courses in the Literary and Cultural History Sequence (EN245, EN246, EN265, and EN266); EN321 or EN322
- Junior/Senior Requirements: EN390: Research Seminar; one 300–400-level course in language, rhetoric, or literary criticism; two 300-level literature courses; one 300–400-level course in subject area not covered in the Literary and Cultural

History Sequence; two 300-level writing courses; for seniors, EN410, Senior Creative Writing Seminar, one creative writing portfolio, and one EN450 senior essay course

With Literary Theory, Culture, and Criticism

Students will take additional courses in cultural studies, comparative literature, literary criticism, and critical theory in order to study literary texts in a global cultural context. LTCC courses will look at diverse cultural objects—novels, plays, films, visual arts, and media—through the lens of the literary and cultural theories, with the goal of producing sophisticated readers of the contemporary world. This concentration is highly recommended for those planning to pursue advanced degrees in the humanities.

- Minimum of 48 hours beyond first-year English
- Sophomore Requirements: EN185, three of the four courses in the Literary and Cultural History Sequence (EN245, EN246, EN265, and EN266); EN287, Literary Theory, Culture, and Criticism; EN321 and EN322
- Junior/Senior Requirements: EN390, Research Seminar; one 300–400-level course in language or rhetoric; EN385, Studies in Literary Criticism or EN387, Studies in Literary Theory; two 300-level literature courses; two 300–400-level Literary Theory, Culture, and Criticism-approved electives, including at least one EN394/EN494 Special Topics in Film; for seniors, one 400-level seminar and one EN450-level senior essay

With Public and Professional Writing

Public and Professional Writing courses will prepare you for writing in the world—outside of college and literature classes. PPW courses teach about how to write for a specific audience, and how to use verbal and visual styles to write, design, and edit documents. Course contexts include writing in the workplace, writing in nonprofit settings, writing in the arts, writing in the health sciences, writing about law and public policy, editing and publishing, and grant writing. PPW students also learn effective collaborative skills in internships with community clients, and learn how to build a professional writing portfolio.

- Minimum of 48 hours beyond first-year English
- Sophomore Requirements: EN185, EN218, EN219, three of the four courses in the

Literary and Cultural History Sequence (EN245, EN246, EN265, and EN266); EN321 or EN322; and EN203, Intro to Professional Writing

- Junior/Senior Requirements: EN390, Research Seminar; one 300–400-level course in language, rhetoric, or literary criticism; two 300-level literature courses; one 300–400-level course in subject area not covered in the Literary and Cultural History Sequence; two 300-level professional writing courses; EN386, Studies in Rhetoric, or ST330, Social and Rhetorical Study of Science and Technology; for seniors, EN403, Senior Seminar and Internship in Professional Writing, and one EN450 senior essay

Requirements for the English Literature Minor

- Minimum of 18 hours beyond first-year English
- EN185, 3–6 hours of 200-level literature courses, and 9–12 hours of 300- and 400-level literature courses

Requirements for the Creative Writing Minor

- Minimum of 21 hours beyond first-year English
- EN185, EN218, or EN219; 9 additional hours in writing courses and 6 hours of literature courses, including at least one course at the 300 level or above

Requirements for the Public and Professional Writing Minor

- Minimum of 21 hours beyond first-year English
- EN185, EN203, and EN303; 6 additional hours in writing courses and 6 hours of literature courses, including at least one course at the 300 level or above

Core Courses Offered by English

PCA218-EN, Visual Literature: The 20th-century collision of postmodern and digital cultures has given rise to visual narratives in increasingly diverse forms. This course will take inventory of classic story structures, then survey the cultural landscape for dynamic examples of visual literatures. Our investigations are likely to include video games, infographics, sequential art, maps, diagrams, iPhone apps, and more. (U) (3) Summer.

PCA232-EN, Seeing the World and the Self: When you look out the window, do you

see a tree or the rhythmic sway of dark line and bright color? Do you see a field of grass or waves of innumerable greens? This course will encourage you to see the world through the eyes of an artist by focusing on the natural world. To achieve this we will examine a variety of formats including poetry, the personal essay, painting, and photography in relation to key aesthetic concepts such as the sublime, the beautiful, and the picturesque. We will juxtapose contemporary writers and artists with those from earlier periods to demonstrate how the way we see the world is culturally determined. We will complement our readings with trips to nearby museums (e.g., Indianapolis Museum of Art), galleries, and the studios of local artists. In addition, we will take advantage of such local natural resources as the grounds of the IMA, the canal walk, and Holcomb Gardens, where you will find the raw material for your own reflection and creative expression. (U)(3). Fall and spring.

PCA233-EN, Storycraft: In this course we'll blend the study of craft—the tools and techniques of storytelling—with creation. You'll engage with published stories in addition to writing your own, all to learn how stories work, and how you work best as a writer. (U)(3)

PCA234-EN, Bring the Noise—Spoken Word Between the Lines: Students will explore the dynamism of spoken word evidenced in the resurgence of performance-based art and poetry venues. Study the creative techniques involved in bringing written words to life. Examine past and present performers' stylistic approaches to captivating an audience. Discover how to develop and enhance poetry from the page to the stage. (U)(3) Fall.

TI210-EN, Inquiries in American Literature and History I: This course will be organized around a theme in early American literature, and thereby seek to increase students' understanding of major works, authors, and literary movements of the period. Texts for the course will come primarily from the period up to the American Civil War, and both the texts and the authors studied will be placed within their larger literary and cultural contexts. Particular themes for the course will be published each semester in the schedule of classes. (U)(3) Fall.

TI211-EN, Inquiries in American Literature and History II: This course will be organized around later American literature, and thereby seek to increase students' understanding of major works, authors, and literary movements of the period. Texts for the course will come primarily from the period after the American Civil War, and both the texts and the authors

studied will be placed within their larger literary and cultural contexts. Particular themes for the course will be published each semester in the schedule of classes. (U)(3) Spring.

TI212-EN, Inquiries in British Literature and History I: This course will be organized around early British literature, and thereby seek to increase students' understanding of major works, authors, and literary movements of the period. Texts for the course will come primarily from the period up to 1800, and both the texts and the authors studied will be placed within their larger literary and cultural contexts. Particular themes for the course will be published each semester in the schedule of classes. (U)(3) Fall.

TI213-EN, Inquiries in British Literature and History II: This course will be organized around later British literature, and thereby seek to increase students' understanding of major works, authors, and literary movements of the period. Texts for the course will come primarily from the period after 1800, and both the texts and the authors studied will be placed within their larger literary and cultural contexts. Particular themes for the course will be published each semester in the schedule of classes. (U)(3) Spring.

TI214-EN, Shakespeare: Introduces Shakespeare's themes, stagecraft, language, and moral vision with special attention to the varieties of human experience portrayed in the plays. (U)(3) Fall and spring.

TI215-EN, Theory, Culture, Criticism: This course is an introduction to cultural studies: a critical, theoretical, interpretive, and interdisciplinary way to understand our world and our place in it. This course will look at diverse cultural objects—novels, plays, films, visual arts, and media—through the lens of the literary and cultural theories, with the goal of producing sophisticated readers of the contemporary world. (U)(3) Fall and spring.

English Courses

EN101, Writing Tutorial: Intensive practice in discovering, shaping, and communicating meaning through writing. Individualized instruction for students who need additional critical reading and writing development to perform satisfactorily in the First Year Seminar. Students will meet during the first week of classes at the published time, but, thereafter, students will arrange a weekly tutorial time with the professor as well as arrange weekly or biweekly tutorials with a peer tutor from the Writers' Studio. Students are assigned to the course on the basis of tests and writing samples. Pass/fail credit. (U)(3) Fall.

EN185, Introduction to the Discipline of English: Introduces students to the methods of critical reading and writing and helps them to develop the skills necessary for the study of literature. Required of all English majors. Prerequisite: EN102. (U)(3) Fall and spring.

EN201, Advanced Composition: Studies the craft of expository prose. Emphasizes the construction of well-developed and well-supported arguments. Prerequisites: FYS101 and FYS102 (U)(3) Annually, term varies.

EN203, Intro Professional Writing: This course introduces students to the opportunities available and the skills needed to write in a variety of professional settings, including businesses, nonprofit organizations, and publications. Students in the course will learn to write for a variety of audiences and a variety of purposes. Prerequisites: FYS101 and FYS102. (U)(3) Fall and spring.

EN218, Intro Creative Writing—Poetry: Focuses on the connection between reading and writing. Emphasis on techniques of writing poetry. (U)(3) Fall and spring.

EN219, Intro Creative Writing—Prose: Focuses on the connection between reading and writing. Emphasis on techniques of prose writing, fiction, and nonfiction. Prerequisites: FYS101 and FYS102 (U)(3) Fall and spring.

EN245, Inquiries in American Literary and Cultural History 1: This course will be organized around a theme in early American literature, and thereby seek to increase students' understanding of major works, authors, and literary movements of the period. Texts for the course will come primarily from the period up to the American Civil War, and both the texts and the authors studied will be placed within their larger literary and cultural contexts. Particular themes for the course will be published each semester in the schedule of classes. (U)(3) Fall.

EN246, Inquiries in American Literary and Cultural History 2: This course will be organized around a theme in later American literature, and thereby seek to increase students' understanding of major works, authors, and literary movements of the period. Texts for the course will come primarily from the period after the American Civil War, and both the texts and the authors studied will be placed within their larger literary and cultural contexts. Particular themes for the course will be published each semester in the schedule of classes. (U)(3) Spring.

EN265, Inquiries in British Literary and Cultural History 1: This course will be organized around a theme in early British literature, and thereby seek to increase students' understanding of major works, authors, and literary movements of the period. Texts for the course will come primarily from the period up to 1800, and both the texts and the authors studied will be placed within their larger literary and cultural contexts. Particular themes for the course will be published each semester in the schedule of classes. (U)(3) Fall.

EN266, Inquiries in British Literary and Cultural History 2: This course will be organized around a theme in later British literature, and thereby seek to increase students' understanding of major works, authors, and literary movements of the period. Texts for the course will come primarily from the period after 1800, and both the texts and the authors studied will be placed within their larger literary and cultural contexts. Particular themes for the course will be published each semester in the schedule of classes. (U)(3) Spring.

EN287, Literary Theory, Culture, and Criticism: This course is an introduction to cultural studies: a critical, theoretical, interpretive, and interdisciplinary way to understand our world and our place in it. This course will look at diverse cultural objects—novels, plays, films, visual arts, and media—through the lens of the literacy and cultural theories, with the goal of producing sophisticated readers of the contemporary world. (U)(3) Fall and spring.

EN301, Topics in Advanced Composition: Studies specific prose methods or styles of writing. Recent offerings include review writing, stylistic analysis, classical rhetoric, and peer tutoring. Open to juniors and seniors. (U/G)(3) Spring.

EN303, Studies in Professional Writing: You will learn some basic forms of professional writing as well as some of its special purposes such as public education and outreach, argument and advocacy, reporting, reviewing, or entertaining. You will learn to write within such areas as the environment, health and medicine, science, and technology. (U/G)(3) Annually, term varies.

EN310, Intermediate Writing Workshop: Students will have the opportunity to work on their own writing in a workshop setting, which includes the participation and critique of all other students in the course. Students will read extensively in the specified genre and

attend Butler's Visiting Writers' Series events. Prerequisites: EN218 and EN219 or permission of the director of creative writing. (U/G)(3) Fall and spring.

EN319, History of the English Language: Studies changes in our language from Indo-European and Old English through Middle English to modern American and British English. Open to juniors and seniors. (U/G)(3) Occasionally.

EN321, Comparative Literature 1: Studies world literature in historical, aesthetic, and cultural context. Prerequisite: EN185. (U/G)(3) Fall and spring.

EN322, Comparative Literature 2: Studies world literature in historical, aesthetic, and cultural context with special attention paid to issues in literary and translation theory. Prerequisite: EN321 or junior/senior status. (U/G)(3) Occasionally.

EN341, Topics in 19th Century A: Studies major writers within the context of 19th-century American culture. (U/G)(3) Annually, term varies.

EN362, Renaissance Literature: Studies English poetry, prose, and drama of the 16th and early 17th centuries. Open to juniors and seniors. (U/G)(3) Occasionally.

EN363, Shakespeare: Studies representative comedies, tragedies, and histories in both their historical and intellectual contexts and their adaptations to modern performance. Open to juniors and seniors. (U/G)(3) Fall and spring.

EN366, Romanticism: Studies British poetry and prose of the late 18th through the mid-19th century. Examines the aesthetic, historical, and intellectual issues of the Romantic Revolution. Particular themes will be published each semester in the schedule of classes (U/G)(3) Occasionally.

EN367, Victorian Literature: Studies English poetry and prose from 1832 to the death of Queen Victoria in 1901. Examines the aesthetic, historical, and intellectual issues of the period and shows how late-Victorian literature provides a bridge to 20th-century aesthetics. Open to juniors and seniors. (U/G)(3) Occasionally.

EN368, 20th Century British Literature: Studies modern and postmodern British poetry and prose in historical, aesthetic, and cultural context. Open to juniors and seniors. (U/G)(3) Occasionally.

EN370, Literature and Public Problems: This course explores how literary works capture, contextualize, and imagine past, present, or future public problems such as environmental health, economic issues, and other social issues that impact locally, nationally, and/or internationally. (U)(3) Annually, term varies.

EN381, Studies in Major Authors: Specific courses focusing on extensive study of one or two major writers, their lives, their art, and their development. Open to juniors and seniors. (U/G)(3) Annually, term varies.

EN382, Studies in Poetry: Specific courses on important groups of poets, historical periods of poetry, or bodies of national poetry. Current offerings include modern American poetry, modern British poetry, and contemporary international poetry. Open to juniors and seniors. (U/G)(3) Annually, term varies.

EN384, Studies in Drama: Specific courses on genres of drama, historical periods of drama, or bodies of national drama. Current offerings include Elizabethan and Jacobean drama, modern American drama, and modern European drama. Open to juniors and seniors. (U/G)(3) Annually, term varies.

EN385, Studies in Literary Criticism: Specific courses in the history of literary criticism, important groups of critics, or the application of literary critical methods. (U/G)(3) Annually, term varies.

EN386, Studies in Rhetoric: Offers general and specialized study of the history, criticism, theory, literature, and application of the rhetorical arts. (U/G)(3) Annually, term varies.

EN387, Studies in Literary Theory: Specific courses in the history of literary and critical theory, important groups of theorists, or the application of critical methodologies. (U/G)(3) Annually, term varies.

EN390, Research Seminar: Focusing on a single text, or a set of texts by a single author, this course is designed to equip students with the research and writing skills necessary for advanced work in English. This course is required of all English majors, and should be taken during the junior year. Prerequisites: EN185 and two of the following: EN245, EN246, EN265, and EN266. (U/G)(3) Fall and spring.

EN391, Special Topics in Literature: Specific short courses on topics of interest. Prerequisites: Open to juniors, seniors, and graduate students (first-year students and sophomore with permission). (U/G)(1)

EN392, Special Topics in Literature: Specific short courses on topics of interest. Open to juniors, seniors, and graduate students (first-year students and sophomore with permission). (U/G)(2) Occasionally.

EN393, Special Topics in Literature: Specific courses on topics of interest. Open to juniors and seniors. (U/G)(3) Fall and spring.

EN394, Special Topics in Film: Specific courses on topics of interest. Open to juniors and seniors. (U/G)(3)

EN396, Internship: Directed experience in a career setting. Students apply through the head of the department. Open to junior and senior majors. (U)(6) Fall and spring.

EN397, Writing Fellows: Writing Fellows work with a designated core class (usually FYS, but other core courses with similar writing requirements may qualify) and instructor throughout the semester, attending class meetings, completing reading assignments, and serving as writing consultants. Students will meet on a regularly scheduled basis with the fellows director, complete assigned pedagogical readings, and complete an end-of-semester report. Must be taken in conjunction with a two-hour independent study with the designated instructor, and with permission of both fellows director and designated instructor. Prerequisites: Completion of FYS, graduate status, and permission of instructor. (U/G)(3) Fall and spring.

EN403, Senior Seminar in Professional Writing: In this advanced course in professional writing, students will undertake a major project in the community, and they will also compose a portfolio of their professional writing. (U)(3) Fall and spring.

EN410, Senior Creative Writing Seminar: Students will participate in an advanced writing workshop, critique other students' work, attend Butler Visiting Writers' Series events, and complete a substantial writing project. Prerequisites: Senior standing and pre-approval of course project by director of creative writing. (U)(3) Spring.

EN422, Comparative Literature 2: Surveys major periods and texts in non-Western world literature. (U/G)(3) Occasionally.

EN450, The Senior Essay: In this course, students will work towards completing their Senior Essay, a 20–25-page literary, research-based paper that is a requirement for graduation in the English major. Students will master

professional writing and research methods in their field, as well as techniques for revising prose. (U)(3) Fall and spring.

EN455S, Writing in Schools: This class will rotate classroom discussion sessions where students examine various modes of age-appropriate creative and expository writing pedagogy, and an active experience where students guide and teach elementary or secondary school students to express themselves in literary genres. (U/G)(3) Fall and spring.

EN463, Shakespeare: Studies representative comedies, tragedies, and histories in both their historical and intellectual contexts and their adaptations to modern performance. Open to juniors and seniors. (U/G)(3) Occasionally.

EN466, Romanticism: Studies British poetry and prose of the late 18th through the mid-19th century. Examines the aesthetic, historical, and intellectual issues of the Romantic Revolution. Particular themes will be published each semester in the schedule of classes (U/G)(3) Occasionally.

EN482, Studies in Poetry: Specific courses on important groups of poets, historical periods of poetry, or bodies of national poetry. Current offerings include modern American poetry, modern British poetry, and contemporary international poetry. Open to juniors and seniors. (U/G)(3) Occasionally.

EN493, Special Topics in Literature: Specific courses on topics of interest. Open to juniors and seniors. (U/G)(3) Occasionally.

EN494, Special Topics in Film: Specific courses on topics of interest. Open to juniors and seniors. (U/G)(3)

EN495, Independent Study. (U/G)(1) Fall and spring.

EN496, Independent Study. (U/G)(2) Fall and spring.

EN499, Honors Thesis: Senior majors. (U)(3) Fall and spring.

MA Program

The English MA program offers graduate students the opportunity to pursue one of two possible advanced paths of study. In the thesis track, MA students complete 24 semester hours of coursework and six semester hours of MA thesis work. In the non-thesis track, students complete 36 semester hours of coursework. Individuals who complete this degree should expect to acquire a rigorous grounding in the

fundamentals of professional literary analysis, criticism, and research.

MFA in Creative Writing

Butler's MFA in Creative Writing is a 36-hour studio program designed for students seeking to enhance their creative and professional proficiency in the literary arts. The program features 10 three-credit courses and six hours of formal thesis work with an advisor. We offer workshops in poetry, fiction, nonfiction, electives in screenwriting, teaching creative writing, alternative forms, graphic novel, young adult fiction, poetic craft, and literary editing and publishing. Students can also take upper-level courses in English, or in other departments, as part of their education.

The program features access to a combination of top-flight, full-time faculty and prominent visiting faculty, including the Booth Tarkington Writer-in-Residence. Through the Vivian S. Delbrook Visiting Writers Series, students attend readings and small question-and-answer sessions with nationally and internationally recognized writers. The program also operates a literary magazine, *Booth* (booth.butler.edu), which offers students a variety of editorial and teaching mentorship opportunities, and sponsors a rich variety of community programs through the Efroymsen Center for Creative Writing.

MFA Courses

EN501, Graduate Seminar Special Topic: (G)(3) Fall and spring.

EN502, Graduate Prose Workshop: Graduate-level creative writing workshop in one of the following prose forms: fiction (novel, short story, or mixed); creative nonfiction; children's/young adult; screenwriting; graphic novel; or open genre. Open to MFA in Creative Writing students only (G)(3) Fall and spring.

EN503, Graduate Poetry Workshop: Graduate-level creative writing workshop in poetry. Open to MFA in Creative Writing students only. (G)(3) Fall and spring.

EN504, Project Workshop: Required of all MFA students pre-thesis. Thesis preparation and long-form study in one or more of the following genres: fiction, creative nonfiction, poetry, screenwriting, young adult, digital forms, and/or other literary genres. (G)(3) Fall and spring.

EN505, Literary Editing and Publishing: This course introduces students to the production of literary publications. Through lectures and discussions, we will examine everything from the evaluation of manuscripts to the marketing of a

finished product. We will also survey the evolving field of literary magazines and related ethical concerns. (G)(3) Annually, term varies.

EN506, Reading for Writers: Required of all MFA students. Reading practice and pedagogy in one or more of the following genres: fiction, creative nonfiction, poetry, screenwriting, young adult, digital forms, or other literary genres. (G)(3) Occasionally.

EN595, Independent Study. (G)(1) Fall and spring.

EN596, Independent Study. (G)(2) Fall and spring.

EN710, Research Problems. (G)(3) Fall and spring.

EN711, Thesis. (G)(3) Fall and spring.

Gender, Women, and Sexuality Studies

Administration

Irune del Río Gabiola, PhD, Program Director
Assistant Professor
Brooke Beloso, PhD

Program Website

www.butler.edu/gender-studies

Gender, Women, and Sexuality Studies provides an interdisciplinary setting in which students can examine gender—the social meaning of the distinction between the sexes—and sexuality—sexual identities, discourses, and institutions—as they intersect with race, class, ethnicity, nationality, and transnational movements.

In required courses, students analyze gender and sexuality from a variety of academic fields, and they explore the theoretical and historical basis of such study. Upper-division electives are chosen from at least three disciplines, allowing students to pursue their inquiries in more depth without narrowing their focus to a single field. Internships provide students with the option to apply theoretical knowledge to work and/or community-based learning opportunities.

Gender, Women, and Sexuality Studies is an excellent complement to all majors at Butler University, regardless of whether the student plans to attend graduate school or seek employment immediately after graduation. For students interested in graduate school, Gender, Women, and Sexuality Studies provides a strong foundation in women's and gender studies, as well as for advanced work in any academic discipline that lends itself to gender

critique. For students interested in entering the workforce, Gender, Women, and Sexuality Studies students are well equipped to work in a diverse and multicultural world, an attribute today's employers are seeking in a variety of professions and occupations, including public administration, social services, business, the arts, law, medicine, social work, anthropology, journalism, media, and criminology.

Degree Programs

- Major in Gender, Women, and Sexuality Studies (BA)
- Minor in Gender, Women, and Sexuality Studies

Requirements for the Major

GWS100, Perspectives in Gender, Women, and Sexuality Studies

Category 1: "Inquiry into Identity." Select one of the following:

- GWS201, Intersections of Identity: Gender, Race, Class, and Sexuality
- TI242-PL, Marginalized in America: Gender at the Intersection of Race and Class
- HST342, Working Women in the Modern City

Category 2: "Activism for Social Change."

Select one of the following:

- GWS202, Resistance for Social Change
- CCM482, Voices of Dissent and Social Change
- PO375, The Role of Protest in U.S. Politics

Transnational Requirement. Select two of the following:

- GWS303, Special Topics: sex&thecity.org
- AN315, Gender and Colonialism
- AN320, Gender and Sexuality in Globalization
- AN322, Sex, Gender, and Sexuality in Japan
- EN393, Special Topics: Gender, Language, and Globalization
- HST366, Gender, Sex, and Sexuality in Latin America
- HST367, Geographies of Desire: Space, Gender, Sexuality
- JR418, Gender and Media: Global Views
- PO351, African Gender and Sexuality Politics
- RL377, Religion, Gender, and the Goddess in Asia

Twelve credit hours of GWSS-approved electives with no more than six credit hours in any one discipline.

Requirements for the Minor

GWS100, Perspectives in Gender, Women, and Sexuality Studies

Category 1: "Inquiry into Identity." Select one of the following:

- GWS201, Intersections of Identity: Gender, Race, Class, and Sexuality
- TI242-PL, Marginalized in America: Gender at the Intersection of Race and Class
- HST342, Working Women in the Modern City

Category 2: "Activism for Social Change."

Select one of the following:

- GWS202, Resistance for Social Change
- CCM482, Voices of Dissent and Social Change
- PO375, The Role of Protest in U.S. Politics

GWS304, Feminist and Queer Theory

Transnational Requirement. Select one of the following:

- GWS303, Special Topics: sex&thecity.org
- AN315, Gender and Colonialism
- AN320, Gender and Sexuality in Globalization
- AN322, Sex, Gender, and Sexuality in Japan
- EN393, Special Topics: Gender, Language, and Globalization
- HST366, Gender, Sex, and Sexuality in Latin America
- HST367, Geographies of Desire: Space, Gender, Sexuality
- JR418, Gender and Media: Global Views
- PO351, African Gender and Sexuality Politics
- RL377, Religion, Gender, and the Goddess in Asia

Six credit hours of GWSS-approved electives.

Electives

A separate list of GWSS-approved electives will be published each semester, but examples of courses students have taken for GWSS credit in the past include the following:

- GWS300/PL348, Philosophy of Feminism
- GWS303, Special Topics: Love for Sale: Intimate Labor and the Commodification of Love
- GWS303, Special Topics: Ransom Notes and Radical Chic
- GWS303, Special Topics: Written Out of Wedlock
- GWS303, Special Topics: Health Disparities
- GWS303, Special Topics: 50 Shades of Sex
- AN342, Science, Technology, and Society

- AN380/HST305, Special Topics: Witchcraft, Shamanism, and the Paranormal
- AN380, Special Topics: From Peasant to Princess
- AN380, Special Topics: Sex Education across Cultures
- ART315, Postmodernism in the Arts
- ART382, Special Topics: Gender in Art
- CCM330, Representations of Race and Difference
- CCM354, Gender and Communication
- CCM376, Film, Culture, and Criticism
- CCM390, Special Topics: Virginitly and Sexual Politics of Film
- CCM420, Queering Film
- CCM468, Women and Rock
- CCM470, Sports, Media, and Culture
- CCM481, Technologies of the Body
- CCM482, Voices of Dissent and Social Change
- EN341, Topics: American Gothic
- EN393, Special Topics: Fin-de-Siècle Literature
- EN393, Special Topics: Gender, Language, and Globalization
- EN394, Special Topics: Gender and Migration in Transnational Cinema
- EN493, Special Topics: Sex, Suffrage, and Empire: Modernism and the New Woman
- HST212/TI235-HST, American Visions: Dialogues on Diversity
- HST338, The Era of Jim and Jane Crow
- HST341, U.S. Women's History
- HST342, Topics in Women's History: Working Women and Modern City
- JR418 Gender and Media: Global Views
- PL375, Topics: Feminist Jurisprudence
- PO380, Special Topics: Gender and Generation in War and Peace
- PO386, Black Political Thought
- PS305, Psychology of Gender
- PS333, Human Sexuality
- RX644, Women's Health Issues
- SO317, Gender and Society
- SO326, Gender, Race, and Crime
- SP490, Sports, Gender, National Identities
- SW200-SO, Understanding Society: Gender from a Sociological Perspective
- SW240-PO, Gender and Generations: War and Peace
- TI231-HST, Mad Women in America
- TI234-HST, Reel America: Film and the American Experience
- TI242-PL, Marginalized in America
- TI255-PO, Politics of Alice Walker

Core Courses Offered by Gender, Women, and Sexuality Studies

SW223-GWS, Resistance for Social Change: Civil rights, social movements, resistance, and liberation are the subjects of this course. We will examine the ways in which such minoritized populations as people of color, women, the LGBT-identified, and the poor have demanded rights and responsibilities. (U)(3) Fall and spring.

SW232-GWS, Intersections of Identity: This course will explore the social construction of difference and inequality with particular focus on gender, race, sexuality, and class. Students will interrogate dominant ideologies and develop an understanding of how systems of inequality impact everyone's daily lives. (U)(3) Fall and spring.

Gender, Women, and Sexuality Studies Courses

GWS100, Perspectives in Gender, Women, and Sexuality Studies: Designed to introduce students to the wide range of topics addressed in gender, women's, and sexuality studies. The course is largely made up of guest lectures given by faculty from a variety of disciplines across campus. Open to non-minors. Pass-fail credit. (U)(1)

GWS201, Intersections of Identity: This course will explore the social construction of difference and inequality with particular focus on gender, race, sexuality, and class. Students will interrogate dominant ideologies and develop an understanding of how systems of inequality impact everyone's daily lives. (U)(3)

GWS202, Resistance for Social Change: This course will examine social justice movements both within and beyond the United States. Taking an interdisciplinary, intersectional approach, students will investigate how marginalized groups, such as people of color, gays, women, and workers, have demanded greater rights and responsibilities. (U)(3) Fall and spring.

GWS300, Philosophy of Feminism: Introduces students to the philosophical method of thinking out issues that confront women in contemporary American society and which challenge all of us. The course's primary focus is the study of feminist responses to issues such as gender socialization, reproductive rights, affirmative action, pornography, beauty, eco-feminism, alternative families, and others. (U)(3) Occasionally.

GWS302, Topics in Gender Studies: Selected topics of significance in gender studies. (U)(2) Annually, term varies.

GWS303, Topics in Gender Studies: Selected topics of significance in gender studies. (U)(3) Annually, term varies.

GWS304, Feminist and Queer Studies: This course investigates the central concepts of critical theory through the exploration of the overlapping terrains of women's and gender studies, feminist and queer theory. Prerequisites: GWS102 and GWS202 or junior/senior status. (U)(3) Annually, term varies.

GWS398, Internship/Practicum in Gender Studies: Designed to give students the opportunity to apply theoretical knowledge to everyday experience through a volunteer position, internship, or employment in a setting where they can explore gender issues. The student will work in conjunction with a faculty member; gender studies director must approve the project. Prerequisites: GS100, GS300, or GS301; junior or senior standing; and completion of six hours of electives. (U)(1) Annually, term varies.

GWS399, Internship/Practicum in Gender Studies: Designed to give students the opportunity to apply theoretical knowledge to everyday experience through a volunteer position, internship, or employment in a setting where they can explore gender issues. The student will work in conjunction with a faculty member; the project must be approved by the gender studies director. Prerequisites: GS100, GS300, or GS301; junior or senior standing; and completion of six hours of electives. (U)(2) Annually, term varies.

GWS400, Internship/Practicum in Gender Studies: Designed to give students the opportunity to apply theoretical knowledge to everyday experience through a volunteer position, internship, or employment in a setting where they can explore gender issues. The student will work in conjunction with a faculty member; the project must be approved by the gender studies director. Prerequisites: GS100, GS300, or GS301; junior or senior standing; and completion of six hours of electives. (U)(3) Annually, term varies.

GWS401, Independent Study: Offers the qualified student of gender studies the opportunity to pursue a topic of individual interest. Open only to seniors, by permission of the instructor. (U)(1) Annually, term varies.

GWS402, Independent Study: Offers the qualified student of gender studies the opportunity to pursue a topic of individual interest. Open only to seniors, by permission of the instructor. (U)(2) Annually, term varies.

GWS403, Independent Study: Offers the qualified student of gender studies the opportunity to pursue a topic of individual interest. Open only to seniors, by permission of instructor. (U)(3) Annually, term varies.

GWS405, GWSS Senior Capstone: All GWSS majors must complete the senior capstone course taught or supervised by a GWSS faculty member. The course is designed to enable upper-level students, and especially GWSS majors and minors, to integrate the knowledge and experience gained in GWSS courses, bridge academic scholarship and praxis in our community, and use that knowledge and experience as a springboard for future work. Topics will vary. Prerequisite: Junior standing or permission of instructor. (U)(3) Occasionally.

GWS490, Internship. (U)(3)

History and Anthropology— Including Geography

Administration

Elise Edwards, PhD, Department Chair

Professors

Bruce Bigelow, PhD; Paul Hanson, PhD Thomas Paradis, PhD

Associate Professors

John Cornell, PhD; Vivian Deno, PhD; Elise Edwards, PhD; Scott Swanson, PhD; Sholeh Shahrokhi, PhD; Ageeth Sluis, PhD; Scott Swanson, PhD

Assistant Professors

Antwain Hunter, PhD; Zachary Scarlett, PhD

Instructor

Elizabeth Pfeiffer, PhD

Department Website

www.butler.edu/history-anthropology

The disciplines of history, anthropology, and geography share the same home because they address the same fundamental questions about life from different perspectives, the interplay among which enlarges our students' minds and lives. Butler is singular among American universities in knitting these three disciplines into a working organism. Prospective majors in both history and anthropology take a first-year course together, introducing them to each other and to the disciplines in their departments, thus offering all the advantages of self-standing disciplines and interdisciplinary approaches.

Members of the department offer expertise in wide-ranging areas of the world: the United States, Latin America, East Asia, the Middle East, and Europe. Within these areas we offer courses on the fundamental conditions that shape human life past and present: citizenship, politics, peace and war, gender, race, class, sexuality, language, economics, religion, and thought. The department offers a small student-faculty ratio, individual attention, and abundant opportunities for undergraduate research. Most of our students also study away from Butler, either abroad or in Washington, DC, offering them a taste of this increasingly global world we inhabit.

Why Study Anthropology?

Anthropology explores the human condition, appreciating humans and human practices holistically. The primary focus of our program is cultural anthropology, which studies the ways that humans create meaning, forge alliances, assert differences, reinforce social and political hierarchies, and expose vectors of inequality. Students are trained to read critically and understand the complexities of ethnography—the research method and product that defines the discipline. They also have the opportunity to produce their own original ethnographic work in course research assignments as well as larger honors thesis projects, which may be the outgrowth of study abroad, field school, or internship experiences. The ability to analyze different cultures, figure out how they work, and step into them—applying the characteristic methods and theories of our discipline—readily prepares students for a variety of careers: health care, education, NGOs, and, increasingly, various forms of business. Anthropology majors are also well prepared for advanced study in anthropology and archaeology, public health and medicine, social and nonprofit work, law, and business.

Why Study History?

History explores the human condition throughout the world from earliest time to the present moment. It investigates what happened in the world and how it was understood in order to comprehend why people think what they think and do what they do. There is no question or problem of human life foreign to history. One age-old purpose of history is to ready people as citizens to care for the common good and public life. Another, equally venerable, is moral: history trained people to consider carefully the possibilities of good life or better life together. Not so long ago historians focused most of their attention on the politics, wars, and thought of

elites. In recent years, history has broadened its scope to encompass the lives of all people. History as a discipline characteristically teaches its students to read and analyze texts and artifacts of every sort. Its search for meaning requires of its students creative intelligence to develop from their findings hypotheses and theories that seek an ever better, often changing, understanding of the patterns of human life. History is perforce a conversation, since it takes many eyes, ears, and minds to fathom the complexities of life on this planet, so historians offer their own thoughts and listen carefully to the thoughts of others to refine both. It is uncommonly fun. Students of history take these skills and habits of thought in every imaginable direction, to graduate and professional study, often to teaching, law, government, civil service, and business, frequently to vocations that care for people, and finally to building communities and raising children.

Why Study Geography?

Cultural geography brings together history, culture, and spatial patterning, and reinforces the message of both history and anthropology in a common department. Geography at Butler starts by studying Indianapolis, then moves outward to Indiana, the United States, and the world. These courses are generally valuable but particularly so to students preparing to teach social studies in secondary school.

Why Study Anthropology and History at Butler?

We are one of just a few joint undergraduate history and anthropology departments in the country, and we're the only one that approaches the disciplines in an integrated way. So you can be a history major, an anthropology major, or both. While ultimately you will decide your focus and course of study, your basic grounding in both of these closely related disciplines will deepen your understanding of how we work to understand humans and their worlds and make you a better historian or anthropologist.

Both programs work together to train students to read with acuity, attend carefully to detail, write clearly, listen carefully, say well what they have to say, think both imaginatively and analytically, and work fruitfully with other people. We ask students to pose their own questions, seek answers to their questions in archival research or ethnographic investigation, develop their own ideas and opinions and address the ideas and opinions of other people throughout time and across the world, and grapple with the fundamental moral questions that life poses for

us. We seek to give students practice in thinking for themselves and good company in which to do so.

Our small class size and student-to-faculty ratio guarantee one-on-one attention, mentoring, and guidance to all majors and minors. We know our students well. Because our students graduate with well-developed reading, writing, and critical-thinking skills, there's no limit to what they can do career-wise. Our graduates have become teachers and social workers, lawyers and doctors, business owners and consultants, museum curators and Teach for America alums, and even scientists and public health officials.

During the past few years, students in the department have undertaken internships in circumstances as varied as the Indiana State House, the Indiana State Archives, the Indiana Historical Society, the U.S. Attorney General's Office, the Center for American Progress, archaeological fieldsites in Kenya, the Indianapolis Museum of Art, the Legal Aid Society of Indianapolis, the Kinsey Institute, a Tibetan refugee camp in India, Father and Families Inc. of Indianapolis, the Monroe County Historical Society, a women's domestic violence organization in Buenos Aires, Earth House in Indianapolis, and humanitarian organizations in Palestine.

Anthropology Student Learning Objectives

The anthropology program seeks to teach students to think for themselves, appreciate human and cultural differences, and master the basic tools necessary for understanding those differences. They learn to employ the ethnographic method, understand issues from a diversity of viewpoints, and ready themselves for responsible citizenship. More specifically, we seek to teach students the characteristic methods of anthropology and the basic range of anthropological theories, to analyze evidence and develop arguments, incorporate the views of other people into their projects, understand issues in all their complexity rather than oversimplify them, and share their ideas and research effectively.

History Student Learning Objectives

The history program seeks to teach students to think for themselves independently and critically, master the history of one part of the world, apply the past to understand the present, appreciate those who are different from themselves, appreciate academic and civil discourse, and ready themselves for responsible

citizenship. More specifically, we seek to teach students the characteristic methods of history and the basic range of historical theories, to analyze evidence and develop arguments, conduct historical research, incorporate the views of other people into their projects, look at problems from a variety of perspectives, and share their ideas and research in proper form.

Degree Programs

- Major in Anthropology (BA)
- Major in History (BA)
- Master of Arts in History (MA)
- Combined Major in Anthropology and Psychology (BA) (see Combined Majors)
- Combined Major in History and Anthropology (BA) (see Combined Majors)
- Combined Major in History and Political Science (BA) (see Combined Majors)
- Minor in Anthropology
- Minor in Geography
- Minor in History

Requirements for the Anthropology Major

- 36 credits
- AN101, SW215, and GE109
- 3 hours in a subfield of anthropology (200–400 level)
- 3 hours of methodology (AN350, AN354, AN356, or course approved by advisor)
- 3 hours of theory (AN390)
- 12 hours of elective courses
- 3 hours capstone: AN460 or other advisor-approved course or honors thesis
- 3 hours internship, field school, or advisor-approved elective

All students are also encouraged to participate in recommended anthropological field schools during their program at Butler.

Requirements for the Anthropology Minor

The minor in anthropology consists of 18 hours: SW215; AN101, GE109, or 200-level anthropology course; and 12 hours of electives at the 300 level or above.

Core Courses Offered by Anthropology

SW210-AN, Sex, Gender, and Sexuality in Japan: This course explores the socio-historical constructions of sex, gender, and sexuality in modern Japan from the Meiji Restoration (1868) to the present. Students will study the roles of various agents, including the state, medical science, and the media, in the production of

sexual knowledge and the shaping of gendered practices. (U)(3)

SW215-AN, Being Human: Anthropological Approaches to Life and Meaning: Cultural anthropology is a discipline focused on how humans create meaning, forge alliances, and assert differences. This course allows students to explore conceptual, theoretical, methodological, and ethical issues central to the anthropological study of what it means to be human and make meaning in the world. (U)(3) Fall and spring.

Anthropology Courses

AN101, First Year Seminar: This course will introduce students to basic theories and methods in the disciplines of anthropology and history through the exploration of past and present cultural encounters and exchanges, and the diverse responses they engendered. Topics will range across time and space and focus on exploration, trade, colonialism, imperialism, and current cross-cultural interactions. (U)(3) Fall.

AN280, Sub-Fields in Anthropology: Introductory courses in the various sub-fields of anthropology such as biological anthropology, archaeology, primate behavior, language, and culture are offered on an occasional basis. This may be repeated for credit if subject matter is different. (U)(3) Annually, term varies.

AN302, The Body and Society: This course explores symbolism, ideologies, and treatments of the body cross-culturally. Topics considered include imageries of the human body, ideas about bodily aesthetics and bodily health, physical treatments of the body, the relationship of body ideologies and identity, and the body and power dynamics. (U/G)(3) Occasionally.

AN304, Medical Anthropology: An introduction to the field of medical anthropology, which explores the links between culture, society, disease, and illness. Topics include discussion of biomedical, epidemiological, and other models of disease; knowledge and practice of healers cross-culturally; the relationship between religion and healing; and occupational health issues. (U/G)(3) Occasionally.

AN311, Anthropology of Difference: This course is about exclusions and inclusions. All around us, there are walls and fences erected to keep people out and hold “others” in. Some partitions are concrete—harsh and visible; the rest remain fluid and negotiable. This is a course on power and the social life of contemporary humans. (U)(3) Occasionally.

AN312, Political Anthropology: Utilizes the comparative perspective to study authority, organization, and power. Topics include the ways in which authority is acquired and accepted as legitimate, issues of comparative political systems, local-level politics, the connections between local and wider political systems, and the cultural and symbolic aspects of power and legitimacy. Subject matter includes political communities in various cultural contexts. (U/G)(3) Occasionally.

AN313, Nation-States and Nationalisms: This course looks at nation-making projects and nationalist movements in a variety of historical and geographical contexts. Students study and then work to apply theories of nationalism to a range of case studies from Asia, the Middle East, Latin America, and Europe. (U/G)(3) Occasionally.

AN315, Gender and Colonialism: This course will explore conflicts between the moral claims of liberty, equality, culture, and gendered discourse in the face of colonial legacies and the global politics of the contemporary. It examines gendered construction of the “other” from the 19th century to the contemporary rhetorics of liberation. (U/G)(3) Occasionally.

AN320, Gender and Sexuality in Globalization: This course examines how gender is culturally constructed; the relationships between power, sexuality, and social roles; and the key theoretical debates on gender in anthropology. (U/G)(3) Occasionally.

AN322, Sex, Gender, and Sexuality in Modern Japan: This course explores the socio-historical constructions of sex, gender, and sexuality in modern Japan from the Meiji Restoration (1868) to the present. Students will study the roles of various agents, including the state, medical science, and the media, in the production of sexual knowledge and the shaping of gendered practices. (U/G)(3) Occasionally.

AN326, Youth Conflict Global Cinema: Will explore teenage life across different cultural boundaries and social realities that inform global inter-connections of our time. Examines the cinematic image of youth in the United States/world by exploring everyday life practices and problems that shape the desires of youth. (U)(3) Occasionally.

AN328, Popular Culture: This course examines the role and function of popular culture in different social and cultural settings throughout the world. Students will compare the impact of popular culture in different regions, examining

the cultural importance of such media as films, television, sporting events, music, and the internet. (U/G)(3) Occasionally.

AN329, Japanese Popular Culture: This course will examine Japanese popular culture, including comics (manga), fashion magazines, feature films, anime, music, sports, and even children's games, to understand the social pervasiveness and cultural force of the mediums. While focusing on Japan, the course will introduce students to critical theoretical perspectives about popular culture that can be applied more broadly. (U/G)(3) Occasionally.

AN340, Ethnographic Arts: This course examines the cultural and social significance of art in non-Western contexts, paying particular attention to expressive forms found in Africa, the Americas, and the Pacific. Relevant media include sculpture and masking, architecture, body ornamentation, dance, and music. (U/G)(3) Occasionally.

AN342, Science, Technology, and Society: This course explores the cultural aspects of scientific knowledge and its effects, as well as the socio-cultural consequences of scientific and technological innovation. Students will examine issues including the power of scientific "truth" claims, the social dynamics of laboratory settings, and science's effect on what it means to be human. (U/G)(3) Occasionally.

AN345, Conflict Resolution Through Arts: Introducing the notion of conflict, we will consider a diverse use/reach of the concept by studying a range of contemporary global situations, mapped as distinct conflict zones. Later readings are designed to introduce students to creative and imaginative approaches to conflict resolution. (U/G)(3) Occasionally.

AN346, The Anthropology of Sport: This course will look at sport as a topic of anthropological study. We will explore (1) the cultural and political values produced and reaffirmed through sports training and competition, (2) the ritualistic and symbolic aspects of sporting events and spectacles, and (3) the messages transmitted through media-produced images of sport. (U/G)(3) Occasionally.

AN349, African Musics: This course provides an ethnomusicological examination of traditional and contemporary African musics. Topics include the history of the musics of Africa and the Diaspora, the analysis of music as sound and behavior, and the role of music in daily life. The course includes hands-on drumming; non-musicians are welcome. (U/G)(3) Occasionally.

AN350, Anthropological Methods: An introduction to the research process in cultural anthropology, with an emphasis on qualitative methods. Students also are prepared to conduct research, including fieldwork, to evaluate and present research, and to critically evaluate the research of others. (U/G)(3) Occasionally.

AN352, Ethnography: Ethnography is most generally a qualitative research approach focused on providing detailed, in-depth description. We will approach ethnography from two angles in this course: (1) as a topic of intellectual analysis and critique, and (2) as a methodology that we will employ in a research project at a specific field site. (U/G)(3) Occasionally.

AN366, East Asia Through Ethnography: An introduction to selected topics in the society and cultures of East Asia (China, Japan, and Korea), Southeast Asia (Indonesia, Malaysia, Thailand, and the Philippines), and South Asia (the Indian sub-continent). Topics include post-colonialism, transnational processes, family and kinship, world and local religious traditions and ritual practices, economic development, and gender issues. (U/G)(3) Occasionally.

AN368, Coming of Age in the Middle East: This course explores life in an enigmatic geopolitical region called the Middle East. Issues of religiosity, Islam, gender, sexuality, urbanization of life, revolution, war, and global politics are considered in the context of local diversity and global political economy. (U/G)(3) Occasionally.

AN370, Peoples and Cultures of Europe: A survey of the peoples, societies, and cultures of Western and Eastern Europe. In light of globalization and movements unifying Europe such as the European Union, the course will pay special attention to demographic features, cultural practices, and major social institutions. (U/G)(3) Occasionally.

AN380, Selected Topics in Anthropology: An in-depth analysis of the theory, methodology, and subject matter in an area not provided for in the current offerings of the department. (U/G)(3) Occasionally.

AN390, Development of Anthropological Thought: This course inquires into the emergence and development of anthropological thought, theories, methods, and generalizations in the context of Western social and cultural milieu. The particular emphasis is on the changing shape of the academic discipline of anthropology, from the late 19th century to the present. Prerequisites: SW215-AN and junior standing. (U/G)(3) Occasionally.

AN460, Culture and History: This course explores anthropologists' use of historical methods, and historians' employment of cultural analysis. Students will examine the history of the rapprochement between the disciplines, the fields' most influential interlocutors, significant debates, and some of the scholarly work emerging from this disciplinary pairing. (U/G)(3) Occasionally.

AN481, Independent Study: An opportunity for qualified students to pursue a topic of individual interest. With permission of the director. (U/G)(1) Occasionally.

AN482, Independent Study: An opportunity for qualified students to pursue a topic of individual interest. With permission of the director. (U/G)(2) Occasionally.

AN483, Independent Study: An opportunity for qualified students to pursue a topic of individual interest. With permission of the director. (U/G)(3) Occasionally.

AN484, Internship: A program offering the superior student the opportunity to participate in a closely supervised work experience in a setting pertinent to the major area of study. Majors are strongly encouraged to engage in the internship experience. Prerequisites: SW215-AN and permission of the director. (U)(3) Occasionally.

AN485, Internship: A program offering the superior student the opportunity to participate in a closely supervised work experience in a setting pertinent to the major area of study. Majors are strongly encouraged to engage in the internship experience. Prerequisites: SW215-AN and permission of the director. (U)(6) Occasionally.

AN486, Seminar in Anthropology: Intensive reading with problems for investigation in some special field. Prerequisites: SW215-AN and permission of the director. (U)(3) Occasionally.

AN499, Honors Thesis. (U)(3) Occasionally.

Requirements for the Geography Minor

A minor in geography consists of 18 hours, with at least 12 hours at the upper-division level.

Geography Courses

SW205-GE, Cultural Geography: Regions of the World: Cultural geography introduces students to the immense cultural diversity of the world. Students will explore diversity of regions with regard to environmental influence,

historical origin and diffusion, and contemporary political, cultural, and ecological problems. The course concludes by analyzing contemporary globalization, especially with regard to cultural identity. (U)(3)

GE305, Topics in Geography: Regional and thematic study of contemporary issues in geography not treated in traditional courses. (U/G)(3) Occasionally.

GE310, Historical Geography of United States: The creation and persistence of regional variations of culture in the United States from the colonial era to the present. (U/G)(3) Occasionally.

GE400, Independent Study. (U)(1) Occasionally.

GE401, Independent Study. (U)(2) Occasionally.

GE402, Independent Study. (U)(3) Occasionally.

Requirements for the History Major

- 33 credits. Note: geography courses automatically count toward the history major. Specific anthropology and other University courses may be applied to the history major when approved by the department chair.
- HST101
- 6 additional hours of lower-division (100–200-level) courses, one of which must be focused on Asia, Latin America, Middle East/Africa, or World/Transnational History
- HST301, Historiography, typically offered once a year in the fall semester
- HST302, Junior Research Project, typically offered in the spring
- HST401, Seminar in History
- Additional 15 hours of elective courses at the 300 level or above. Students must take courses from at least three of the following areas: Asia, Europe, Latin America, United States, Africa and the Middle East, or World/Transnational History.

Requirements for the History Minor

A minor in history consists of 18 hours, with at least 12 hours at the upper-division level.

Requirements for the Master of Arts in History

Students in the master of arts in history program may select either a 30-hour program of courses with a master's thesis or a 36-hour program

of courses without a thesis. Those in the 36-hour track must complete at least two HST401 seminars.

Core Courses Offered by History

PCA267-HST, Experiencing the City:

Indianapolis through Public Art, Architecture, and Performance: This course uses public art, architecture, and performance in Indianapolis to study the politics and aesthetics inherent in “staging” cities. It aims to enhance understanding of how art informs both the history of how urban environments have been imagined, planned, and built as well as how we experience these spaces today. (U)(3) Annually, term varies.

SW265-HST, Revolutionary Cultures in

Latin America: Through specific case studies, this course provides the students with the opportunity to study movements in Latin America as they were shaped through the disciplines of anthropology and history. In analyzing revolutionary cultures, students examine relationships between social science and nation building, historiography and national identity, and knowledge and power. (U)(3) Occasionally.

TI229-HST, Themes in World History: This course emphasizes the increasing connectivity of regional cultures, especially from the rise of the Silk Road civilizations 2000 years ago to the present. Specific topics include the diffusion of cultural innovations, immigration, long-distance trade, the spread of diseases, and empire-building. (U)(3) Fall.

TI230-HST, Imagined World: This course will examine, through an array of literary, historical, and philosophical texts, some of the ways in which people have tried to understand their own world and their own lives through the creation of “imagined worlds.” Some of those worlds are exterior—a map of the world created by a 16th-century Venetian monk living on an island in the harbor of Venice, listening to the tales of travelers who visit him; while some are interior—a fictional character trying to come to terms with the death of his wife, and his own impending mortality, by revisiting (reinventing?) the site of his childhood summer vacations. Having explored, discussed, and written about the imagined worlds of others, toward semester’s end class participants will have the opportunity to create their own imagined world. (U)(3) Occasionally.

TI231-HST, Mad Women in America: Mother. Daughter. Wife. For generations those titles were assumed to contain the hopes and dreams

of all women, and any woman who denied this was “mad”—angry or crazy. In this course, we will examine the lives and experiences of actual and fictional women designated as “mad” and consider how they have been represented in the arts and in history texts. We will start with readings of cross-cultural examples of mad women Lillith, Medea, and La Llorona, and then narrow our focus to consider such women in U.S. history and culture. Course sources include music, film, art, poetry, and traditional history accounts. (U)(3) Occasionally.

TI233-HST, Hidden History: Gender/Sex in

Latin Am: “A “traitor” sleeping with the enemy. Cross-dressing nuns. Slave mistress. The seventh muse. A bisexual painter. The “(Night)Mare” of Argentina. Guerrilla woman. Nobel Prize-winning Indian. The history of Latin America abounds with examples of illustrious and controversial women, yet the general perception of Latin America is of lands populated by machos. The history of the area—as elsewhere—usually concentrates on the actions of men without examining why, and forgets the feats of women as well as the importance of gender and sexuality, which has remained a “hidden history.” In this course we will uncover that hidden history by examining changing ideas of both femininity and masculinity in Latin America from the start of colonialism until recent times. (U)(3) Occasionally.

TI234-HST, Reel America—Film and the

American Experience, 1890–1965: Famed film director Sydney Pollack said of film, “It’s the 20th century’s real art form.” This has been particularly true in the United States, where film has been an important means of transmitting definitions about American values and identity. This course examines the role of film in depicting the American experience in the 20th century and does so with a particular emphasis upon the interpretation of film within a community of other texts drawn from the period. Occasionally.

TI235-HST, American Visions—American Visions? American Dreams? American

Nightmares?: What does it mean to be an American? Are there connective cultural/historical threads across time that help to form a national identity? These and other questions are at the heart of a raucous, multifaceted exploration of American history, identity, and culture. (U)(3) Fall and spring.

TI237-HST, Themes in European History:

This course will survey formative periods in European societies from the 12th century to the present. Emphasis throughout will be on the evolution of the nation-state, the emergence of

industrial, capitalist, and socialist economies, and transformations in thought. (U)(3) Occasionally.

TI238-HST, Major Themes in Asian History: Through analyzing sacred, historical, and literary texts, this course offers a survey of major themes in Asian history from the ancient times to present, with a focus on the interactions among cultures and states in modern period. The themes explored can vary from semester to semester. (U)(3) Occasionally.

TI239-HST, Exploring Latin America: This course presents a different vision of America, that is, the America situated south of the border from the United States. Using an array of primary sources (including literary texts and visual materials), it introduces the students to the history of Latin America since its independence. (U)(3) Annually, term varies.

History Courses

HST101, First Year Seminar: This course will introduce students to basic theories and methods in the disciplines of anthropology and history through the exploration of past and present cultural encounters and exchanges and the diverse responses they engendered. Topics will range across time and space and focus on exploration, trade, colonialism, imperialism, and current cross-cultural interactions. (U)(3) Fall.

HST111, Introductory Seminar: Exploration of selected topics in history. (U)(3) Occasionally.

HST205, Questions in History: This course examines questions in history with a focus on issues of social, political, scientific, and/ or economic concern. Topics to vary by instructor. May be repeated once for credit towards the major. (U)(3) Annually, term varies.

HST211, Major Themes in European History: This course will survey formative periods in European societies from the late Middle Ages to the present. Emphasis throughout will be on the development of capitalist/industrialist economies, state-building and nationalism, and major transformations in European thought. (U)(3) Occasionally.

HST212, American Visions: America's past from the perspective of important, representative individuals and groups, showing changing perceptions of the American experience. Developments in thought from Puritan times to the present. (U)(3) Fall and spring.

HST213, Exploring Latin America: This course presents a different vision of America, that is, the

America situated south of the border from the United States. Using an array of primary sources (including literary texts and visual materials), it introduces the students to the history of Latin America since its independence. (U)(3) Annually, term varies.

HST214, Major Themes in Asian History: A survey of major themes in South, Southeast, and East Asian history from ancient times to the present, with a focus on the modern period. It examines such processes as the formation of classical civilizations, rise and fall of empires, cultural encounters, transformations of societies, and such themes as imperialism, nationalism, and Communism. (U)(3) Occasionally.

HST215, Themes in World History: This course emphasizes the increasing connectivity of regional cultures, especially from the rise of the Silk Road civilizations 2000 years ago to the present. Specific topics include the diffusion of cultural innovations, immigration, long-distance trade, the spread of diseases, and empire-building. (U)(3)

HST301, Historical Method and Historiography: This course examines important methods and approaches to the study of the past and prepares students to undertake significant research projects. Prerequisite: Junior standing. Nondepartmental students only by permission of the department. (U/G)(3) Fall.

HST302, Junior Research Project: This course is a hands-on class with students identifying and undertaking a significant research project with community presentation at the end of the course. Common readings and assignments help to develop student skills. Prerequisite: HST301. (U)(3) Spring.

HST303, Intro to Public History: This course provides a hands-on introduction to public history, as a vocation and as a discipline. In this class we explore the origins of the field, consider the ethics of the practice of public history, and examine various approaches to the field through readings, exercises, guest lectures, and more. (U)(3) Occasionally.

HST305, Topics in History: Selected topics of significance in contemporary historical scholarship. First-year students admitted only by permission of the department. (U/G)(3) Fall and spring.

HST306, Topics in the History of Science: This class will explore the many connections between periods of geographical expansion and the expansion of scientific knowledge. While beginning with earlier examples of empire,

the readings will mainly focus on the Age of Exploration and the Scientific Revolution, and 19th-century imperialism and a second “revolution” in science. Topics will include the use of technology in empire building, the impact of cross-cultural contact on the expansion of knowledge, and the connections between applications of science and imperial politics. First-year students admitted only by permission of the department. (U/G)(3) Occasionally.

HST308, The Greek World: First-year students admitted only by permission of the department. (U)(3) Occasionally.

HST309, History of Rome: First-year students admitted only by permission of the department. (U)(3) Occasionally.

HST310, Sex, Gender, Love, Friendship in the Classical World: Examines classical Mediterranean culture from the inside out. Course focuses upon dimensions of private life and interplay between private and public worlds. Discussion/seminar format. First-year students admitted only by permission of the department. (U/G)(3) Occasionally.

HST311, Europe in the Middle Ages: A study of Western European history from the decline of the Roman empire until the beginning of the modern period. First-year students admitted only by permission of the department. (U/G)(3) Occasionally.

HST312, Medieval England: History of Great Britain from Alfred of Wessex to the accession of the Tudors in 1485. Social, political, and constitutional development of England, and comparable developments in Scotland and Ireland. First-year students admitted only by permission of the department. (U/G)(3) Occasionally.

HST313, Medieval France: France was the crown jewel of medieval civilization. This course will examine French life from its emergence out of Charlemagne’s empire until about 1500 and focus above all on the political, social, religious, and cultural aspects of medieval French life at its zenith during the 12th and 13th centuries. (U)(3) Occasionally.

HST314, Sex, Gender, Love, and Friendship in Medieval World: A continuation of HST310. Focuses upon dimensions of private life and interplay between private and public worlds in European society during the Middle Ages. Discussion/seminar format. First-year students admitted only by permission of the department. (U/G)(3) Occasionally.

HST315, Europe in the Renaissance 1300–1600: A study of politics, society, and culture in Renaissance Europe. First-year students admitted only by permission of the department. (U/G)(3) Occasionally.

HST316, Early Modern England: England in the Tudor/Stuart Era. First-year students admitted only by permission of the department. (U/G)(3) Occasionally.

HST317, Early Modern Europe: A general history of the major changes in Europe from 1500 to 1715. First-year students admitted only by permission of the department. (U/G)(3) Occasionally.

HST318, Individual and Society in Europe 1600–1850: Society and culture in modern Europe, focusing on the experience of common people in an era of rapid economic and political change. First-year students admitted only by permission of the department. (U/G)(3) Occasionally.

HST319, French Revolution and Napoleon: An intensive study of the political, social, and cultural currents in France during the revolutionary era. First-year students admitted only by permission of the department. (U/G)(3) Occasionally.

HST320, Enlightenment and Romanticism: Explores the history of two seminal social/intellectual movements of the modern era. Major figures include Voltaire, Rousseau, Mozart, Byron, Goethe, Beethoven, and J. S. Mill. Discussion/seminar format. First-year students admitted only by permission of the department. (U/G)(3) Occasionally.

HST321, 19th Century Europe: A study of European history from 1815 to 1914. First-year students admitted only by permission of the department. (U/G)(3) Occasionally.

HST322, 20th Century Europe: An examination of European politics and society from 1900 to the present. Topics include the outbreak of the Great War, the Russian Revolution, Nazism and Fascism, World War II, the Holocaust, the reconstruction of Europe, the Cold War, European integration, and Europe today. First-year students admitted only by permission of the department. (U/G)(3) Occasionally.

HST323, Modern France: Examines themes in the political, social, and cultural history of France from the defeat of Napoleon in 1815 to the presidency of Francois Mitterrand. First-year students admitted only by permission of the department. (U/G)(3) Occasionally.

HST324, Modern Germany: A survey of German culture, society, and the state from the Napoleonic Era to the founding of the post-war Germanies. First-year students admitted only by permission of the department. (U/G)(3) Occasionally.

HST325, Contemporary Germany—Division and Reunification: Examines German politics, culture, and society from the end of World War II to the present. Topics include denazification, the Cold War, the Berlin Wall, socialism and capitalism in the two Germanies, protest movements, and reunification. First-year students admitted only by permission of the department. (U/G)(3) Occasionally.

HST326, Modern to Postmodern: Explores major developments in modern thought and culture from the mid-19th century to the present. Topics include the social and intellectual history of Liberalism, Marxism, Darwinism, Modernism in art and music, Existentialism, Post-Modernism, and more. Discussion/seminar format. First-year students admitted only by permission of the department. (U/G)(3) Occasionally.

HST327, The History of Human Rights: This course examines the origins of human rights and their development in the Western world, human rights in non-European regions of the world, the antithesis or denial of human rights in the 20th century, and concludes with readings focused on contemporary human rights issues. (U/G)(3) Annually, term varies.

HST331, Colonial America: The first British empire in comparative global perspective. First-year students admitted only by permission of the department. (U/G)(3) Occasionally.

HST332, The American Revolution: An intensive study of the revolt from Great Britain, 1754–1789. First-year students admitted only by permission of the department. (U/G)(3) Occasionally.

HST333, The Early American Republic: The United States between 1789 and 1850. First-year students admitted only by permission of the department. (U/G)(3) Occasionally.

HST334, The Age of Jackson: The United States between 1815 and 1850; the transportation revolution, Romanticism, the second-party system, and the rise of nationalism. First-year students admitted only by permission of the department. (U/G)(3) Occasionally.

HST335, The Civil War: A study of the causes, conduct, and consequences of the American

Civil War. First-year students admitted only by permission of the department. (U/G)(3) Occasionally.

HST337, Emergence of Modern U.S.: The United States from the end of the Civil War to the start of the Great Depression. Examines the new urban industrial culture; shifting patterns of race, class, and gender relations; the relationship between science, technology, and government; and emerging tensions between religion and U.S. culture. First-year students admitted only by permission of the department. (U/G)(3) Occasionally.

HST338, The Era of Jim and Jane Crow: Explores the racial and gender logic of state-sanctioned segregation, Jim and Jane Crow, and the struggle that eventually overthrew the system. Multifocal in approach, the class examines Crow from both a raced and gendered perspective and draws on the diverse ethnic and racial history of the nation. First-year students admitted only by permission of the department. (U)(3) Occasionally.

HST339, Recent U.S. History: The United States from the Great Depression to the present, with an emphasis on contemporary cultural, social, and political issues. First-year students admitted only by permission of the department. (U/G)(3) Occasionally.

HST341, U.S. Women's History: This course examines the history of U.S. women through an exploration of the political, social, and cultural contribution of women to the nation. The course focuses on the experiences of U.S. women from a variety of vantage points: as workers, reformers, political activists, artists, and more. At the discretion of the instructor, the course either covers from the colonial period to the present or from 1848 to the present. First-year students admitted only by permission of the department. (U/G)(3) Occasionally.

HST342, Topics in Women's History: Topics vary by semester and by instructor. Each class will take as its central focus the experience of women either in particular geographic locales, historical time periods, or thematic concentrations. Class may be repeated for credit with a different topic. First-year students admitted only by permission of the department. (U/G)(3) Occasionally.

HST343, Race and Ethnicity in the U.S.: Examines the histories of race and ethnicity in the United States and the ways in which racial and ethnic identities have been deployed as tools of marginalization, assimilation, and group

identity. Class explores race and ethnicity as legal, medical, historical, and gendered concepts and lived experiences. First-year students admitted only by permission of the department. (U/G)(3) Occasionally.

HST345, History of the American Midwest:

Emergence of the Midwest from the old Northwest Territory of the early American republic through the Civil War and the 20th century; emphasis on the development of a distinctive regional culture and interaction of various religious, ethnic, and racial groups. (U)(3) Occasionally.

HST350, History of Children and Youth:

This course examines the experience of children in history. Topics include changing conceptions of childhood, social/historical settings, parenting practices, gender roles, schooling, and the emergence of youth culture. Readings feature the history of children in America. Writing includes student autobiography and projects on contemporary children/youth. First-year students admitted only by permission of the department. (U/G)(3) Occasionally.

HST351, American Constitutional History:

A study of the origins and development of Constitutional concepts that have served as the basis for the growth of the federal government. Recent trends are emphasized. First-year students admitted only by permission of the department. (U/G)(3) Occasionally.

HST353, The American Empire since 1945:

American foreign policy and imperial ambitions since 1945. (U/G)(3) Fall and spring.

HST360, Modern Mexico: In covering the history of Mexico from independence in 1821 through the early 2000s, the course aims to explain the race, gender, and class dimensions of Mexico as a postcolonial nation, its search for modernity, struggle for economic independence, issues of social justice, and relationship with the United States. (U)(3) Occasionally.

HST361, The History of Brazil: This course surveys the political, economic, and cultural themes in Brazilian history and covers both the colonial and national periods, tracing the country's history from colonization to the emergence of a "modern" nation in the 19th and 20th centuries. (U)(3) Occasionally.

HST363, Revolutions and Guerrilla Move:

This course uses revolution as a window to better understand Latin America today and explain the region's turbulent history during the 20th century. We will study the causes, processes, and results of revolutions in the region, especially

their impacts on a diverse population. (U)(3) Occasionally.

HST365, Latin America Through Film:

This course explores how film has engaged with the history of Latin America and shaped the perception of its people, societies, and cultures. Students will analyze various forms of motion pictures as visual narratives to understand the region's turbulent history and deconstruct persistent stereotypes. (U)(3) Occasionally.

HST366, Gender, Sex, and Sexuality in Latin America:

This course covers the history of gender and sexuality in Latin America from the start of colonialism until the recent times. Through the analysis of changing ideas of both femininity and masculinity, students will learn about the politics of gender in Latin America and how gender influences historical production. First-year students admitted only by permission of the department. (U)(3) Occasionally.

HST367, Geographies of Desire:

This seminar examines the relationship between gender and place from a comparative perspective—ranging from ancient cities to modern tourist destinations—to understand how ideas about gender, race, and sexuality have influenced civilization, colonization, modernity, and cosmopolitanism. (U)(3) Occasionally.

HST369, Imagining Latin American Culture:

This course provides students with the opportunity to study the discipline of anthropology of Latin America from a historical perspective. Through case studies, students examine how both U.S. and Latin American anthropologists have shaped general perceptions of race, gender, and class in the area. (U)(3) Occasionally.

HST371, Modern China: Political and social history of China since the Opium War (1839) with emphasis on the revolutionary upheavals of the 20th century. First-year students admitted only by permission of the department. (U/G)(3) Occasionally.

HST373, China and the World: This seminar course focuses on China's changing position in the world, China's changing relations with the world, and China's changing perceptions of the world from ancient times to the present. It examines China's contact with the major regions of the world in different historical periods and the impact of such contacts on both China and the world. First-year students admitted only by permission of the department. (U/G)(3) Occasionally.

HST395, War and Peace in the Middle Ages: Violence is one of the enduring aspects of human life, and peace one of its eternal hopes. It is often easier to examine what people are doing, and so we will be studying Medieval forms of violence and Medieval means of keeping or restoring peace. (U)(3) Occasionally.

HST401, Seminar in History: A particular phase or period of history will be studied each semester. First-year students admitted only by permission of the department. (U/G)(3) Occasionally.

HST411, Independent Study: Offers the qualified student of history the opportunity to pursue a topic of individual interest. Open only to juniors, seniors, and graduate students by permission of the instructor. (U/G)(1) Occasionally.

HST412, Independent Study: Offers the qualified student of history the opportunity to pursue a topic of individual interest. Open only to juniors, seniors, and graduate students by permission of the instructor. (U/G)(2) Occasionally.

HST413, Independent Study: Offers the qualified student of history the opportunity to pursue a topic of individual interest. Open only to juniors, seniors, and graduate students by permission of the instructor. (U/G)(3) Occasionally.

HST421, Internship: Offers the qualified student the opportunity for supervised work experience in a setting pertinent to the major area of study. Permission of the department chair. (U)(3) Occasionally.

HST422, Internship: Offers the qualified student the opportunity for supervised work experience in a setting pertinent to the major area of study. Permission of the department chair. (U)(6) Occasionally.

HST499, Honors Thesis. (U)(3) Occasionally.

HST518, Summer Workshop for Advanced Placement History Teachers: This course is open to new and experienced AP history teachers. Participants will discuss the themes, habits of mind, and periodization of the Advanced Placement history course, integrating content with AP history best practices. We will also review and score past AP history exams. (G)(3) Summer.

HST527, The History of Human Rights: This course examines the origins of human rights and their development in the Western world, human rights in non-European regions of the world, the

antithesis or denial of human rights in the 20th century, and concludes with readings focused on contemporary human rights issues. (G)(3)

HST701, Research: For graduate students researching a master's thesis. By permission of instructor. (G)(3) Fall, spring, and summer.

HST711, Thesis: For graduate students writing a master's thesis. By permission of instructor. (G)(3)

Individualized Major Program

Administration

Stuart Glennan, PhD, Chairperson, LAS Individualized Majors Program Committee

Program Website

www.butler.edu/individualized-majors

Individualized majors meet the needs of students whose primary academic interests cut across traditional academic disciplines. This program allows students who have shown interest in crossdisciplinary work to design their own majors. The purpose of the individualized major program (IMP) is to provide an option to study a crossdisciplinary topic in depth, not to constitute a general-studies option or to replace a double major. The IMP may appeal to nontraditional and returning students as well as to students who have completed an associate degree and wish to complete a bachelor's degree with a different focus than their associate degree. Recent IMP students have graduated in Chinese language and culture, ancient Egyptian language and culture (Egyptology), music business, and medical illustration.

Requirements

The IMP consists of at least 36 hours of coursework, which must form a coherent whole. This may include work taken at other colleges, including work taken through the Consortium for Urban Education interchange in Indianapolis. All normal Core Curriculum and LAS College requirements must be met. In LAS, the same course cannot be counted toward two different majors. The proposed program should include an experience beyond the normal classroom-based course, such as an internship, a semester of study abroad, an honors or departmental thesis, a senior seminar in a relevant department, or a service-learning project in the junior or senior year. Because each IMP is unique, there is no fixed list or sequence of courses for the major.

Admission

A student should submit to the IMP committee through its chairperson a proposal for an IMP anytime between the beginning of the sophomore year and the end of the fall semester of the junior year. In general, this application will include a general statement that describes the nature of the proposed IMP, how this IMP relates to the student's goals, and why these goals can better be pursued as an IMP rather than within a traditional major or double major. The proposal also should demonstrate the coherence and integrity of the proposed IMP, show that course resources are available to support the IMP (including courses to be taken outside of Butler), and provide evidence that the student has the motivation and initiative to carry out the IMP. The student should also recruit an advisor for the IMP and provide a detailed list of courses, which will constitute the major (subject to revision each year due to changes in available courses relevant to the IMP). The IMP committee will evaluate the proposal and decide whether to approve it. More information and the proposal application can be found at the program website.

Degree Program

- Individualized Major (BA, BS)

International Studies

Administration

Eloise Sureau-Hale, PhD, Program Director

The major cuts across traditional barriers between intellectual disciplines and draws on the resources of the departments of English; History and Anthropology; Modern Languages, Literatures & Cultures; Philosophy and Religion, Political Science; and Sociology in the College of Liberal Arts and Sciences; the Departments of Economics, Finance, and Management in the College of Business; and the College of Communication. Faculty members most directly affiliated with the program are:

Professors

Kwado Anowka, PhD; Robert B. Bennett Jr., JD; Bruce Bigelow, PhD; Terri Carney, PhD; Roberto Curci, PhD; Peter Grossman, PhD; Paul Hanson, PhD; Siobhán McEvoy-Levy, PhD; Antonio V. Menéndez-Alarcón, PhD; Gregory Osland, PhD; Katherine B. Novak, PhD; William Rieber, PhD; Paul Valliere, PhD; Harry van der Linden, PhD; Sylvie Vanbaelen, PhD; Linda Willem, PhD

Associate Professors

Craig Auchter, PhD; Chad Bauman, PhD; Krista Cline, PhD; John Cornell, PhD; Elise Edwards, PhD; Irune Gabiola, PhD; Margaretha Geertsema Sligh, PhD; Gabriela Muñiz, PhD; Sholeh

Shahrokhi, PhD; Ageeth Sluis, PhD; Ania Spyra, PhD; Eloise Sureau-Hale, PhD; Robin Turner, PhD

Assistant Professors

Fait Muedini, PhD; Su-Mei Ooi, PhD; Zachary Scarlett, PhD

Program Website

www.butler.edu/international-studies

Why Study International Studies?

The international studies major is an interdisciplinary program designed to give students an awareness of the diversity, complexity, and interdependence of the world community, and to provide them with the necessary background to understand and analyze the political, economic, social, and cultural aspects of current world problems and issues. The international studies major offers students the cultural competency necessary to be successful in an increasingly complex and global job market. It prepares students for careers in government, international organizations, journalism, international consulting, business, education, community development, and human rights work with nongovernmental organizations. It also provides a foundation for graduate work in such disciplines and programs of study as law, international studies, international relations, area studies, social sciences (anthropology, history, political science, sociology, etc.), comparative literature, religious studies, public policy, and public administration.

Why Study International Studies at Butler?

The curriculum of the international studies program at Butler is flexible; it can be adapted to meet the student's individual interests and career plan. The following outlines some of the key characteristics and advantages of studying international studies at Butler University.

- Student-oriented program.
- Large number of full-time faculty from various departments and areas of studies, rendering the curriculum truly comprehensive and global, and offering students a great variety of perspectives.
- Curriculum that prepares students to work and be successful in an increasingly multicultural environment.
- Curriculum that prepares students for interdisciplinary research.
- Well-structured curriculum that gives students the fundamental knowledge in the field, while allowing students to concentrate in regional foci and subfields of their interest.

- Washington, DC, internship: Students can intern in many government agencies and in Congress, nongovernmental organizations, foreign embassies, think-tanks, and international organizations such as the OAE, IMF, etc.
- International internships, where students can acquire hands-on knowledge of many countries around the world.
- Comprehensive study-abroad program with opportunities for study in nearly every country of the world.
- Concrete experiences in diplomacy by participating at the Model European Union, Model United Nations, and/or Model Arab League (cost of travel and lodging is covered by the program).
- Financial support for students conducting thesis research.
- Financial support for travel for students presenting papers at conferences.
- Active student-run International Studies clubs.

International Studies Student Learning Objectives

This program provides students with the opportunities to acquire, develop, and demonstrate knowledge and understanding on a range of skills and abilities in relation to the international system and the process of globalization. When completing this degree, students will be able to:

- Demonstrate knowledge of the major dimensions of globalization, such as economic, political, and cultural globalization
- Describe the major functions of international organizations, such as the United Nations, the World Bank, the International Monetary Fund, and the World Trade Organization
- Draw connections between social issues in their local community and the larger national and global context for such issues.
- Describe and assess the main aspects of international relations, including the main aspects of U.S. foreign policy, colonialism, and nationalism
- Demonstrate knowledge of appropriate social scientific methods to compile and interpret data in assigned research projects or papers
- Understand the complexity of the contemporary world and demonstrate familiarity with the variety and relativity of cultures within one major region

Degree Programs

- International Studies (BA)
- Minor in International Studies

Requirements for the Major

The major consists of 42 hours, 33 of which must be fulfilled at the 300 level or above.

I. Core (21 hours)

A. Introduction. IS101 and one of the following courses:

- IS101, Introduction to International Studies
- PO141, Introduction to International Politics
- PO151, Introduction to Comparative Politics
- SW205-GE, Cultural Geography, Regions of the World
- SW220-EC, The Economy and Society
- TI250-RL, Religions of the World

B. International Arrangements and Interactions. IS390, United Nations and Other International Organizations, plus one of the following courses:

- AN326, Youth Conflict, Global Cinema
- JR417, International Communications
- IB320, International Business Environment (additional prerequisite: permission of the instructor)
- PO322, International Conflict and Peace Building
- SO355, International Crime

C. Research Methods. One of the following:

- PO201, Research and Analysis
- SO393, Research Methods Seminar

D. International Relations and Diplomacy.

One of the following:

- HST353, The American Empire
- PL364, Ethics and International Relations
- PO320, International Relations
- PO355, U.S. Foreign Policy

E. Capstone Course (to be taken in the junior or senior year). IS410W, The Global Society (Prerequisites: IS101, another course from A, and at least one 300-level course. This course is cross-listed with SO355 and AN335.)

II. International Studies Area Courses

A. 18 hours from two of the following areas (9 hours in each area; two disciplines must be represented).

1. Africa

- FR334, Introduction to Francophone Cultures

- FR485, Topics in Francophone Studies
- PO350, African Politics

2. Asia

- AN322, Sex, Gender, and Sexuality in Japan
- AN329, Japanese Popular Culture
- AN366, East Asia Through Ethnography
- AN368, Coming of Age in the Middle East
- FL320, Chinese Civilization
- HST305, Topics in History: Youth and Revolution Modern China
- HST305, Topics in History: Mao's China
- HST371, Modern China
- RL353, Buddhism

3. Europe

- FR320, Topics in French and Francophone Cultures
- FR345, France and the Francophone World: 1900 to the Present
- FR465, 20th Century French Novel
- FR475, 20th Century French Drama
- GR340, Germany: 1871 to the Present
- GR342, Major Trends in Modern German Literature
- GR475, Seminar in 20th Century German Literature
- HST322, 20th Century Europe
- IS301, Model European Union
- SO333, European Societies
- SP340, Spain: 1700 to the Present
- SP440: Contemporary Spanish Studies

4. Latin America

- AN362, Peoples and Cultures of Latin America
- PO360, Political Regimes in Latin America
- SO331, Latin American Societies
- SP345, Hispanic Masterpieces
- SP355, Spanish-American Culture: South America
- SP360, Hispanic Film (will count when at least three-quarters of content focuses on Latin America)
- SP365, Hispanic Short Story (will count when at least three-quarters of content focuses on Latin America)
- SP370, Topics in Contemporary Hispanic Societies
- SP450, Topics in Spanish-American Studies
- SP460, Topics in 20th Century Spanish-American Studies

5. Foreign Languages. Nine hours at the 300–400 level in one modern foreign language. Classes in French, German, Spanish, and Chinese are offered at Butler University. Classes in other languages such as Arabic, Italian, and Japanese can be taken at other universities in the area.

B. One elective to be chosen from the following or any course in I or II-A above:

- AN320, Gender and Sexuality in Globalization
- EC433, International Economics (prerequisite or permission of the instructor)
- EN321, EN322, EN421, and EN422, Comparative World Literature
- IB367, Legal Aspects of International Business (additional prerequisite: permission of instructor)
- MK491, International Marketing (additional prerequisite: permission of instructor)
- SO323, Racial and Ethnic Relations
- SO343, Popular Culture: A Comparative Study

III. Special International Studies Courses, which may include:

- IS401, IS402, and IS403: Independent Study in International Studies
- IS404 and IS405, Internship in International Studies
- IS470, Selected Topics in International Studies (prerequisite: permission of instructor)
- IS499, Honors Thesis

IV. Study Abroad (highly recommended).

Experience abroad may be in the form of attendance at a foreign college or university, an international internship, independent travel connected with an approved independent study project, or participation in an approved foreign study tour. Credits from those experiences abroad usually count toward fulfilling the requirements of the major or minor.

V. Model United Nations, Model Arab League, and Model European Union (highly recommended). International studies majors can participate in these three events, which play a very important role in the formation of students interested in international issues, because they learn the rules of negotiation and diplomacy as well as the workings of the United Nations, Arab League, and European Union. The cost for participating in these events (registration, airfare, and lodging) is covered by the International Studies budget.

Requirements for the Minor

The minor consists of 21 hours, 15 of which must be fulfilled at the 300 level or above.

I. Core (12 hours)

A. Introduction. IS101, Introduction to International Studies

B. International Arrangements and

Interactions. One of the following:

- AN326, Youth Conflict, Global Cinema
- JR417, International Communications
- IB320, International Business Environment (additional prerequisite: permission of the instructor)
- IS390, United Nations and Other International Organizations
- PO322, International Conflict and Peace Building
- SO355, International Crime

C. International Relations and Diplomacy.

One of the following:

- HST353, The American Empire
- PL364, Ethics and International Relations
- PO320, International Relations
- PO355, U.S. Foreign Policy

D. Capstone Course (to be taken in the junior or senior year). IS410W, The Global Society (Prerequisites: IS101, another course from A, and at least one 300-level course. This course is cross-listed with SO355 and AN335.)

II. International Studies Area Courses (9

hours; take courses from at least two different areas)

1. Africa

- FR334, Introduction to Francophone Cultures
- FR485, Topics in Francophone Studies
- PO350, African Politics

2. Asia

- AN322, Sex, Gender, and Sexuality in Japan
- AN329, Japanese Popular Culture
- AN366, East Asia Through Ethnography
- AN368, Coming of Age in the Middle East
- FL320, Chinese Civilization
- HST305, Topics in History: Youth and Revolution Modern China
- HST305, Topics in History: Mao's China
- HST371, Modern China
- RL353, Buddhism

3. Europe

- FR320, Topics in French and Francophone Cultures
- FR345, France and the Francophone World: 1900 to the Present
- FR465, 20th Century French Novel
- FR475, 20th Century French Drama
- GR340, Germany: 1871 to the Present
- GR342, Major Trends in Modern German Literature
- GR475, Seminar in 20th Century German Literature
- HST322, 20th Century Europe

- IS301, Model European Union
- SO333, European Societies
- SP340, Spain: 1700 to the Present
- SP440, Contemporary Spanish Studies

4. Latin America

- AN362, Peoples and Cultures of Latin America
- PO360, Political Regimes in Latin America
- SO331, Latin American Societies
- SP345, Hispanic Masterpieces
- SP355, Spanish-American Culture: South America
- SP360, Hispanic Film (will count when at least three-quarters of content focuses on Latin America)
- SP365, Hispanic Short Story (will count when at least three-quarters of content focuses on Latin America)
- SP370, Topics in Contemporary Hispanic Societies
- SP450, Topics in Spanish-American Studies
- SP460, Topics in 20th Century Spanish-American Studies

5. Foreign Languages.

Courses at the 300–400 level in one modern foreign language. Classes in French, German, Spanish, and Chinese are offered at Butler University. Classes in other languages such as Arabic, Italian, and Japanese can be taken at other universities in the area.

III. Special International Studies Courses, which may include:

- IS401, IS402, and IS403, Independent Study in International Studies
- IS404 and IS405, Internship in International Studies
- IS470, Selected Topics in International Studies (prerequisite: permission of instructor)
- IS499, Honors Thesis

IV. Study Abroad (highly recommended).

Experience abroad may be in the form of attendance at a foreign college or university, an international internship, independent travel connected with an approved independent study project, or participation in an approved foreign study tour. Credits from those experiences abroad usually count toward fulfilling the requirements of the major or minor.

V. Model United Nations, Model Arab

League, and Model European Union (highly recommended). International Studies minors can participate in these three events, which play a very important role in the formation of students interested in international issues, because they learn the rules of negotiation

and diplomacy as well as the workings of the United Nations, Arab League, and European Union. The cost for participating in these events (registration, airfare, and lodging) is covered by the International Studies budget.

Core Course Offered by International Studies

SW270-IS, Understanding Global Issues:

The course addresses the intensification of globalization during the first decade of the 21st century. It introduces students to contemporary issues related to globalization. (U)(3) Fall.

International Studies Courses

IS101, Introduction to International Studies:

The course is designed to help students to understand and critically reflect on issues that affect both the United States and the international community. The issues addressed in this course are key pieces of the larger and interrelated set of the international system. (U)(3) Fall and spring.

IS301, European Union Model: This course introduces the student to the organization and functioning of the different institutions of the European Union and prepares them to participate in the Midwest Model European Union, which takes place every April for three days. The major topics we will address include: the history of the European integration, government and politics of the European Union and its institutions. Prerequisite: Any 100-level course in the social sciences or permission of the instructor. (U)(1) Annually, term varies.

IS390, The United Nations and Other International Organizations: This course introduces students to several international organizations, with a focus on the United Nations. The broader theoretical and experiential focus of the class will help students understand international institutions and to become more effective global citizens, while developing proficiency in policy formulation, parliamentary procedure, negotiation, and conflict resolution. (U)(3) Fall.

IS401, Independent Study: Offers the qualified student in International Studies the opportunity to pursue a topic of individual interest. Prerequisites: junior or senior standing, consent of the director of the project, and approval of the director of the International Studies Program. (U)(1) Fall and spring.

IS402, Independent Study: Offers the qualified student in International Studies the opportunity to pursue a topic of individual interest.

Prerequisites: junior or senior standing, consent of the director of the project, and approval of the director of the International Studies Program. (U)(2) Fall and spring.

IS403, Independent Study: Offers the qualified student in International Studies the opportunity to pursue a topic of individual interest. Prerequisites: junior or senior standing, consent of the director of the project, and approval of the director of the International Studies Program. (U)(3) Fall and spring.

IS404, Internship in International Studies: Offers the qualified student the opportunity for supervised experience in internationally oriented jobs in U.S. or foreign governments, business, or international organizations. A popular and very useful internship for international studies majors is the Washington internship. (U)(3) Fall and spring.

IS405, Internship in International Studies: Offers the qualified student the opportunity for supervised experience in internationally oriented jobs in U.S. or foreign governments, business, or international organizations. A popular and very useful internship for international studies majors is the Washington internship. (U)(6) Fall and spring.

IS410, The Global Society: This course is about the constitution of the global system, and the processes reproducing and transforming the structures of globalization. The course acquaints the student with the process of worldwide economic, cultural, and political flows and provides an introduction to the organization and functioning of the global society. Prerequisite: IS101. (U/G) Spring.

IS470, Selected Topics in International Studies: In-depth study of selected topics not covered in traditional courses. Prerequisite: Consent of instructor. (U)(3) Fall and spring.

IS499, Honors Thesis. (U)(3) Fall and spring.

Disciplinary Courses

The descriptions for the other courses listed in the program are available in the corresponding discipline of the catalog (i.e., history, political science, sociology, etc.). A complete list and description of new courses or topic courses will be published every semester.

Mathematics and Actuarial Science

Administration

William W. Johnston, PhD, Department

Chair; Lacey P. Echols, MAT, Coordinator of Mathematics Support Services

Professors

William W. Johnston, PhD; Prem L. Sharma, PhD

Associate Professors

Duane Leatherman, MA; Rebecca G. Wahl, PhD

Assistant Professors

Rasitha R. Jayasekare, PhD; Scott Kaschner, PhD; Amber C. Russell, PhD; Jonathan E.

Webster, PhD; Christopher J. Wilson, PhD

Instructors

Lacey P. Echols, MAT; Kathie J. Freed, MS; Karen Holmes, PhD; Mary Z. Krohn, PhD

Department Website

www.butler.edu/math

The department offers both majors and minors in each of the disciplines of mathematics and actuarial science. In addition to the departmental requirements listed below, a student must complete the Core Curriculum requirement, the College of Liberal Arts and Sciences language requirement, and other general requirements listed in this Bulletin. A bachelor of science degree is also available in natural science and mathematics or in natural science and actuarial science for majors who complete a total of at least 60 credits combined from the two chosen areas.

Why Study Mathematics?

The mathematics major is well suited to and designed for students who are interested in gaining employment in government or industry jobs that require problem-solving skills, attending graduate or professional school, or teaching in secondary schools.

Why Study Mathematics at Butler?

- The department faculty provides a personal education in a close-knit community. Students and faculty members know one another in supportive, professional relationships, and faculty members care about their students and their success and know every student by name. All of the department's classes are small—fewer than 30 students in each one, including introductory-level courses. Every course is taught by faculty members with advanced degrees and with a wide range of specialties in the different mathematical subfields, and there are no graduate students teaching departmental classes. In these ways, the department offers a consistently student-oriented education.
- The department's curriculum is top-rated in quality. It adheres to the Committee for Undergraduate Program in Mathematics

guidelines—one of the few collegiate mathematics departments in the United States to commit enough teaching resources to do so. The Butler mathematics major is a wonderful choice for a strong investment in any student's future.

- Department professors are available to students. Each one maintains office hours—no appointment necessary. The department's office doors are open every single workday. Faculty members support each other, and students may talk with any faculty member to get help needed.
- The department's Mathematics Tutoring Lab hires mathematics and mathematics education majors to provide support to students enrolled in lower-level and core mathematics classes—at no charge.
- Mathematics faculty members are always open to sponsoring student/professor collaborative research for the department's majors, such as in the Butler Summer Institute.
- Dual degrees are available in engineering through a partnership with the Purdue School of Engineering and Technology at Indianapolis (IUPUI). One dual-degree option is that a student can earn degrees in two majors—for example, mathematics (from Butler) and engineering (from Purdue). (See Engineering Dual Degree Program—EDDP.)

Degree Programs

- Actuarial Science (BA, BS)
- Mathematics (BA, BS)
- Minor in Actuarial Science
- Minor in Mathematics

Mathematics Student Learning Outcomes

Our graduates are problem solvers with a broad knowledge of mathematical subfields. They are extraordinarily strong at thinking about and proving abstract mathematical statements, and they communicate mathematical solutions and concepts clearly and effectively. Butler mathematics majors carry with them an ability to understand mathematical arguments and assess their validity. They can identify the fundamental concepts in the main areas of mathematics, including set theory, logic, calculus, discrete mathematics, linear and modern algebra, and real and complex analysis. They can construct mathematical proofs using standard techniques such as induction, contradiction, and contraposition, and they can solve mathematical problems by applying abstract theory and/or mathematical models as

appropriate. Our graduates communicate well to various audiences—to individuals who might be trained in mathematics and to those who are not. This ability includes the use of mathematical word processing systems to write mathematics. In these many ways, our majors understand various interconnections among the branches of mathematics, the discipline's breadth and depth, and its beauty.

Requirements for the Major

- MA106, MA107, MA208, Calculus and Analytic Geometry I, II, III
- MA200, Basics of Advanced Mathematics
- MA205, Discrete Mathematics
- MA215, Linear Algebra
- MA312, Modern Algebra I
- MA326, Real Analysis I
- MA330, Complex Analysis
- MA490, Senior Seminar
- Choice of either MA313, Modern Algebra II, or MA327, Real Analysis II
- Programming course numbered CS142 or higher
- Three upper-division electives to be chosen from MA301, MA305, courses numbered between MA310 and MA399, or MA473

Requirements for the Minor

- MA106, MA107, Calculus and Analytic Geometry I, II
- MA200, Basics of Advanced Mathematics
- MA205, Discrete Mathematics
- Choice of either MA305, Graph Theory, or MA208, Calculus and Analytic Geometry III
- MA215, Linear Algebra
- One additional upper-division elective to be chosen from MA301, MA305, courses numbered between MA310 and MA399, or MA473

Why Study Actuarial Science?

An actuary is a mathematician responsible for estimating risks, primarily in the insurance and financial security industries. The Butler program prepares each major for a successful career as an actuary, as well as for the professional SOA (Society of Actuaries) Examinations in Probability (P), Financial Mathematics (FM), Actuarial Models (MLC and MFE), and Construction and Evaluation of Actuarial Models (C).

Why Study Actuarial Science at Butler?

- Butler is one of only a few institutions in Indiana to offer an undergraduate degree

in actuarial science. The department additionally offers a combined actuarial science/management curricular option, in which students can earn both an actuarial science undergraduate degree and an MBA degree.

- The department has a very active student club in actuarial science. It also works with a departmental board of advisors for actuarial science, whose members are alumni who work with the department faculty and student majors. For example, they often offer advice for the program and support departmental efforts to help students find internships and jobs.
- Each year, upper-level actuarial science major courses give students a chance to see, from a faculty member who can provide an industry point of view, how classroom ideas and issues arise naturally in the workplace.
- The actuarial science curriculum prepares students to take as many as three or four actuarial science examinations while still a student at Butler, giving them a jump-start on their career.

Actuarial Science Student Learning Outcomes

Our graduates enter the job market with a strong working knowledge of the basic concepts and theories of actuarial science. They are qualified to sit for the first five exams given by the Society of Actuaries (as listed above: examinations P, FM, MLC, MFE, and C). These actuarial science majors can solve insurance and financial problems related to risk assessment, and they know how to perform related calculations in applications of standard actuarial methods. Finally, they are able to communicate sophisticated quantitative analysis clearly and correctly to various audiences in both written and spoken presentations. In this way, our actuarial science majors are well prepared to take leadership roles in businesses that require risk-management services.

Requirements for the Major

- MA106, MA107, MA208, Calculus and Analytic Geometry I, II, III
- MA215, Linear Algebra
- MA360, Probability Theory I
- MA361, Statistical Theory
- MA362, Applied Statistical Methods
- MA363, Probability Theory II
- MA372, Loss Models
- MA395, Financial Mathematics
- MA397, Actuarial Mathematics I
- MA398, Actuarial Mathematics II
- MA399, Financial Derivatives

Requirements for the Minor

- MA106, MA107, Calculus and Analytic Geometry I, II
- MA360, Probability Theory I
- MA395, Financial Mathematics
- Two of the following courses:
- MA363, Probability Theory II
- MA372, Loss Models
- MA397, Actuarial Mathematics I
- MA398, Actuarial Mathematics II
- MA399, Financial Derivatives

Actuarial Science/Management Program

The insurance and financial service industries have a strong need for management prospects who combine analytic and technical skills (related to the department's actuarial science curriculum) with the leadership capabilities, people skills, and understanding of business practices (which come from advanced education in management). The actuarial science/management program gives its enrolled students capability in this blend of skills and training. Our graduates are able to command excellent entry-level positions and are strong candidates for fast advancement to upper-level management positions. The actuarial science/management program includes an undergraduate major in actuarial science with a strong component of business theory, followed by a 33-hour MBA program. Enrolled students may choose their graduate courses to gain a concentration in either organizational leadership or finance.

Phase I—Undergraduate Curriculum Requirements for the Major

- MA106, MA107, MA208, Calculus and Analytic Geometry I, II, III
- MA215, Linear Algebra
- MA360, Probability Theory I
- MA361, Statistical Theory
- MA362, Applied Statistical Methods
- MA363, Probability Theory II
- MA372, Loss Models
- MA395, Financial Mathematics
- MA397, Actuarial Mathematics I
- MA398, Actuarial Mathematics II
- MA399, Financial Derivatives

In addition, the following business courses are recommended:

- AC203, AC204, Introduction to Accounting I, II
- MS265, Information Technology (prerequisite: MS100)
- EC231, EC232, Principles of Micro/Macroeconomics
- FN340, Corporate Finance

- MK380, Introduction to Marketing Management
- MG360, Organizational Behavior

A student must achieve a minimum grade of B in a given business course to waive the comparable prerequisite (400-level) course in the MBA program.

Phase II—Graduate Curriculum

Upon successful completion of Phase I, and after meeting the MBA program admission requirements, students can complete the College of Business MBA program with a minimum of 33 hours of MBA coursework (500 level). To qualify for full admission into the MBA program, the following requirements must be satisfied: students must obtain an appropriate score on the GMAT test; and students must submit to the graduate admission office a graduate admission application, two letters of recommendation, an official transcript, and a résumé.

Core Courses Offered by Mathematics and Actuarial Science

AR210-MA, Statistically Speaking: Who needs statistics in the 21st century? Anyone looking critically at numerical information who does not want to be misled by incorrect or inappropriate calculations or anyone dealing with issues in their environment, state/nation, or career would benefit from studying the methodology of statistics. These problems include finding ways to improve our environment and living standards or studies conducted in an effort to fight diseases. This course is an introduction to applied statistics in the natural, social, and managerial sciences through the use of current environmental and global issues. Topics include sampling, data analysis, experimental design, and the use of computer-based statistical software. (U)(3) Fall and spring.

AR211-MA, Codes and Secret Messages: How can sensitive information such as credit card numbers or military strategy be exchanged between two people without being intercepted by a third party? Are there ways to detect and correct errors resulting from a mistyped identification number or a scratched CD? Can information be exchanged securely among multiple individuals without anyone revealing his or her own decryption scheme? In this course, students will investigate various strategies for storing and transmitting information accurately, efficiently, and securely. Students will design several types of ciphers for sending secret messages, construct various error-detecting and error-correcting codes, and

implement secure public-key cryptosystems for exchanging messages with classmates. As these issues are explored, students will discover the need for mathematical notions such as modular arithmetic, permutations and combinations, probability and statistics, vectors and matrices, and formal logic. Students will also become aware of the central role played by cryptology and coding throughout history and modern society. (U)(3) Fall and spring.

AR212-MA, Win, Lose or Draw: Why do we play games? Whatever the reason, games are a big piece of life. The world has played games for a long, long time—every time period, every culture. We will study games and gambling in our culture as well as those in other cultures. To better understand games, students will study probability theory and its application to gaming. Applications include casino games, lotteries, racing, wagering systems, as well as other games. Some analytical tools that will arise during the course are counting methods, expected value, trees, gambler's ruin, and distributions. (U)(3) Fall and spring.

AR213-MA, Infinity and Beyond: Is infinity a knowable concept? The ability to wrestle with the infinite remains one of the pinnacles of human thought. Many of the big ideas of ancient and modern mathematics are related to this notion. With infinity as a unifying theme, this course aims to engage students in exploratory investigations and mathematical ways of thinking in topics like estimation, rigorous proof of universal statements, iterative limits, resolution of paradoxes, inherent limitations of computer calculations, and the extension of ideas to new settings. Practical outcomes include improved numeracy and sense of scale, appreciation for the application of abstract mathematics, awareness of limits in computational models, insights in philosophy and aesthetics, novel techniques of thought, and a general emphasis on careful reasoning. (U)(3) Fall and spring.

Mathematics and Actuarial Science Courses

MA101, Algebra: Provides students with the necessary background to continue in mathematics. Topics include the number system, equations, inequalities, graphs, polynomials, algebraic functions, and exponents. Students who have successfully completed any other mathematics course will not be given credit for MA101. Does not satisfy Core Curriculum requirement. Must not be taken pass/fail. (U)(3) Fall and spring.

MA102, Precalculus: This course provides students with the necessary mathematical background to successfully complete a calculus course or a course that has calculus as a major topic. Topics include solving equations and inequalities, exponents, factoring, complex numbers, and functions—linear, quadratic, polynomial, rational, exponential, logarithmic, and trigonometric. Students who have successfully completed any other mathematics course (MA106 or above) will not be given credit for MA102. Does not satisfy Core Curriculum requirement. Must not be taken pass/fail. Prerequisite: Appropriate score on the Butler math placement test. (U)(3) Fall and spring.

MA106, Calculus and Analytic Geometry 1: The beginning calculus course for properly prepared students. Topics include differentiation, integration, elementary differential equations, and exponential, logarithmic, and trigonometric functions. Applications are emphasized. The Analytic Reasoning core course is waived for students who successfully complete this course. Prerequisite: Placement, or C- in MA102. (U)(5) Fall, spring, and summer.

MA107, Calculus and Analytic Geometry 2: Continuation of MA106. Topics include methods of integration, improper integrals, infinite series, conic sections, and polar coordinates. Prerequisite: MA106. (U)(4) Fall, spring, and summer.

MA108, First Year Problem Solving: This one-credit course gathers together first-year students to practice and learn about effective techniques to solve problems and think about proofs in mathematics. Students work together with faculty in a team-oriented spirit and approach to problem solving. (Note: This course does not satisfy the Core Curriculum FYS requirement.) Must be a first year student to enroll in MA108. (U)(1) Fall.

MA125, Business Calculus: This course introduces students to the concepts and methods of calculus by studying differentiation and integration with applications to business. Additionally, the mathematics of finance, including simple and compound interest, future and present annuity values, and amortization, is developed. Other topics may include a brief introduction to probability and counting techniques. Prerequisite: C- in MA101. (U)(3) Fall and spring.

MA162, Elementary Statistics: An introduction to inferential statistics with applications in the natural, social, and managerial sciences. This

course is especially designed to meet the needs of students who will later pursue postgraduate studies in social and natural sciences or professional programs in medicine. The course introduces elementary probability and uses it to develop a sound understanding of confidence intervals and hypothesis testing. Topics include data analysis, descriptive statistics, linear regression, chi-square tests, analysis of variance, and tests and confidence intervals for means and proportions. The Analytic Reasoning core requirement is waived for students who successfully complete MA162. Credit will not be awarded for both AR 210-MA and MA162. Prerequisite: MA101 or equivalent. (U)(3) Fall and spring.

MA200, Basics of Advanced Mathematics: Introduces students to the concepts and methods of higher mathematics with an emphasis on techniques of mathematical proof. Topics include foundations of logic, set theory, relations, partial orders, well-ordering, isomorphisms, induction, equivalence relations, and functions. Corequisite or prerequisite: MA106 or equivalent. (U)(3) Fall and spring.

MA205, Discrete Mathematics: Proofs by induction, simple diagonalization proofs, combinatorial theory, relations and functions, inclusion/exclusion principle, derangements, recurrence relations, and generating functions. Prerequisite: MA106 (U)(3) Fall.

MA208, Calculus and Analytical Geometry 3: Continuation of MA107. Topics include vector calculus, multivariable calculus, partial differentiation, multiple integration, line integrals, and Green's Theorem. Prerequisite: MA107. (U)(3) Fall and spring.

MA215, Linear Algebra: Systems of linear equations, matrices, determinants, vector spaces, linear transformations, and the eigenvalue problem. Prerequisite: MA107. (U)(3) Fall, spring, and summer.

MA301, History of Mathematics: Historical development of number systems, including contributions from Egypt, Greece, China, India, and medieval to early modern Europe. Topics may include arithmetic, algebra, theory of equations, geometry, trigonometry, number theory, combinatorics, probability, and the beginnings of calculus. Prerequisites: MA107 and MA205. (U/G)(3) Fall.

MA305, Graph Theory: Graphs and subgraphs, planar graphs, graph coloring and chromatic polynomials, trees, weighted trees and prefix codes, transport networks, matching theory. Prerequisite: MA205. (U)(3) Spring.

MA308, Problem Seminar: A course emphasizing the process of solving mathematical problems. Problems will be drawn from various sources. Students and faculty will meet weekly to exchange ideas and present solutions. Students may earn up to three credits by repeated registrations. Prerequisite: MA107. (U/G)(1) Fall and spring.

MA311, Number Theory: Divisibility, the Euclidean algorithm, prime numbers, unique factorization, linear congruences, the Chinese Remainder Theorem, and applications to public-key cryptography. Additional topics may include primitive roots, quadratic residues, factorization algorithms, Diophantine equations, continued fractions, and the distribution of primes. Prerequisite: MA205. (U/G)(3) Occasionally.

MA312, Modern Algebra: Relations and graphs, groups, subgroups, normal subgroups, homomorphism theorems, rings, and fields. Prerequisites: MA200, MA205, MA215. (U/G)(3) Spring.

MA313, Modern Algebra II: This course is a continuation of MA312. Topics include Euclidean rings, principal ideal domains, unique factorization domains, field extensions, and Galois theory. Prerequisite: MA312. (U)(3) Fall.

MA326, Real Analysis 1: A rigorous study of the principles underlying real-variable calculus. Topics include limits, continuity, differentiation and Riemann integration. Prerequisites: MA107, MA200, MA205. (U/G)(3) Fall.

MA327, Real Analysis 2: Continuation of MA326. A variety of topics, such as sequences, series, uniform convergence, introduction to Lebesgue measure and integration, line and surface integrals. Prerequisite: MA326. (U/G)(3) Spring.

MA330, Complex Analysis: Complex numbers, analytic functions, complex integration, Cauchy's Theorem, Taylor and Laurent series, contour integrals, and the residue theorem. Prerequisite: MA208. (U/G)(3) Spring.

MA334, Differential Equations: Analytical, numerical, and qualitative approaches to differential equations, including linear equations and systems, and nonlinear equations. Prerequisite: MA107. (U/G)(3) Fall and spring.

MA351, Geometry: Various topics from Euclidean, projective, and non-Euclidean geometry. Prerequisite: MA107. (U/G)(3) Spring.

MA360, Probability Theory 1: Combinatorics, general probability, conditioning, discrete/continuous random variables, transformed

random variables. Joint, marginal, conditional continuous densities. Covariance. The central limit theorem. Topics may include order statistics, conditional expectation. Prerequisite: MA107 or permission. (U)(3) Fall.

MA361, Statistical Theory: Tests of statistical hypotheses, linear models, nonparametric methods, multivariate distributions, and theory of statistical inference. Prerequisite: MA360. (U/G)(3) Spring.

MA362, Applied Statistical Methods: Simple linear regression, correlation, multiple regression, and time series. Regression topics to be discussed include dummy variables, transformations of data, and multicollinearity. Time series topics cover model identification, parameter estimation, diagnostic checking, and forecasting. Prerequisite: MA361. (U)(3) Occasionally.

MA363, Probability Theory 2: Topics include Poisson processes, mixed continuous-discrete distributions (including expectation and cumulative distribution), moment generating functions, order statistics, conditional densities, conditional expectation, and a brief introduction to simple linear regression of a single variable. The course emphasizes actuarial applications, such as net benefit calculations. Prerequisite: MA360 (U/G)(3) Spring.

MA365, Numerical Analysis: Solutions of equations and systems, error analysis, numerical differentiation and integration, interpolation, least squares approximation, numerical solution of ordinary differential equations. Prerequisite: MA107. (U/G)(3) Occasionally.

MA372, Loss Models: Models for the amount of a single payment, models for the number of payments, aggregate loss models. Prerequisite: MA361. (U/G)(3) Occasionally.

MA395, Financial Mathematics: Time value of money, annuities, loans, bonds, general cash flows, immunization, and introduction to financial derivatives. Prerequisite: MA107 (U)(4) Fall.

MA397, Actuarial Mathematics 1: Survival distributions and life tables; the mathematics of life insurance, life annuities, net premiums, and net premium reserves. Prerequisites: MA360, MA395 (MA395 may be taken concurrently). (U/G)(3) Occasionally.

MA398, Actuarial Mathematics 2: Multiple life functions, multiple decrement models, valuation theory for pension plans, ruin models. Prerequisite: MA397. (U/G)(3) Occasionally.

MA399, Financial Derivatives: Put-call parity, binomial options, Black-Scholes formula, delta-hedging, lognormal distribution, Brownian motion and Ito's lemma. (U)(3) Occasionally.

MA401, Independent Study: Provides an opportunity for qualified students to pursue special topics under the guidance of a department staff member. Prerequisite: Permission of department. (U/G)(1) Fall and spring.

MA402, Independent Study: Provides an opportunity for qualified students to pursue special topics under the guidance of a department staff member. Prerequisite: Permission of department. (U/G)(2) Fall and spring.

MA403, Independent Study: Provides an opportunity for qualified students to pursue special topics under the guidance of a department staff member. Prerequisite: Permission of department. (U/G)(3) Fall and spring.

MA411, Internship: Supervised work experience directly related to the major area of study. Prerequisites: Junior or senior standing and permission of department. (U)(3) Fall and spring.

MA471, Topics in Mathematics: In-depth study of special topics not covered in regular courses. Prerequisite: Permission of department. (U/G)(1) Fall and spring.

MA490, Senior Seminar: Intended for seniors majoring in mathematics, this seminar features student presentations on mathematical topics and selected readings. Prerequisites: Fifteen hours of mathematics and junior standing or permission of department. (U)(1) Spring.

MA499, Honors Thesis. (U)(3) Fall and spring.

Modern Languages, Literatures & Cultures

Administration

Terri Carney, PhD, Department Chair

Professors

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Irune del Río Gabiola, PhD; Xiaoqing Liu, PhD; Gabriela Muniz, PhD; José Roberto Alexander Quintanilla Aguilar, PhD; Eloise Sureau-Hale, PhD

Assistant Professors

Sarah Painitz, PhD (visiting); Juan Pablo Rodríguez Prieto, PhD

Instructors

Melissa Etzler, PhD; Liliana Goens, MA, MS; Elisa Lucchi-Riester, MAT; Amina Butoyi Shabani, PhD; Michelle Stigter, MA, MS

Department Website

www.butler.edu/mlc

Why Study Modern Languages, Literatures & Cultures?

The study of languages, literatures, and cultures gives students access to a broader global community, invites them to deepen their engagement with other linguistic and cultural traditions, and teaches them to be sensitive and critical readers of cultural texts. Becoming proficient or fluent in another language also enhances self-reflection, increases self-knowledge, and heightens awareness of one's own community and place in the world. Furthermore, a modern languages degree increases opportunities for employment because Butler students provide companies, nonprofits, and governmental entities with communicative and cultural analytical advantages in an increasingly shrinking world.

Why Study Modern Languages, Literatures & Cultures at Butler?

Small classes are led by internationally recognized and published faculty members hailing from such countries as Argentina, Austria, Belgium, Brazil, China, Colombia, El Salvador, France, Italy, Mexico, Puerto Rico, Senegal, Spain, the United States, and Uruguay. Our faculty members' wide variety of linguistic and cultural expertise enriches the curriculum and keeps students connected to the global communities they represent. Also, modern languages students consistently complete in-depth research with faculty and present at conferences both at Butler and around the country.

Students who study with us find they are well-supported by the resources we have available in the Modern Language Center (Jordan Hall, room 391), where they receive tutoring, watch foreign language films, and work on group projects with our state-of-the-art media and computer stations.

Modern languages students choose from a wide variety of well-established study-abroad options, including a three-week, faculty-led program in Costa Rica; a semester-long, faculty-led program in Spain; summer programs in China coordinated with the Confucius Institute at Indiana University-Purdue University Indianapolis; and

more than 100 other programs offered by Butler's Center for Global Education, IFSA-Butler (Institute for Study Abroad), ISEP (International Student Exchange Program), and The Alliance for Global Education. Students receive credit for courses abroad with approval from the department chair.

Students can take advantage of the Indianapolis community by completing a service-learning course and/or independent study that connects them with local language communities—in which they can use their language skills to communicate with native speakers—as well as by completing internships with governmental entities, educational institutions, nonprofits, and businesses.

Modern languages studies can lead to these University course fulfillments and exemptions:

- If a student completes nine or more approved hours abroad, he or she can be exempted from one required Global and Historical Studies core course.
- If a student completes three eligible modern languages courses, he or she can be exempted from the Texts and Ideas core course requirement.
- Students can fulfill the Speaking across the Curriculum (SAC) and Writing across the Curriculum (WAC) University requirements by completing approved courses during eligible semesters.

Given the interdisciplinarity of our programs, students often find creative and productive ways to combine our majors and minors with other areas, preparing them well for both employment and graduate studies.

Modern Languages Student Learning Outcomes

Students will be able to do the following, in the target language:

- Clearly communicate in conversation and written form on a variety of topics
- Articulate a cogent interpretation of a cultural text by applying concepts and terminology pertaining to artistic, cultural studies, linguistic, or literary theories
- Demonstrate pluralist values, global awareness, and diversity-mindedness

Degree Programs

- Majors in French, German, Spanish, and Individualized (e.g., Chinese Language and Culture) (BA)
- Minors in Chinese, French, German, and Spanish

Requirements for the Major

A French, German, Individualized, or Spanish major consists of 33 hours in the language, at least 24 of these hours being at the 300 level or above. All language majors must take at least one 300-level skills course and two 400-level courses. Specific area minimum requirements are listed below by language.

French

- FR300, Oral and Written Communication (SAC)

At least one of the following culture/literature courses:

- FR316, Survey of French Civilization (formerly FR342)
- FR318, Introduction to Francophone Cultures (formerly FR334)

German

At least one of the following 300-level skills courses:

- GR305, Germany Today (SAC)
- GR310, German for Writing

Spanish

At least one of the following 300-level skills courses:

- SP300, Spanish Grammar in Context
- SP305, Spanish for Oral Communication (SAC)
- SP310, Spanish for Written Communication
- SP315, Spanish for Business
- SP320S, Service Learning in Spanish (WAC)

At least two culture/literature courses at the 300 level or above:

- SP330, Themes in Hispanic Studies
- SP335, Spain: Middle Ages to 1700
- SP340, Spain: 1700 to the Present
- SP345, Analysis of Literary Genres
- SP350, Spanish American Culture: Mexico, Central America, Caribbean
- SP355, Spanish American Culture: Southern Cone, Andean Countries
- SP360, Hispanic Film
- SP365, Hispanic Short Story
- SP370, Topics: Contemporary Hispanic Societies
- SP420, Topics: Golden Age of Spain
- SP430, Topics: 18th- and 19th-Century Spain
- SP440, Topics: Contemporary Spanish Studies
- SP450, Topics: Spanish-American Studies
- SP460, Topics: 20th-Century Spanish-American Studies
- SP470, Topics: Hispanic Culture in the United States

- SP490, Seminar (may be taken multiple times)
- SP499, Honors Thesis
- FL390, Seminar (in English, counts only toward major)

At least one linguistics course at the 300 level or above:

- SP325, Introduction to Hispanic Linguistics
- SP375, Spanish Pronunciation
- SP380, Structure of Spanish
- SP385, Intro to Varieties of Spanish
- SP405, Spanish Sociolinguistics
- SP410, Topics: Communication Skills in Spanish
- SP415, Spanish in the U.S.A.
- SP425, Phonetics of the Spanish Language
- SP435, Spanish Dialectology
- SP445, Topics: Hispanic Linguistics
- SP455, Spanish Second Language Acquisition
- SP465, Bilingualism in the Hispanic World
- SP485, History of the Spanish Language

Requirements for the Minor

A minor in Chinese, French, German, or Spanish consists of 21 hours in the language, at least 12 of these hours being at the 300 and 400 levels. The Spanish minor, in addition, requires at least one course from SP325 through SP499.

Placement and Earned Credits

At Butler we recognize the language accomplishments of incoming students. Whether you took regular high school courses, dual-enrollment courses, or AP/IB language courses, we will help place you in the appropriate Butler University course and assign the correct number of credits for your previous work. For proper placement and credit assignment, take the placement exam and visit the departmental website for detailed information.

Modern Language Center

The Modern Language Center (Jordan Hall, room 391) is a multilingual space focused on second language and culture acquisition. The MLC includes a comprehensive foreign feature and instructional film collection, a large group viewing area, film viewing stations for individuals, computers, a Smart Board, and gaming systems with games in a variety of languages. In addition to state-of-the-art facilities, the MLC hosts a number of activities designed to promote language and culture learning, including tutor tables, movie nights, and karaoke club. Events, information sessions, and lectures focusing on language, culture, and

social issues are also sponsored by the language center. The MLC staff is trained in academic technology and research methodology to support all facets of language learning and teaching at Butler.

Courses Taught in English

Language majors can count one of the following general foreign language (FL) courses toward a major (as a 300-level culture/literature course). Courses taught in English do not satisfy the foreign language requirement for College of Liberal Arts and Sciences students, College of Communication students, or International Business majors.

FL320, Chinese Civilization: An overview of Chinese civilization from the early dynasties through the present. This course is taught in English and does not count toward the language requirement. (U)(3) Occasionally.

FL380, Methods Teaching Foreign Language: Acquaints students with current methods of teaching foreign languages. Provides opportunities for use of the latest technologies, practical work, and discussion of problems encountered when teaching foreign languages and cultures. Also applicable for teacher certification. (U)(3) Occasionally.

FL390, Seminar: Study in depth of a selected topic in European, French, German, or Hispanic culture, such as historical or social conditions, individual writers, artists, political figures, or literary genres. (U)(3) Occasionally.

FL401, Internship in Foreign Language: A faculty-supervised work experience in schools, hospitals, not-for-profits, government, media, business, or other institutions. Primary language must be a foreign language. May be completed abroad or in the United States. Prerequisites: Acceptance into the internship program and permission of the department chair. (U)(1) Occasionally.

FL402, Internship in Foreign Language: A faculty-supervised work experience in schools, hospitals, not-for-profits, government, media, business, or other institutions. Primary language must be a foreign language. May be completed abroad or in the United States. Prerequisites: Acceptance into the internship program and permission of the department chair. (U)(2) Occasionally.

FL403, Internship in Foreign Language: A faculty-supervised work experience in schools, hospitals, not-for-profits, government, media, business, or other institutions. Primary language

must be a foreign language. May be completed abroad or in the United States. Prerequisites: Acceptance into the internship program and permission of the department chair. (U)(3) Occasionally.

FL480, Topics: Chinese Studies: Study of a selected topic in the culture of China. Themes may deal with literary, social, political, economic, and/or ethical concerns. Course may be repeated with each different topic. This course is taught in English and does not count toward the language requirement. (U)(3) Occasionally.

FL490, Seminar: Study in depth of a selected topic in European, French, German, or Hispanic culture such as historical or social conditions, individual writers, artists, political figures, or literary genres. (U/G)(3) Occasionally.

FL499, Modern Languages Keystone: Integrate. Prepare. Evolve. Completing a modern language degree and not sure what to do with it? In this capstone course, you will polish your online presence (including your foreign language ePortfolio and profiles on professional networking sites), complete an official language assessment, and work with campus resources to create a plan for continued language proficiency while leveraging those language skills in the marketplace. Modern languages majors and minors with senior standing are strongly encouraged to enroll in this capstone course. Prerequisites: Senior standing in a French, German, Individualized (with language focus), or Spanish major, or senior standing in a Chinese, French, German, or Spanish minor. (U)(1) Fall and spring.

Courses Taught in Foreign Languages

To help students gain fluency, the target language is used extensively from the first day. Courses at the 300 and 400 levels are conducted completely in the target language.

Core Courses Offered by the Department of Modern Languages, Literatures & Cultures

PCA260-MFL, Love and Marriage: 17th Cen Spanish Drama: We will read six plays from the Spanish Golden Age that take place in the capital city of Madrid. We will study these dramas in the context of 17th-century Spain, a society marked by rapid urbanization, increased social mobility, and seismic shifts in cultural norms and personal identities and lifestyles. Theater played a central role in this society, mirroring the confusing and disorienting aspects of urban life, such as

mishaps, mistaken identities, love triangles, and miscommunications. Our course will focus on the theme of love and marriage as sites of cultural anxiety at this critical juncture in the history of Spain. Students will write their own version of a Spanish “comedia” and work in groups to perform a scene from one of the plays we read in class. Additionally, they will keep a journal on how the theme of the class, “love and marriage,” is present in contemporary artistic expressions. (U)(3) Occasionally.

PCA264-SP, Nature, Art, and Craft in Peru. (U)(3) Occasionally.

TI225-GR, Literary Responses to Two World Wars: Our investigation of British, German, French, Italian, and Russian literature will be structured around the two world wars, arguably the most defining catastrophes to befall modern Europe. We will consider how writers such as Virginia Woolf, Franz Kafka, George Orwell, Paul Celan, Heinrich Boll, Gunter Grass, and Vladimir Nabokov responded to the violence of the wars as well as to the far-reaching social changes they brought about. (U)(3) Occasionally.

TI226-GR, Oppression and Revolution—The German Democratic Republic: This course explores oppression and revolution in the German “Democratic” Republic (GDR). (U)(3) Occasionally.

TI227, Manifestos: Persuading Unbelievers and Inciting Revolutions: The manifesto is a powerful literary genre that proposes novel ideas, and seeks to persuade non-believers and incite revolutions. We will investigate both the destructive and constructive/innovative qualities of these texts. (U)(3) Summer.

T228-SP, Cityscapes: Argentinean culture through representations of urban space: (U)(3) Occasionally.

Chinese Courses

CN101, Beginning Chinese 1: Emphasis on spoken Chinese. Development of speaking, listening, and writing skills, along with insights into Chinese culture. Regular practice in the language center. (U)(4) Annually, term varies.

CN102, Beginning Chinese 2: Emphasis on spoken Chinese. Development of speaking, listening, reading, and writing skills, along with insights into Chinese culture. Regular practice in the language center. (U)(4) Annually, term varies.

CN203, Intermediate Chinese 1: Practice in listening, speaking, reading, and writing for communication skills. Review of fundamentals. Use of the Modern Language Center.

Prerequisite: One year of college Chinese or placement by evaluation. (U)(4) Annually, term varies.

CN204, Intermediate Chinese 2: Continuing practice in listening, speaking, reading, and writing for communicative skills. Further review of fundamentals. Use of the Modern Language Center. Prerequisite: CN203, placement by evaluation or the equivalent. (U)(4) Annually, term varies.

CN300, Chinese for Oral Communication: Oral Mandarin Chinese class to improve students’ spoken language fluency. Intensive class activities include learning audio materials, watching movies, reading texts, class discussion, and presentation. Prerequisite: Two years of college Chinese or placement on the 300 level. (U)(3) Annually, term varies.

CN305, Advanced Chinese 1: Further develop students’ overall language proficiency and emphasize vocabulary building, consolidation of essential grammatical patterns, and insights into Chinese culture. Use of the language laboratory and videos. Prerequisite: Two years of college Chinese or placement on the 300 level. (U)(3) Annually, term varies.

CN306, Advanced Chinese 2: Continue to develop students’ overall language proficiency and emphasize vocabulary building, consolidation of essential grammatical patterns, and insights into Chinese culture. Use of the language laboratory and videos. Prerequisite: CN305, placement by evaluation, or the equivalent. (U)(3) Annually, term varies.

CN370, Summer Chinese Language and Culture Program: Develop students’ language proficiency and verbal skills, and consolidate grammatical patterns and insights into Chinese culture through classroom instruction and daily one-on-one tutoring and excursions in other cities. Use of the language laboratory and videos. Prerequisite: Two years of college Mandarin Chinese or placement on the 300 level. (U)(6) Occasionally.

CN401, Internship in Chinese: A faculty-supervised work experience in schools, hospitals, not-for-profits, government, media, business, or other institutions. Primary language must be Chinese. May be completed abroad or in the United States. Prerequisites: Acceptance into the internship program, completion of at least two 300-level Chinese courses, and/or permission of the department chair. (U)(1) Occasionally.

CN402, Internship in Chinese: A faculty-supervised work experience in schools, hospitals,

not-for-profits, government, media, business, or other institutions. Primary language must be Chinese. May be completed abroad or in the United States. Prerequisites: Acceptance into the internship program, completion of at least two 300-level Chinese courses, and/or permission of the department chair. (U)(2) Occasionally.

CN403, Internship in Chinese: A faculty-supervised work experience in schools, hospitals, not-for-profits, government, media, business, or other institutions. Primary language must be Chinese. May be completed abroad or in the United States. Prerequisites: Acceptance into the internship program, completion of at least two 300-level Chinese courses, and/or permission of the department chair. (U)(3) Occasionally.

CN491, Independent Study: Independent study of Chinese culture, literature, and language. (U)(1) Annually, term varies.

CN492, Independent Study: Independent study of Chinese culture, literature, and language. (U)(2) Annually, term varies.

CN493, Independent Study: Independent study of Chinese culture, literature, and language. (U)(3) Annually, term varies.

French Courses

FR101, Beginning French 1: Development of speaking, listening, reading, and writing skills, along with insights into French and Francophone cultures. Prerequisite: No previous formal French instruction. (U)(4) Annually, term varies.

FR102, Beginning French 2: Continuation of FR101. Development of speaking, listening, reading, and writing skills, along with insights into French and Francophone cultures. Prerequisite: FR101 or placement test authorization. (U)(4) Annually, term varies.

FR203, Intermediate French I: Review of basics and new grammatical structures and vocabulary. Continued practice in listening, speaking, reading, and writing to develop competence in French. Study of cultural texts. Prerequisite: FR102 or placement test authorization. (U)(3) Annually, term varies.

FR204, Intermediate French II: Continuation of FR203. Further review of basics and new grammatical structures and vocabulary. Continued practice in listening, speaking, reading, and writing to develop competence in French. Study of cultural texts. Prerequisite: FR203 or placement by evaluation or the equivalent. (U)(3) Annually, term varies.

FR300, Oral and Written Communication: Intensive work on oral and written skills through

grammar review, readings, films. Discussions, oral presentations, short essays, rewriting, work on pronunciation. Prerequisites: Two years of college French or placement on the 300 level. (U)(3) Annually, term varies.

FR316, Survey of French Civilization: Study of French civilization from its origins to the present time. Focus will be on the people, the cultural processes, and ideas that have shaped the country. Prerequisite FR300, or by permission of the instructor and department chair. (U)(3) Occasionally.

FR318, Intro to Francophone Cultures: This course is an in-depth introduction to the cultures of the Francophone world. It will introduce students to the historical background, the linguistic characteristics, the literature, music, and cinema of areas with a strong Francophone presence. Prerequisite: FR300, or by permission of the instructor and department chair. (U)(3) Occasionally.

FR320, Contemporary French Culture: Study of contemporary French culture using news media, films, interviews, online newspapers, TV programs in the French language, etc. Prerequisite: FR334 or FR342. (U)(3) Annually, term varies.

FR325, Intro to French Linguistics: Basic elements of French linguistics, phonetics, phonology, and stylistics. Prerequisite: FR334 or FR342, or permission of instructor. (U)(3) Occasionally.

FR335, France: Middle Ages to 1700: A survey of the evolution of France from the Middle Ages to 1700 through the study of literature and other cultural material. Prerequisites: FR334 or FR342. (U)(3) Occasionally.

FR340, France: 18th and 19th Century: Survey of the evolution of France in the 18th and 19th centuries through the study of literature and other cultural material. Prerequisite: FR334 or FR342, or permission of the instructor. (U)(3) Occasionally.

FR345, France and Francophone World—1900 to Present: A survey of France and the Francophone world in the 20th and 21st centuries through the study of literature and other cultural material. Prerequisites: FR310 and either FR334 or FR342 or permission of instructor. (U)(3) Occasionally.

FR401, Internship in French: A faculty-supervised work experience in schools, hospitals, not-for-profits, government, media, business, or other institutions. Primary language must be a French. May be completed abroad or in the

United States. Prerequisites: Acceptance into the internship program and permission of the department chair. (U)(1) Occasionally.

FR402, Internship in French: A faculty-supervised work experience in schools, hospitals, not-for-profits, government, media, business, or other institutions. Primary language must be a French. May be completed abroad or in the United States. Prerequisites: Acceptance into the internship program and permission of the department chair. (U)(2) Occasionally.

FR403, Internship in French: A faculty-supervised work experience in schools, hospitals, not-for-profits, government, media, business, or other institutions. Primary language must be a French. May be completed abroad or in the United States. Prerequisites: Acceptance into the internship program and permission of the department chair. (U)(3) Occasionally.

FR415, The French Renaissance: Study of the French Renaissance as the beginning of modernity. Focus on prose and poetry. Emphasis on writing, rewriting, and discussion. Also emphasizes continued development of the four language skills: listening, speaking, reading, and writing. Prerequisite: FR334 or FR342. (U/G)(3) Occasionally.

FR425, 17th-Century France: Study of 17th-century France in the context of early modernity. Focus on prose and theatre. Emphasis on writing, rewriting, and discussion. Also emphasizes continued development of listening, speaking, reading, and writing skills. Prerequisite: FR334 or FR342 or permission. (U/G)(3) Occasionally.

FR435, Representation of Women in 18th-Century French Literature: Overall view of the French Enlightenment and study of the literary works of the period. Prerequisite: FR334 or FR342. (U)(3) Occasionally.

FR450, 19th-Century France: Overall view of the French culture and literature of the 19th century. Study of the significant literary works of the period. Prerequisite: FR334 or FR342. (U)(3) Occasionally.

FR465, 20th- and 21st-Century French: Study of selected important French and Francophone novels of the 20th and 21st centuries. Lectures, reading assignments, and films. Emphasis on class discussion, writing, and rewriting. Prerequisite: FR334 or FR342. (U)(3) Occasionally.

FR475, 20th and 21st-Century French: Study of selected important French and Francophone plays of the 20th and 21st centuries. Lectures,

reading assignments, and films. Emphasis on class discussion, writing, and rewriting. Prerequisite: FR334 or FR342. (U)(3) Occasionally.

FR485, Topics in Francophone Studies: Study of the literatures and/or cultures of French-speaking countries. Use of literary texts, social documents, and movies. Emphasis on class discussion, writing, and rewriting. Course may be repeated with each different topic. Prerequisite: FR334 or FR342. (U/G)(3) Occasionally.

FR490, Seminar: Study of a selected topic in the cultures of French-speaking countries. Themes may deal with literary, social, political, and/or esthetic concerns of these countries, of one nation, or of a region. Course may be repeated with each different topic. Prerequisite: Three years of college French or the equivalent. (U/G)(3) Occasionally.

FR491, Independent Study: An opportunity for qualified students to pursue a topic of special interest. Open to majors and minors in French, by permission of the instructor and department chair. Prerequisite: Three years of college French or equivalent. (U/G)(1) Annually, term varies.

FR492, Independent Study: An opportunity for qualified students to pursue a topic of special interest. Open to majors and minors in French, by permission of the instructor and department chair. Prerequisite: Three years of college French or equivalent. (U/G)(2) Annually, term varies.

FR493, Independent Study: An opportunity for qualified students to pursue a topic of special interest. Open to majors and minors in French, by permission of the instructor and department chair. Prerequisite: Three years of college French or equivalent. (U/G)(1) Annually, term varies.

FR499, Honors Thesis. (U)(3) Annually, term varies.

German Courses

GR101, Beginning German 1: Development of speaking, listening, reading, and writing skills, along with insights into German-speaking cultures. Prerequisite: No previous formal German instruction or placement in GR101. (U)(4) Annually, term varies.

GR102, Beginning German 2: Development of speaking, listening, reading, and writing skills, along with insights into German-speaking cultures. Prerequisite: GR101 or placement in GR102. (U)(4) Annually, term varies.

GR200, German Conversation: Students will develop their oral proficiency by concentrating

on pronunciation and practical vocabulary. Extensive use of class discussion to increase accuracy and fluency. Course cannot be counted toward the major or minor and does not fulfill the language requirement. Prerequisite: One year of college German or placement in GR203. (U)(1) Fall and spring.

GR203, Intermediate German I: Review of the basic structures of German with an emphasis on active skills. Introduction to German literature through readings, film, and discussion in German. Prerequisite: One year of college German or placement in GR203. (U)(3) Annually, term varies.

GR204, Intermediate German II: Continuation of the review of the basic structures of German with an emphasis on active skills. Practice through readings, films, and discussions in German. Exploration of social, artistic, historical, and/or political topics. Prerequisite: Three semesters of college German or placement in GR204 (U)(3) Annually, term varies.

GR305, Germany Today: This course offers practice in oral German to develop accuracy and fluency through guided conversations, discussions, individual presentations, vocabulary building, and grammar review. Topics deal with contemporary German culture, society, politics, media, and business. Prerequisite: Two years of college German or placement at the 300 level. (U)(3) Annually, term varies.

GR310, German for Writing: This course offers practice in written German to develop accuracy and fluency through the analysis of various writing styles and genres, vocabulary building, and grammar review. Emphasis is on the process of writing, guided corrections, and enhancement of self-evaluation. Prerequisite: Two years of college German or placement in German on the 300 level. (U)(3) Fall.

GR311, Contemporary German Authors: A course providing reading and discussion of selected texts by post-war authors. Oral and written literary analysis. Prerequisite: Two years of college German or placement in 300-level German. (U)(3) Annually, term varies.

GR315, German for Business: This course offers an introduction to the structures, institutions, procedures, and terminology of the German business world. Current business news is explored through a variety of media, such as print, television, and internet. Prerequisite: Two years of college German or placement on the 300 level. (U)(3) Spring.

GR320, Contemporary German Authors:

An introduction to literary studies in German through close readings and critical analysis of selected texts by post-war authors such as Grass, Durrenmatt, and Wolf. Prerequisite: Two years of college German or placement at the 300 level. (U)(3) Spring.

GR322, The German Play: A seminar in textual and performance studies in which students learn about all aspects of theatrical production from costume design, props, lighting, sound design, and stage management to directing and acting. The course will focus on a single dramatic work studied in depth, culminating in the staging of the play. Prerequisite: Two years of college German or placement at the 300 level. (U)(3) Fall and spring.

GR330, Children's Literature: This course in literature for and about children and adolescents offers an introduction to German culture and history from 1800 to the present. Issues considered include social inequality, gender, family, education, and growing up in authoritarian regimes. Prerequisite: Two years of college German or placement at the 300 level. (U)(3) Fall and spring.

GR335, Germany Studies I: Tradition and Innovation: A survey of the evolution of Germany from the Middle Ages to the Enlightenment through the study of literature, art, and other cultural material. Prerequisite: Two years of college German or placement at the 300-level. (U)(3) Occasionally.

GR340, German Studies II: Nation and Identity: A survey of the evolution of Germany from Storm and Stress to Realism through the study of literature, art, and other cultural material. Prerequisite: Two years of college German or placement at the 300 level. (U)(3) Occasionally.

GR341, Romanticism to the Modern Period: Representative works of authors and artists of the 19th century up to Nietzsche's time. Prerequisite: Two years of college German or placement on the 300 level. (U)(3) Occasionally.

GR342, German Studies III: Modernity and Tyranny: A survey of the evolution of Germany from Naturalism to the present through the study of literature, art, and other cultural material. Prerequisite: Two years of college German or placement on the 300 level. (U)(3) Occasionally.

GR351, German Civilization: Investigation of German literature and culture in a historical context. Course may focus on a specific theme or time period. Prerequisite: Two years of college

German or placement in German at the 300 level. (U)(3) Occasionally.

GR360, German Film: Analysis and discussion of German films within their cultural, historical, political, and social contexts. Prerequisite: Two years of college German or equivalent or placement on the 300 level (U)(3) Occasionally.

GR390, Topics in Literature and Culture: Study of a selected topic in German literature or culture. Course may be repeated with each different topic. Prerequisite: Two years of college German or placement at the 300 level. (U)(3) Occasionally.

GR401, Internship in German: A faculty-supervised work experience in schools, hospitals, not-for-profits, government, media, business, or other institutions. Primary language must be a German. May be completed abroad or in the United States. Prerequisites: Acceptance into the internship program and permission of the department chair. (U)(1) Occasionally.

GR402, Internship in German: A faculty-supervised work experience in schools, hospitals, not-for-profits, government, media, business, or other institutions. Primary language must be a German. May be completed abroad or in the United States. Prerequisites: Acceptance into the internship program and permission of the department chair. (U)(2) Occasionally.

GR403, Internship in German: A faculty-supervised work experience in schools, hospitals, not-for-profits, government, media, business, or other institutions. Primary language must be a German. May be completed abroad or in the United States. Prerequisites: Acceptance into the internship program and permission of the department chair. (U/G)(3) Occasionally.

GR430, German Drama after 1945: An in-depth study of selected dramas by authors such as Brecht, Borchert, Durrenmatt, and Jelinek. Discussion in German. Prerequisite: Three years of college German or equivalent. (U)(3) Occasionally.

GR467, Topics in German Studies: Age of Goethe: Study of select writers, genres, or themes within the context of German culture from Enlightenment to Romanticism. Topics may include the Faust theme in literature, art, and music, the rebel and the genius, Goethe and Schiller. Prerequisite: Three years of college German or equivalent. (U)(3) Occasionally.

GR470, Topics in German Studies: The 19th Century: Study of select writers, genres, or themes within the context of 19th-century

German culture. Topics may include the German nation, fairy tales and fantastical literature, the novella. Prerequisite: Three years of college German or equivalent. (U)(3) Occasionally.

GR475, Topics in German Studies: The 20th Century: Study of select writers, genres, or themes within the context of the 20th-century German culture. Topics may include fin-de-siecle literature, Kafka, GDR literature, multicultural Germany. Prerequisite: Three years of college German or equivalent. (U)(3) Occasionally.

GR490, Seminar: Investigation of a selected topic in German such as a genre, time period, writer, artist, or historical figure in its historical and social context. Course may be repeated with each different topic. Prerequisite: Three years of college German or equivalent. (U/G)(3) Occasionally.

GR491, Independent Study: An opportunity for qualified students to pursue a topic of special interest. Open to majors and minors in German, by permission of the instructor and department chair. Prerequisite: Three years of college German or equivalent. (U/G)(1) Annually, term varies.

GR492, Independent Study: An opportunity for qualified students to pursue a topic of special interest. Open to majors and minors in German, by permission of the instructor and department chair. Prerequisite: Three years of college German or equivalent. (U/G)(2) Annually, term varies.

GR493, Independent Study: An opportunity for qualified students to pursue a topic of special interest. Open to majors and minors in German, by permission of the instructor and department chair. Prerequisite: Three years of college German or equivalent. (U/G)(3) Annually, term varies.

GR499, Honors Thesis. (U)(3) Annually, term varies.

Spanish Courses

SP101, Beginning Spanish I: The first course in Spanish. Focus is on developing the four skills of language acquisition: listening, speaking, reading, and writing production. Although learning grammar is an important part of the process, it will be used around everyday situations and cultural topics. Prerequisites: No previous Spanish instruction. Permission granted upon personal interview with the department chair. (U)(4) Annually, term varies.

SP102, Beginning Spanish II: This is the second course in the basic Spanish language

sequence. The course continues to develop basic communication skills in listening, speaking, reading, and writing at a more complex level. Prerequisite: SP101 or placement test authorization. (U)(4) Annually, term varies.

SP201, Spanish Conversation and

Pronunciation: Development of oral proficiency. Concentration on pronunciation and practical vocabulary. Review of basic structures. Practice of speaking skills in class discussions. Use of audiovisual materials to increase accuracy and fluency. Prerequisite: One year of college Spanish or placement test authorization. (U)(3) Annually, term varies.

SP203, Intermediate Spanish I: First course in intermediate Spanish. Review of fundamentals, develop intermediate skills in reading, writing, speaking, and listening; building communicative competence; and enhancing social and cultural awareness of Spanish-speaking world. Prerequisite: One year of college Spanish or SP102, or placement exam results. (U)(3) Annually, term varies.

SP204, Intermediate Spanish II: Second course in intermediate Spanish. Further review of fundamentals; continue developing competence; and enhance social and cultural awareness of the Spanish-speaking world. Prerequisite: SP203, or placement exam results. (U)(3) Annually, term varies.

SP300, Grammar in Context: Study of grammatical structures to master language at intermediate/advanced level. Students review, reinforce, and practice grammar within contextual framework so as to build vocabulary, read cultural texts, and create written material to see the interaction of language skills. Prerequisite: SP204 or equivalent course or placement test at 300 level. (U)(3) Annually, term varies.

SP305, Spanish for Oral Communication: Practice in oral Spanish to increase fluency through activities and discussion. Intensive controlled conversation and the facilitation of debates and group discussions in relation to audiovisual materials and cultural readings. Prerequisite: SP204 or equivalent course or placement on the 300 level. (U)(3) Annually, term varies.

SP310, Spanish for Written Communication: Writing in Spanish; facilitate expression of ideas; review of grammatical structures. Analysis: writing styles and writing process; guided correction to enhance self-evaluation and improvement of writing skills; developing a good

thesis; adapting content to reader. Prerequisite: SP204 or equivalent course or placement on the 300 level. (U)(3) Annually, term varies.

SP315, Spanish for Business: Introduction to the Hispanic business world and examination of its structures, institutions, procedures, and terminology. Prerequisite: Two years of college Spanish or placement on the 300 level. (U)(3) Occasionally.

SP320S, Service Learning in Spanish: Increase students' fluency in Spanish; encourage them to frame their community experience in meaningful ways. Class components: supervised volunteer tutoring (24 hours/semester) and weekly class meetings to discuss Latino immigration. Writing-intensive. Prerequisites: SP204 or equivalent course or placement on 300-level in Spanish. (U)(3) Annually, term varies.

SP325, Intro to Hispanic Linguistics: Overview of the history, phonetics, syntax, acquisition, and language variation of the Spanish language (theories, analysis, and application). Prerequisite: One 300-level skills course in Spanish. (U)(3) Annually, term varies.

SP330, Themes in Hispanic Studies: Selected themes within the literature and culture of one or more Spanish-speaking countries. Course may be repeated with each different topic. Prerequisite: One 300-level skills course in Spanish. (U)(3) Occasionally.

SP335, Spain: Middle Ages to 1700: Use of selected reading and audiovisual materials to study the history, literature, and arts of Spain from the Middle Ages through the 17th century. Prerequisite: One 300-level skills course in Spanish. (U)(3) Occasionally.

SP340, Spain: 1700 to Present: Use of selected reading and audiovisual materials to study the history, literature, and arts of Spain from the 18th century to the present. Prerequisite: One 300-level skills course in Spanish. (U)(3) Occasionally.

SP345, Analysis of Literary Genres: Panoramic view of major and minor literary works of various genres across different time periods and geographical areas of the Hispanic world. Prerequisite: One 300-level skills course in Spanish. (U)(3) Occasionally.

SP350, Spanish American Culture: Mexico, Central America, Caribbean: Geographically oriented approach to the study of the historical events, literary and cultural artifacts, and individual figures that have shaped and defined the countries of Spanish Mexico and selected

countries from Central America and the Caribbean. Prerequisite: One 300-level skills course in Spanish. (U)(3) Occasionally.

SP355, Spanish American Culture: The study of historical events, and the literary and cultural productions of the Southern Cone and Andean countries. Prerequisite: One 300-level skills course in Spanish. (U)(3) Occasionally.

SP360, Hispanic Film: Approach to Hispanic cultures through film and visual representations. Themes for analyses, discussions, and papers vary according to films chosen. Prerequisite: One 300-level skills course in Spanish. (U)(3) Occasionally.

SP365, Hispanic Short Story: Study of selected stories by Spanish and Latin American authors. Prerequisite: One 300-level skills course in Spanish. (U)(3) Occasionally.

SP370, Topics: Contemporary Hispanic Societies: A study of the contemporary societies of one or more countries of Latin America, of Spain, and/or the Latino society of the United States. This course may be repeated with each different area studied. Prerequisite: One 300-level skills course in Spanish. (U)(3) Occasionally.

SP375, Spanish Pronunciation: This course introduces the sounds of Spanish in order to achieve a near native-like pronunciation. It covers theory and practice. Prerequisite: One 300-level skills course in Spanish. (U)(3) Annually, term varies.

SP380, Structure of Spanish: The study of Spanish words and their internal structure as well as an overview of perspectives gained from the X bar theory to study Spanish word order, semantic roles, constituents, clause structure, grammaticality judgements, and so on. Prerequisites: One 300-level skills course in Spanish. (U)(3) Occasionally.

SP385, Intro to Varieties of Spanish: We will study the divergent linguistic features of the largest regions of Spain and Latin America (pronunciation, grammar, idioms, slang, linguistic and cultural stereotypes, etc.). Prerequisite: One 300-level skills course in Spanish. (U)(3) Occasionally.

SP401, Internship in Spanish: A faculty-supervised work experience in schools, hospitals, not-for-profits, government, media, business, or other institutions. Primary language must be a Spanish. May be completed abroad or in the United States. Prerequisites: Acceptance into the internship program and permission of the department chair. (U)(1) Occasionally.

SP402, Internship in Spanish: A faculty-supervised work experience in schools, hospitals, not-for-profits, government, media, business, or other institutions. Primary language must be a Spanish. May be completed abroad or in the United States. Prerequisites: Acceptance into the internship program and permission of the department chair. (U)(2) Occasionally.

SP403, Internship in Spanish: A faculty-supervised work experience in schools, hospitals, not-for-profits, government, media, business, or other institutions. Primary language must be a Spanish. May be completed abroad or in the United States. Prerequisites: Acceptance into the internship program and permission of the department chair. (U/G)(3) Occasionally.

SP405, Spanish Sociolinguistics: This course is an introduction to sociolinguistic variation in the Hispanic world. We will study some of the factors of linguistic maintenance and shift in Spanish (the role of gender, age, education, attitudes, etc.). Prerequisites: Two 300-level courses in Spanish; one must be upper level (SP325 or above). (U/G)(3) Occasionally.

SP410, Topics—Communication Skills in Spanish: Practice in communication in Spanish. Topics vary. Course may be repeated with a different topic. Prerequisite: Two 300-level courses in Spanish; one must be upper level (SP325 or above). (U/G)(3) Occasionally.

SP415, Spanish in the USA: We will study the history, development, and current state of Spanish and its speakers in the United States, including the linguistic characteristics of the Spanish varieties spoken. Prerequisites: Two 300-level courses in Spanish; one must be upper level (SP325 or above). (U/G)(3) Occasionally.

SP420, Topics—Golden Age of Spain: Exploration of the 16th and 17th centuries through literature, history, and/or artistic expression. Course may be repeated with each different topic. Prerequisites: Two 300-level courses in Spanish; one must be upper level (SP325 or above). (U/G)(3) Occasionally.

SP425, Phonetics of the Spanish Language: Introduction to the sounds of Spanish, native Speaker pronunciation, recognition of Spanish main dialects, and Spanish-English phonetic contrasts. Prerequisites: Two 300-level courses in Spanish; one must be upper level (SP325 or above). (U/G)(3) Occasionally.

SP430, Topics—18th and 19th Century Spain: Study of historical, literary, and/or artistic aspects of the period. Course may be repeated with each different topic. Prerequisites: Two

300-level courses in Spanish; one must be upper level (SP325 or above). (U/G)(3) Occasionally.

SP435, Spanish Dialectology: The geography of Spanish in terms of origin, change, dialects, society, contact with other languages, slang, etc. Prerequisites: Two 300-level Spanish courses; one must be upper level (SP325 or above). (U/G)(3) Occasionally.

SP440, Topics—Contemporary Spanish Studies: Analysis of aspects of 20th- and 21st-century Spain through study of literary, historical, artistic works, and/or the media, offering such topics as the transition from dictatorship to democracy or the roles of women and men in contemporary society. Prerequisites: Two 300-level courses in Spanish; one must be upper level (SP325 or above). (U/G)(3) Occasionally.

SP445, Topics in Hispanic Linguistics: Study of a selected topic in the field of linguistics (the study of language) from the perspective of Spanish. Themes may deal with phonetics, syntax, morphology, history, semantics, pragmatics, sociolinguistics, Spanish in context, etc. Prerequisites: Two 300-level Spanish courses; one must be upper level (SP325 or above). (U/G)(3) Occasionally.

SP450, Topics—Spanish-American Studies: Literary, historical, social, and/or artistic aspects of Spanish-American culture and civilization. Topics will focus on a historical period, literary genre, social theme, or other cultural phenomenon. Course may be repeated with each different topic. Prerequisites: Two 300-level courses in Spanish; one must be upper level (SP325 or above). (U/G)(3) Occasionally.

SP455, Spanish Second Language Acquisition: Overview of second-language acquisition theories with discussion of empirical studies on the acquisition of Spanish. Practice on research design and the analysis of oral and written production of learners of Spanish. Prerequisites: Two 300-level courses in Spanish; one must be upper level (SP325 or above). (U/G)(3) Annually, term varies.

SP460, Topics—20th Century Spanish-American Studies: Emphasis on the contemporary cultures of the nations of Spanish America. Through the use of literary texts, historical and social documents, movies, and other audiovisual media, topics will focus on the dynamics of this rapidly developing cultural region. Course may be repeated with each different topic. Prerequisites: Two 300-level courses in Spanish; one must be upper level (SP325 or above). (U/G)(3) Occasionally.

SP485, History of the Spanish Language: In this course we will study the development of Spanish from its Latin roots to present, including historical, social, cultural, and linguistic events. Prerequisites: Two 300-level Spanish courses; one must be upper level (SP325 or above). (U)(3) Occasionally.

SP490, Seminar: Study of a selected topic in the cultures of Spain and/or Latin America. Themes may deal with literary, social, political, and/or aesthetic concerns of these countries, one nation, or a region. Prerequisites: Two 300-level courses in Spanish; one must be upper level (SP325 or above). (U/G)(3) Occasionally.

SP491, Independent Study: An opportunity for qualified students to pursue a topic of special interest. Open to majors and minors in Spanish, by permission of the instructor and department chair. Prerequisites: Two 300-level courses in Spanish; one must be upper level (SP325 or above). (U/G)(1) Annually, term varies.

SP492, Independent Study: An opportunity for qualified students to pursue a topic of special interest. Open to majors and minors in Spanish, by permission of the instructor and department chair. Prerequisites: Two 300-level courses in Spanish; one must be upper level (SP325 or above). (U/G)(2) Fall, spring, and summer.

SP493, Independent Study: An opportunity for qualified students to pursue a topic of special interest. Open to majors and minors in Spanish, by permission of the instructor and department chair. Prerequisites: Two 300-level courses in Spanish; one must be upper level (SP325 or above). (U/G)(3) Fall, spring, and summer.

SP499, Honors Thesis: As needed. (U/G)(3) Fall, spring, and summer.

Neuroscience Minor

Administration

Tara T. Lineweaver, PhD, Program Director

Program Website

www.butler.edu/las/neuroscience

Neuroscience, an interdisciplinary approach to understanding the nervous system and its impact on behavior, cognition, and emotion, is a relatively new and rapidly expanding scientific field. Neuroscientific research describes the normal functioning of the nervous system, examines how the nervous system develops across the lifespan, and investigates the consequences of and potential interventions for neurological dysfunction due to abnormal development, disease, or injury. However, the implications of neuroscience stretch well beyond

this scope and provide both a cornerstone and important tools for understanding all human behavior. The neuroscience minor at Butler University introduces students to an interdisciplinary viewpoint regarding the science as well as the philosophy of the mind. Students from any major may elect to complete a neuroscience minor by taking courses in the fields of biological science, psychology, and philosophy.

Requirements for the Minor

The minor consists of 21 hours, including:

Biology: 12 hours

- BI210, Genetics—Fundamentals
- BI220, Cellular and Molecular Biology—Fundamentals
- BI460, Cellular and Molecular Neurobiology

Psychology: 6 hours

- PS235, Biological Bases of Behavior
- PS412, Advanced Applied Neuroscience

Philosophy: 3 hours

- PL346, Philosophy of Mind

Peace and Conflict Studies

Administration

Craig W. Auchter, PhD, Program Director

Program Website

www.butler.edu/peace-conflict

The Peace and Conflict Studies Program seeks to promote a critical understanding of the nature and dynamics of conflict, violence, and the conditions and practice of peace. It provides a structured program of study for students who wish to make issues of violence and conflict (interpersonal, intergroup, and interstate), social justice, human rights, ecological integrity, and peace at multiple levels more central to their university education. Contemporary peace studies is an arena of interdisciplinary research, study, dialogue, reflection, and action that is supported by a broad disciplinary base drawing on all of the social sciences and courses in the arts and humanities, sciences, education, and business. Through multi- and interdisciplinary study and practice, students in peace studies prepare for graduate study and a wide variety of careers in policy analysis, government, nongovernmental organizations, journalism, teaching, law, and business.

Peace and Conflict Studies Student Learning Objectives

- Acquire a complex understanding of the nature and origins of violence, its dynamics, and different manifestations and modes of expression
- Better understand why conflict occurs, when and how conflicts become violent, and constructive methods of approaching and processing distinct types of conflicts that occur along a continuum from interpersonal to global settings
- Critically evaluate and devise strategies for peace through reflection on ethical, religious, philosophical, and cultural approaches to peace, the work of leading thinkers and activists in the field, and public policy
- Develop knowledge, analytical skills, and practical training through analysis of theories and theoretical models, case studies, language and value systems, and historical precedents and trends; service learning; practical training in conflict mediation skills; selected internships; and study-abroad experiences.

Degree Programs

- Peace and Conflict Studies (BA)
- Minor in Peace and Conflict Studies

Requirements for the Major

The major consists of 36 hours of courses, including six hours of internship or service learning. The following courses (21 hours) are required:

- PACS/PO102, Introduction to Peace and Conflict Studies
- PACS/PO220, Community Mediation
- PACS/PO322, International Conflict and Peace Building
- One theory or methods class in a relevant discipline (consult with PACS advisor)*
- One 400-level class or thesis (consult with PACS advisor)**
- Internship (6 hours): Internship requirements are fulfilled at locations in Indianapolis such as Exodus Refugee Center, Peace Learning Center, the Immigrant Welcome Center, Earth Charter Indiana, the Neighborhood Christian Legal Clinic, the Julian Center, or through SP320S, Service Learning in Spanish (up to 3 hours). Students may also fulfill this requirement through Washington, DC, semester internships or as a component of study abroad.

* Students may fulfill this requirement with a research methods or theory class in, for example, political science, sociology, anthropology, or rhetorical criticism.

** Students may opt to take the PO490 Senior Seminar as their capstone course or another 400-level seminar class in anthropology or international studies that addresses issues of conflict, peace, and justice.

Fifteen hours of electives are required, at least 12 of which must be taken at the 300 level or above; three hours may be taken at the 200 level. Elective options are listed below and in the schedule of classes each semester. Relevant courses taken during study abroad may be counted toward the major with permission of the program director.

Requirements for the Minor

The minor consists of 18 hours of courses, including the following required courses (12 hours):

- PACS/PO102, Introduction to Peace Studies
- One of either PACS/PO220, Community Mediation, or PACS/PO322, International Conflict and Peacebuilding
- Internship (see above, Requirements for the Major, about locations and options, which are equivalent to the major)
- PACS/PO490, Senior Seminar: Special Topics in Peace Studies (such as Cultures of Peace in Latin America; Youth, Violence, and Peace; War in Iraq)

Six hours of electives are required. Elective options are listed below and in the schedule of classes each semester. Relevant courses taken during study abroad may be counted toward the minor with permission of the program director.

Electives

Examples of courses students have taken for elective credit in the past include the following:

History and Anthropology

- AN320, Gender and Sexuality in Globalization
- AN326, Youth Conflict Global Cinema
- AN345, Conflict Resolution through Arts
- AN368, Coming of Age in the Middle East
- AN380, Selected Topics: Trespassing: An Anthropology of Our Segmented Lives
- HST205, Questions in History: The Great War, 1914–1918
- HST305, Topics in History: The Cinema of War
- HST305, Topics in History: 1968
- HST327, History of Human Rights

- HST335, The Civil War
- HST338, The Era of Jim and Jane Crow
- HST353, The American Empire
- HST395, War and Peace in the Middle Ages
- HST401, Seminar in History: Radical Histories, Radical Politics

Modern Languages, Literatures & Cultures

- SP320S, Service Learning in Spanish

Philosophy and Religion

- RL354, Islam: Religion, Culture, Society
- RL363, Religion, Politics, and Conflict in South Asia
- RL391, RL392, Seminar on Religion and World
- PL364, Ethics and International Relations

Political Science

- PO141, Intro International Politics
- PO220, Community Mediation
- PO230, Activism
- PO322, International Conflict and Peace Building
- PO340, The Earth Charter
- PO350, African Politics
- PO351, The Politics of Gender and Sexuality in Africa
- PO355, U.S. Foreign Policy
- PO356, Israel-Palestine Conflict
- PO357, Youth and Conflict
- PO360, Political Regimes in Latin America
- PO362, Popular Participation in Latin America
- PO372, Role of Protest in U.S. Politics
- PO380, Topics in Political Science: Understanding Conflict—Northern Ireland
- PO380, Topics in Political Science: Environmental Justice
- PO380, Topics in Political Science: Humanitarianism—Theory, Politics

Sociology and Criminology

- SO321, Crime and Society
- SO339, Violence, Media, and Culture
- SO349, Social Movements
- SO355, International Crime

Communications

- CCM354, Gender and Communication
- JR417, International Communication
- JR418, Gender and Media: Global Views
- ORG253, Interpersonal Communication

Other

- FL390, Seminar: Fall of the Wall
- GWS201/SW232-GWS, Intersections of Identity
- GWS202/SW223-GWS, Resistance for Social Change
- IS390, The UN and Other International Organizations

- IS410, The Global Society
- ST390, Topics: Environmental Conflict
- SW240-PO, Gender and Generations: War and Peace
- TI240-PL, Ethics of War and Peace
- TI255-PO, The Politics of Alice Walker
- TI261-ST, Science and Society: Hunger and Obesity
- TI262S, Self and Service

Peace and Conflict Studies Courses

PACS401, Student Apprenticeship: Students work with faculty mentors on their teaching or their research. In teaching apprenticeships, students work with the professor in the development and discussion of the classroom experience. In research apprenticeships, students work with a faculty mentor on his or her current research. Prerequisites: Two PACS courses, submittal of an application, and permission of the PACS Program Director. (U)(3) Fall, spring, and summer.

PACS403, Internship: Offers the qualified student the opportunity for supervised work experience in a setting pertinent to peace and conflict studies. Prerequisites: Permission of the PACS Director. (U)(3) Fall, spring, and summer.

PACS406, Internship: Offers the qualified student the opportunity for supervised work experience in a setting pertinent to peace and conflict studies. Prerequisites: Permission of the PACS Director. (U)(6) Fall, spring, and summer.

Philosophy and Religion

Administration

Chad Bauman, PhD, Department Chair

Professors

Allan Boesak, DTh (visiting); Katharina Dulceit, PhD; Stuart Glennan, PhD; James F. McGrath, PhD; Paul Valliere, PhD; Harry van der Linden, PhD

Associate Professors

Chad Bauman, PhD; Tiberiu Popa, PhD

Instructor

Brent Hege, PhD

Department Website

www.butler.edu/philosophy-religion

Philosophy

Why Study Philosophy?

Philosophy can help you hone some very practical skills. As a philosopher, you learn to distinguish between sound reasoning and empty rhetoric. Philosophy majors learn how to communicate clearly both in speech and in writing. Philosophy helps you to think carefully

about ethical decisions. Collectively, these are skills that will help you in future graduate and professional education. They will also help you to live your life well, and what could be a more practical skill than that?

Philosophy majors regularly outscore other majors on standardized tests such as the LSAT and MCAT, because they do equally well on both the verbal and analytic/quantitative sections. Philosophy is the only liberal arts major that specifically teaches both verbal and logic skills. In addition, the most basic assumptions in law, the sciences, and other disciplines are studied not in those disciplines but in the philosophy of law, philosophy of science, etc.

Why Study Philosophy at Butler?

Our philosophy classes are fairly small, which further encourages students to participate in class discussion and allows the faculty to devote considerable attention to each of our students. The enrollment limit in our introductory classes is generally 25, and the number of students enrolled in our upper-level classes is roughly between 10 and 20. Professors teach all courses; there are no teaching assistants at Butler. Many students engage in independent study and write honors theses under the supervision of professors. Additional learning opportunities include the Philosophy Club, which meets regularly for discussion, film viewing, speakers, and social activities. The reasoning skills of our majors are valued by graduate and professional schools as well as by employers. For example, a growing number of our majors have been accepted into reputable medical schools and prestigious law schools.

Philosophy Student Learning Outcomes

Students majoring in philosophy at Butler University will learn about a wide range of philosophical ideas and outlooks, and will become acquainted with some of the most influential thinkers in Western philosophy. Besides exploring fundamental questions pertaining to knowledge and reality, students will be able to discern and respond to philosophical issues that arise in areas as diverse as religion, science, politics, the arts, and the law. While critical thinking is encouraged and emphasized throughout the liberal arts, it is especially at home in philosophy; our majors are able to read and write clearly, to critically evaluate evidence and arguments, and to determine the quality of their sources of information.

Philosophical training helps deepen our students' reflection on issues in the here and

now. Our professors encourage engagement in the community, including internships or research projects in which students' work can inform and be informed by their philosophical study.

More generally, philosophy majors' ability to examine and question their own and others' values and convictions puts them in a position to make wise choices that will affect the quality and course of their lives and those of the people with whom they interact.

Degree Programs

- Major in Philosophy (BA)
- Combined Major in Philosophy and Religion (BA)
- Combined Major in Philosophy and Psychology (BA)
- Minor in Ethics
- Minor in Philosophy

Requirements for the Major

One course in logic: PL310, Logic, or any course so designated

Two courses in history sequence:

- PL311, History of Ancient Philosophy
- PL313, History of Modern Philosophy

One course in analytic philosophy:

- PL320, Theory of Knowledge
- PL323, Introduction to Analytic Philosophy
- PL343, Philosophy of Science
- PL346, Philosophy of Mind
- Or any course designated analytic philosophy

One course in value theory (normative philosophy):

- PL345, Contemporary Social and Political Philosophy
- PL360, Ethics
- Or any course designated value theory

Two offerings (six hours) of PL410, Seminar in Philosophy. Students may request a substitute for three hours of this seminar requirement if PL410 is offered when they are studying abroad. Students may also substitute PL499, Honors Thesis, for three hours of PL410.

Twelve hours of additional philosophy courses will be taken, for a total of 33 hours. No more than 12 hours of 100- or 200-level courses may be applied to the 33 hours required for the major.

Requirements for the Combined Philosophy and Religion Major

The major requires 42 hours. Detailed requirements are posted at

www.butler.edu/philosophy-religion or can be obtained at the departmental office.

Requirements for the Combined Philosophy and Psychology Major

The major requires 51 hours.

Detailed requirements are posted at www.butler.edu/philosophy-religion or can be obtained at the departmental office.

Requirements for the Minor

The minor requires 18 hours in philosophy, which must include the philosophy seminar (PL410) plus six additional hours at the 300 or 400 level. Minors will be strongly advised to create a suitable package of courses in consultation with a philosophy professor appointed by the chair.

Requirements for the Ethics Minor

The minor requires 18 hours, 12 of which should be philosophy courses and nine of which should be at the 300 or 400 level. Specifically:

- A foundational philosophy course in ethics covering basic moral theories and concepts (3 hours)
- Two additional philosophy courses to be chosen from a wide variety of courses in normative philosophy (6 hours)
- A course in applied ethics showing how moral deliberation is pivotal to some specific profession or field of human activity (3 hours)
- Two electives, to be selected from philosophy courses or courses with an ethical focus from other disciplines (6 hours)

For details, contact program director Harry van der Linden or visit www.butler.edu/philosophy-religion.

Core Courses Offered by Philosophy

AR231-PL, Principles of Reasoning: A survey of principles of reasoning used in a variety of disciplines, including philosophy, mathematics, statistics, the natural and social sciences, and law. Attention also will be paid to how to recognize and avoid fallacies. (U)(3) Fall and spring.

TI240-PL, Ethics of War and Peace: This course will focus on two normative approaches to war, just war theory and pacifism. We will first examine how soldiers learn to kill and how killing impacts them psychologically and morally. Next, we will explore just-war principles for justly starting and executing war on the basis of case studies, such as the terror bombing

in the Second World War, the Gulf War, the Kosovo intervention, the Afghanistan war, and the second Iraq War. Special attention will be paid to humanitarian intervention, terrorism, and the doctrine of preventive war. During the final weeks of the semester we will discuss the philosophy of nonviolence and antiwar pacifism. (U)(3) Occasionally.

TI241-PL, Classics of Social and Political Thought: A critical study of major texts of the history of Western social and political thought, such as Plato's *Republic*, Aristotle's *Politics*, Machiavelli's *The Prince*, Hobbes' *Leviathan*, and Marx's *Communist Manifesto*. Attention will be given to both the historical and contemporary relevance of the texts. (U)(3) Occasionally.

TI242-PL, Marginalized in America: Gender at the Intersection of Race and Class: This course introduces the student to the philosophical method and skills of thinking out problems and issues that confront women in contemporary American society, viewed from the intersection of gender, race, and class. (U)(3) Fall and spring.

TI243-PL, Knowledge and Reality: Fundamental philosophical questions about knowledge and reality will be studied through the analysis of classical and contemporary texts. Topics may include skepticism, the relationship between faith and reason, the nature of mind, free will, the nature and existence of the external world, and the nature and existence of God. (U)(3) Fall and spring.

TI244-PL, Ethics, The Good Life, and Society: Fundamental philosophical questions about right conduct, virtues and vices, the good life, and social policy will be examined on the basis of classical and contemporary texts. Topics include issues of personal and social ethics, such as forgiveness, tolerance, and hate speech, abortion, animal rights, and world poverty. Theories of justice, human rights, and meta-ethical topics may also be covered. (U)(3) Fall and spring.

Philosophy Courses

PL245, Classics of Social and Political Philosophy: A critical study of major texts of the history of Western social and political thought, such as Plato's *Republic*, Aristotle's *Politics*, Machiavelli's *The Prince*, Hobbes' *Leviathan*, and Marx's *Communist Manifesto*. Attention will be given to both the historical and contemporary relevance of the texts. (U)(3) Occasionally.

PL310, Symbolic Logic: An introduction to symbolic logic. Topics will include systems for

proving logical propositions, the interpretation of symbolic systems, and the relationship between symbolic and natural languages. Consideration will be given to the applications of symbolical logic to problems in philosophy, mathematics, computer science, and the natural sciences. (U)(3) Occasionally.

PL311, History of Ancient Philosophy: A study of important figures of ancient philosophy, with particular emphasis on Plato and Aristotle. Prerequisite: One philosophy course or permission of instructor. (U/G)(3) Occasionally.

PL313, History of Modern Philosophy: A study of important figures of modern philosophy, including Descartes, Hume, and Kant. Prerequisite: One philosophy course or permission of instructor. (U/G)(3) Occasionally.

PL339, Philosophy and Literature: This course will explore philosophical problems (ethical dilemmas, self and society, the nature of time, the idea of God, etc.) as they are formulated or suggested in texts belonging to various literary genres. A segment of this course will also analyze the nature of literature itself from a philosophical perspective. (U)(3) Occasionally.

PL340, Philosophy of Art: A study of some of the major topics in the philosophy of art, including the essential nature of artistic representation, the problems entailed by aesthetic perception, and the relation between interpretation and the artist's intention. (U)(3) Occasionally.

PL342, Philosophy of Religion: A study of the logic and function of religious language with special reference to the problem of religious knowledge and the validity of religious claims. Prerequisite: One philosophy course or sophomore standing. (U/G)(3) Occasionally.

PL343, Philosophy of Science: An analysis of some philosophical questions about the natural sciences, including the problem of distinguishing science from pseudoscience, the nature of scientific explanation, the structure and confirmation of scientific theories, scientific revolutions, and the relationship between science and reality. Prerequisite: One philosophy course or permission of instructor. (U/G)(3) Occasionally.

PL344, Philosophy of Law: Consideration of general theories of law and justice; nature of judicial reasoning; topics such as relation of law and morality, punishment, legal rights, and legal liabilities. Prerequisite: One philosophy course or sophomore standing. (U/G)(3) Occasionally.

PL345, Contemporary Social and Political

Philosophy: A critical study of major contemporary social and political philosophies, such as welfare liberalism, libertarianism, communitarianism, democratic socialism, and feminism. Topics include economic justice within the state, global justice, rights, equality, the family, and workplace democracy. Prerequisite: One philosophy course or permission of instructor. (U/G)(3) Occasionally.

PL346, Philosophy of Mind: A study of philosophical questions concerning the mind: the nature of mind, the mind-body problem, the problem of free will, and methodological approaches to the study of mind. Discussion of the power and limits of contemporary cognitive science. Prerequisite: One philosophy course or permission of instructor. (U/G)(3) Occasionally.

PL347, Existentialism: A study of existentialism, one of the most important philosophical movements of the 20th century, focusing on the philosophical essays, novels, and plays of Jean-Paul Sartre, Albert Camus, and Simone de Beauvoir. Prerequisite: One philosophy course or permission of instructor. (U/G)(3) Occasionally.

PL348, Philosophy of Feminism: A study of cultural values, social practices, and policies that shape women's lives, and the philosophical responses to these. Topics include the workplace, the legal system, pornography, art and popular culture, abortion, reproductive rights, sexual practice, alternative families, militarism, and ecofeminism. Prerequisite: One philosophy course or one Gender, Women, and Sexuality Studies course. (U/G)(3) Occasionally.

PL349, Philosophy of Biology: A study of philosophical problems in biology. The course explores both theoretical problems within biology, like the evolution of altruism and problems of taxonomy, and philosophical problems that are influenced by biological theory, including the nature of morality and the status of religious belief. Prerequisite: BI201 or permission of instructor. (U/G)(3) Occasionally.

PL360, Ethics: An examination of the fundamental concepts and problems of morality, facts and values, duty and self-interest, and the logic and justification of moral judgments. Attention to major figures in history of ethical theory such as Aristotle, Butler, Kant, and Mill. Prerequisite: One philosophy course or permission of instructor. (U/G)(3) Occasionally.

PL363, Biomedical Ethics: A study of fundamental ethical problems in medical

practice, health policy, and biomedical research. Topics include patients' rights and professional responsibilities, abortion, physician-assisted suicide, surrogate motherhood, justice in the allocation of medical resources, human genetics, and experimentation on human subjects and animals. Prerequisite: One philosophy course or sophomore standing. (U/G)(3) Annually, term varies.

PL364, Ethics and Int. Relations: A study of foundational and contemporary writings on the ethics of international relations. Key concepts and issues include realism, nationalism, cosmopolitanism, sovereignty, global poverty, immigration, humanitarian intervention, and global warming. Prerequisites: Sophomore standing; IS101 or one PL course. (U)(3) Occasionally.

PL375, Topics in Philosophy: Treats a specific subject area of philosophy that is not the major subject of a regularly scheduled course. (U/G)(3) Occasionally.

PL380, Topics of Ethics: Treats a topic in normative philosophy that is not the major subject of a regularly scheduled course. (U)(3) Occasionally.

PL401, Independent Study: Individual study of a specific topic in philosophy under supervision of a member of the department. Assigned readings, papers, and tutorials. Obtain permission from department chair before enrolling. (U/G)(1) Occasionally.

PL402, Independent Study: Individual study of a specific topic in philosophy under supervision of a member of the department. Assigned readings, papers, and tutorials. Obtain permission from department chair before enrolling. (U/G)(2) Occasionally.

PL403, Independent Study: Individual study of a specific topic in philosophy under supervision of a member of the department. Assigned readings, papers, and tutorials. Obtain permission from department chair before enrolling. (U/G)(3) Occasionally.

PL405, Internship in Philosophy: Offers the qualified student the opportunity for supervised work experience in a setting pertinent to their area of study and their career goals. Contact department chair if interested. Open to juniors and senior philosophy majors. (U)(3) Occasionally.

PL406, Internship in Philosophy: Offers the qualified student the opportunity for supervised work experience in a setting pertinent to their

area of study and their career goals. Contact department chair if interested. Open to juniors and senior philosophy majors. (U)(6) Occasionally.

PL407, Internship in Ethics: Offers students the opportunity for supervised work experience relevant to the study of application of normative philosophy. Open to minors in ethics and philosophy majors. (U)(3) Occasionally.

PL410, Seminar in Philosophy: Advanced course in a major philosophical figure or issue. Non-majors need permission of the instructor. May be repeated for credit. Prerequisites: Two philosophy courses and junior standing. (U/G) (3) Spring.

PL499, Honors Thesis: Undergraduate honors thesis in philosophy. (U)(3) Occasionally.

Religion

Why Study Religion?

For some, the academic study of religion is a way of exploring their own commitment to a particular religious tradition. For others, it is a way of trying to learn about and understand the perspectives, values, and traditions of others. Whatever the student's motivation, the religion major offers the opportunity to engage in a critical and sympathetic study of various religious traditions; to study religious literatures, practices, and beliefs; and to investigate general questions regarding the nature of religion and the scholarly study thereof. A major in religion is a liberal arts major, and as such, exposes students to a wide spectrum of subjects and skills in order to produce broadly educated, sophisticated, and flexible leaders. What can one do with a religion major? Just about anything. Recent graduates of the program have gone on to study religion, law, public policy, medicine, and creative writing at the graduate level. Others have entered the nonprofit sector or religious ministries. Still others have found employment in a range of professions, like teaching, acting, and politics.

Why Study Religion at Butler?

- Vocational discernment: Butler's religion program offers a close mentoring process designed—through careful advising, experiential learning, and internship opportunities, and in collaboration with Butler's Center for Faith and Vocation—to connect theory and practice and help students discern their vocational direction, integrating who they are (in terms of the values they hold most dear) and what they want to do.

- A big “back yard.” Within a few minutes of the campus are numerous churches, synagogues, mosques, temples, and meditation centers representing all of the world's largest religious traditions. Butler's urban location therefore allows students to explore both traditional and emerging American religious phenomena, and the ways in which these are increasingly intertwined with and inseparable from global religious trends. Butler religion majors also often study abroad sometimes with support from departmental awards.
- Close contact with top-notch faculty: Butler's religion program offers small classes and boasts an unparalleled faculty-to-student ratio. Students therefore get to work closely (whether in class, through independent studies, or as research assistants) with professors who are active and widely recognized scholars.
- Empathetic approach: Whereas religion programs in religiously affiliated colleges and universities sometimes teach religion from a specific doctrinal perspective, Butler's religion major is designed to expose students more broadly to the world's major religious traditions. This approach challenges students to hone their skills of critical thinking, develops the ability to appreciate multiple religious perspectives, and provides an excellent preparation for many professions, including for those who intend to enter seminary or graduate work in religious ministry.
- An education both sound and savvy: The religion program at Butler University grounds its students in the classically broad tradition of the liberal arts, while at the same time providing them with the skills that are most crucial in the digital age.

Religion Student Learning Outcomes

Students majoring in religion are expected to gain a basic core of factual knowledge about the world's major religious traditions, acquire skills in critical thinking and textual analysis, develop the ability to identify and deploy credible sources of information (digital, print, or otherwise), cultivate understanding of and empathy for people of other faiths (in Indianapolis and beyond), and nurture a collaborative and civil disposition, that is, to work critically, openly, and with humility in the context of academic discussion and dispute.

Degree Programs

- Major in Religion (BA)
- Combined Major in Philosophy and Religion (BA)
- Minor in Religion

Requirements for the Major

Majors must fulfill each of the following six requirements. (Courses may fulfill more than one distribution requirement if they appear in more than one category below.)

1. Jewish and Christian Traditions (6 hours required from the list below):
 - RL307, The Historical Jesus
 - RL308, Paul and the Early Church
 - RL346, Heresy
 - RL347, History of Christianity
 - RL350, Topics in Judaism
 - RL366, Topics in Jewish and Christian Traditions (e.g., Theology from the Margins)
 - RL370, Modern Religious Thought
 - RL372, Mysticism
 - RL374, Faith and Doubt
 - Any approved three-credit internship, field study, or study-abroad opportunity
2. Islam and the Asian Faiths (6 hours required from the list below):
 - RL353, Buddhism: Past and Present
 - RL354, Islam: Religion, Culture, Society
 - RL358, Hinduism: Past and Present
 - RL363, Religion, Politics, and Conflict in South Asia
 - RL367, Topics in Islam/Asian Faiths
 - RL377, Religion, Gender, and the Goddess in Asia
 - Any approved three-credit internship, field study, or study-abroad opportunity
3. Texts and Textual Interpretation (3 hours required from the list below):
 - TI251-RL, The Bible (formerly RL202)
 - RL213, Biblical Hebrew*
 - RL304, Psalms
 - RL308, Paul and the Early Church
 - RL309, The Gospel of John
 - RL375, Topics in Texts/Textual Interpretations
4. RL391, RL392, Seminar on Religion and World Civilization (3 total hours)
5. RL405, Internship (3 hours)
6. RL381W, Theory and Method (3 hours)

Majors must take additional religion courses to yield 33 total hours, including (not in addition to) credits for courses fulfilling distributional requirements.

In addition to the course requirements above, majors will complete the following two requirements:

- Oral Expression Development. Majors will give an oral presentation in their junior or senior year (ask departmental faculty for details).
- Butler Seminar on Religion and World Civilization. Majors not enrolled in RL391 or RL392 are expected, each year, to attend all quarterly dinners/lectures associated with this annual seminar series.

* Both RL213 and RL214 (Biblical Hebrew, second year) can count as elective religion credit. But only RL213 may be used to fulfill a distribution requirement. (RL214 can only be used as elective credit.)

Requirements for the Combined Philosophy and Religion Major

The major requires 42 hours. Detailed requirements are posted at www.butler.edu/philosophy-religion or can be obtained at the departmental office.

Requirements for the Minor

The minor requires 18 hours in religion, 12 of which must be at the 300 or 400 level, and three of which must be RL381W (Theory and Method in the Study of Religion). Minors should create a suitable package of courses in consultation with a religion professor appointed by the chair.

Core Courses Offered by Religion SW260-RL, Religions, Cults, and (In)

Tolerance in America: A basic introduction to the religions and religious communities of Indianapolis, and an exploration of prominent issues and themes related to our city's (and our country's) increasing religious diversity. (U)(3) Occasionally.

TI220-MU, Music and Religion: This course introduces students to two universals of human culture: music and religion. We will explore the complex, contradictory, and often symbiotic relationship of these two major cultural products in comparative and global perspective. We will look for connections between ritual, culture, and doctrine through an examination of several major religious and musical traditions, including the praise songs of the modern-day American evangelical movement, the spirituals of the 19th-century African American church, the chants and mystery plays of medieval European nuns, Indonesian cremation rituals, and the epic sacred stories of Turkic Siberia. Students will be encouraged to learn not only through readings on theology, ritual, and music (texts),

but experientially through attendance at worship events in the Indianapolis community, and participation in ethnographic research and live performances (ideas). We will reflect upon our experiences analytically and descriptively through writing and discussion. (U)(3)

TI250-RL, Religions of the World: An introduction to the texts, practices, and ideas of the world's major religious traditions, including Hinduism, Buddhism, Confucianism, Taoism, Shintoism, Judaism, Christianity, Islam, and the indigenous traditions of Africa and the Americas. (U)(3) Fall and spring.

TI251-RL, The Bible: Introduction to the content, historical context, methods of study, religious ideas, and cultural influence of the Jewish and Christian scriptures. (U)(3) Fall and spring.

Religion Courses

RL304, The Book of Psalms: Study of the Psalms, the most frequently read and recited book of the Bible. Topics include the origin and composition of the Psalms in ancient Israel, the ethical and religious significance of the Psalms, and the impact of the Psalms on world literature and music. Prerequisite: One religion course or sophomore standing. (U)(3) Occasionally.

RL307, The Historical Jesus: A close look at Jesus of Nazareth focused on sources and methods of knowledge about Jesus as a historical figure. Attention will also be paid to historical and cultural context, and to beliefs about and depictions of Jesus in early Christian literature. Prerequisite: One religion course or sophomore standing. (U)(3) Occasionally.

RL308, Paul and the Early Church: The New Testament Epistles: Focus on the New Testament letters, especially of Paul, with attention to the emergence and growth of the Christian movement in the Graeco-Roman world from the death of Jesus to the middle of the 2nd century A.D. Prerequisite: One religion course or sophomore standing. (U)(3) Occasionally.

RL309, The Gospel of John: This course will study the Gospel of John both as literature and in relation to its historical setting. (U)(3) Occasionally.

RL311, Book of Revelation: Book of Revelation: Studied against the backdrop of its ancient cultural, historical, and literary setting, plus its ongoing influence and the history of its interpretation. (U)(3)

RL346, Heresy: This course focuses on the study of primary texts that didn't make it into

the Bible, and in the process explores how various definitions of what is orthodox and what is heretical came about. In addition to the so-called Gnostic Gospels, students will also learn about a Gnostic group that has survived from the ancient world down to the present day. (U)(3) Occasionally.

RL347, History of Christianity: Historical development of Christianity from the first century to the present. Special attention to selected topics, such as Eastern Orthodox worship and icons, Benedictine monasticism, the Roman Papacy, Luther and the Protestant Reformation, African Christianity, and the challenges to Christian belief in modern times. Prerequisite: One religion course or sophomore standing. (U)(3) Occasionally.

RL350, Topics in Judaism: Study of some central area of Jewish studies such as introduction to Judaism, American Judaism, Jewish religious thought and philosophy, and Jewish-Christian relations. May be repeated with a different topic. Prerequisite: One religion course or sophomore standing. (U)(3) Occasionally.

RL353, Buddhism, Past and Present: Introduction to the basic concepts, philosophies, and practices of Buddhism in South Asia and East Asia from antiquity to the present. Prerequisite: One religion course or sophomore standing. (U)(3) Occasionally.

RL354, Islam: Religion, Culture, Society: An introduction to Islam: origins, sacred texts, world view, culture and society, history and expansion, and Islam in the modern world. Origins and sacred texts are emphasized; relative emphasis on other topics varies. Prerequisite: One religion course or sophomore standing. (U)(3) Occasionally.

RL358, Hinduism, Past and Present: This course will examine Hinduism's practices and beliefs as depicted in its foundational scriptures as well as in the lives of modern Hindus. Topics may include the following: meditation practices, Indian medicine, male and female saints, Hinduism as portrayed in literature/film, Hinduism and modern South Asian politics. (U)(3) Occasionally.

RL363, Religion, Politics, and Conflict in South Asia: Investigation of the interaction of South Asia's many religious communities, especially Hinduism, Islam, Christianity, Sikhism, and Buddhism, paying particular attention to how religious ideas, practices, and demographics have affected communal relations

at various points in the subcontinent's history. The course will focus on moments of conflict and movements of peace. (U/G)(3) Occasionally.

RL366, Topics in Jewish and Christian

Traditions: Treats a specific subject area of Judaism or Christianity that is not the major subject of a regularly scheduled course. (U)(3) Occasionally.

RL367, Topics in Islam/Asian Faiths: Treats a specific subject area of Islam or the Asian faiths that is not the major subject of a regularly scheduled course. (U)(3) Occasionally.

RL370, Modern Religious Thought: A survey of important religious thinkers and theological issues of the 19th and 20th centuries (e.g., Buber, Tillich, Weil, liberation theology, feminism). Emphasis is on the Christian and Jewish traditions as they relate to earlier theological developments and to contemporary philosophical and cultural movements.

Prerequisite: One religion course or sophomore standing. (U)(3) Occasionally.

RL371, Religion and Science: Surveys some main issues in the interaction between science and religion: a comparison of the tasks of scientific and theological research; models of interaction between science and religion; the Big Bang, evolution and creation; contemporary ideas of God. Prerequisite: One religion course or sophomore standing. (U)(3) Occasionally.

RL372, Mysticism: Study of the varieties of mysticism in world religion, with emphasis on Christian and Jewish mysticism. Readings drawn from the Bible, spiritual writings, autobiographies of mystics, letters, poems, and philosophical sources. Prerequisite: One religion course or sophomore standing. (U)(3) Occasionally.

RL375, Topics in Texts/Textual

Interpretations: Treats a topic related to religious scriptures, their history, and/or their interpretation. (U)(3) Occasionally.

RL377, Religion, Gender, and the Goddess

in Asia: A study at the intersection of religion and gender studies. Course will begin with a discussion of feminist and theoretical perspectives on religion, and will then apply the knowledge gained therein to various goddess-oriented communities, past and present, with a focus on Asia. (U)(3) Occasionally.

RL378, Religion and Science Fiction: This course will explore and critically reflect on religious themes, motifs, concepts, and allusions in science fiction (including television and film

as well as classic and more recent literature). Philosophical and ethical issues with a religious component will also be considered. (U)(3) Occasionally.

RL379, The Problem of God: Perhaps no other topic has been discussed more passionately and contentiously in the recent history of philosophy and theology than God. Is there a God? If so, what or who is God? If not, what are the reasons for abandoning the idea of God? What sense does it make in the 21st century to speak meaningfully about God? What effects does faith or belief in God have on contemporary society, for good or for ill? In this course we will tackle the problem of God and ask questions about the existence of God, the nature of God, the limitations of human language and concepts in describing God, the implications of faith or belief in God, and future directions of the conversation. We will do so using a number of recent texts in philosophy and theology, including selections from process philosophers and theologians, feminist theologians, pantheists, the "New Atheists," and radical theologians. (U)(3) Occasionally.

RL 381W, Theory and Method in the Study of

Religion: Introduction to theories and methods used in the academic study of religion with some attention to the history of the discipline. Readings in James, Weber, Durkheim, Otto, Eliade, Turner, Daly, Freud, Geertz, and others. Prerequisites: Two religion courses or junior standing. (U)(3) Occasionally.

RL382, Theology from the Margins: This course explores several Christian theological movements that have, until recently, been marginalized voices within the Christian tradition. We will examine how a plurality of voices, especially those from the margins, enhances our understanding of the Christian tradition and its capacity to speak prophetically to issues of profound contemporary significance, both in Christian churches and in the wider world. We will pay special attention to such issues as gender, race, class, and sexual identity. (U)(3) Occasionally.

RL387, Religious and Philosophical

Explorations of the Problem of Evil: In this course we will consider the problem of evil from both a theoretical and practical perspective, asking questions about the nature and persistence of evil and about our duty to understand the conditions that give rise to the possibility of evil and to name and fight evil wherever we find it. We will do so with the aid of a broad range of sources, including biblical texts and works of philosophy, theology, and literature. (U)(3) Occasionally.

RL391, Seminar on Religion and World

Civilization: Course is based on attendance at four public evening seminars and four Saturday morning workshops during the academic year. Theme varies annually, term varies. Students enrolled in RL391 are expected to take RL392 the following semester. (U)(1) Fall.

RL392, Seminar on Religion and World

Civilization: Continuation of RL391. Course is based on attendance at four public evening seminars and four Saturday morning workshops during the academic year. Theme varies annually, term varies. Prerequisite: RL391 or instructor permission. (U)(2) Spring.

RL397, Field Seminar Abroad: Provides an opportunity to observe and enter into dialogue with religious communities abroad. Each seminar consists of preparatory study, a trip of one week in the field, and an assessment process including a paper. (U)(1) Occasionally.

RL398, Field Seminar Abroad: Provides an opportunity to observe and enter into dialogue with religious communities abroad. Each seminar consists of preparatory study, a trip of two to three weeks in the field, and an assessment process including a paper. (U)(2) Occasionally.

RL399, Field Seminar Abroad: Provides an opportunity to observe and enter into dialogue with religious communities abroad. Each seminar consists of preparatory study, a trip of two to three weeks in the field, and an assessment process including a paper. (U)(3) Occasionally.

RL401, Independent Study: Individual study of a specific topic in religion under supervision of a member of the department. Assigned readings, papers, and tutorials. Obtain permission from department chair before enrolling. (U/G)(1) Occasionally.

RL402, Independent Study: Individual study of a specific topic in religion under supervision of a member of the department. Assigned readings, papers, and tutorials. Obtain permission from department chair before enrolling. (U/G)(2) Occasionally.

RL403, Independent Study: Individual study of a specific topic in religion under supervision of a member of the department. Assigned readings, papers, and tutorials. Obtain permission from department chair before enrolling. (U/G)(3) Occasionally.

RL405, Internship: Offers the qualified student the opportunity for supervised work experience in a setting pertinent to their area of study and their career goals. Contact department chair if

interested. Open to junior and senior religion majors. (U)(3) Occasionally.

RL406, Internship: Offers the qualified student the opportunity for supervised work experience in a setting pertinent to their area of study and their career goals. Contact department chair if interested. Open to junior and senior religion majors. (U)(6) Occasionally.

RL411, Internship: A one credit-hour internship in religion. (U)(1) Fall, spring, and summer.

RL412, Internship: A two credit-hour internship in religion. (U)(2) Fall, spring, and summer.

RL499, Honors Thesis: Undergraduate honors thesis in religion. (U)(3) Occasionally.

Physics and Astronomy

Administration

Xianming L. Han, PhD, Department Chair

Professors

Xianming Han, PhD; Brian W. Murphy, PhD, Director, J. I. Holcomb Observatory and Planetarium

Associate Professors

Dan W. Kosik, PhD; Gonzalo Ordonez, PhD

Instructors

Richard B. Brown, MS, Associate Director, J. I. Holcomb Observatory and Planetarium; Jennifer L. Poor, PhD

Professor Emeritus

H. Marshall Dixon

Department Website

www.butler.edu/physics

Why Study Physics and Astronomy?

Physicists (including astronomers and astrophysicists) seek to understand the fundamental workings of the physical world from the tiniest particles known to the entire universe. Majors develop mathematical, computer, and problem-solving skills to solve problems in areas such as classical mechanics, electricity, magnetism, thermodynamics, relativity, optics, and quantum mechanics. The skills mastered by physics majors are an excellent foundation for many professions in science, engineering, medicine, business, and law. Graduates find opportunities for employment in education, industry, and research. A bachelor's degree in physics is also excellent preparation for pursuit of an advanced degree not only in physics but also in other fields such as computer science, engineering, medicine, and law.

Why Study Physics and Astronomy at Butler?

- Majors participate in research experiences at about twice the national rate.
- Our students have 100 percent placement for those who seek undergraduate research/ internship positions.
- Our student-to-faculty ratio is small: 9:1.
- Faculty members have expertise in atomic physics, geophysics, astrophysics, nuclear physics, computational physics, and condensed matter, allowing students a number of choices for on-campus research.
- The department directs the Holcomb Observatory and Planetarium, which is home to a robotic 1-meter-class telescope. Butler University is a member of the SARA (Southeastern Association for Research in Astronomy) consortium, which operates two remotely operated telescopes at Kitt Peak National Observatory in Arizona and Cerro Tololo Inter-American Observatory in Chile. These three telescopes are available for our faculty and students for remote observing research as well as on-site visitation.
- Students have the opportunity to work in our Laboratory for Laser and Quantum Physics, which houses a YAG laser pumped tunable dye-laser to study interactions between light and matter.
- The University's supercomputer, "Big Dawg," with 384 compute cores, is used for departmental research.
- Students can earn a degree in engineering (mechanical, electrical, computer, biomedical, energy, or motorsports) concurrently through our Engineering Dual Degree Program (see Engineering Dual Degree Program).

Physics and Astronomy Student Learning Objectives

Students majoring in physics and astronomy at Butler will gain a working knowledge of the basic concepts and theories of physics, which they will demonstrate by applying them to novel situations. They will learn to make inferences and deductions about physical systems using critical thinking, problem-solving techniques, mathematical and computer modeling, and laboratory experiments. They will gain the skills to conduct lab or modeling experiments, to analyze measurements, and to evaluate uncertainty, and they will learn to communicate their findings both through speaking and through writing.

Degree Programs

- Major in Physics (BA, BS)
- Major in Astronomy and Astrophysics (BA, BS)
- Major in Physics with Engineering Dual Degree Program (see Engineering Dual Degree Program)
- Minor in Physics
- Minor in Astronomy

Requirements for the Physics Major

- PH201, PH202, Introduction to Analytical Physics I and II
- PH301, Modern Physics
- PH303, Electromagnetic Waves and Optics
- PH311, Experimental Modern Physics
- PH321, Intermediate Classical Mechanics
- PH325, Thermodynamics and Statistical Physics*
- PH331, Electromagnetic Theory I**
- PH421, Quantum Theory I
- PH495, Senior Seminar
- PH/AS, Physics Electives*

* The physics elective must be chosen from AS301, AS311, PH315, PH351, PH422, PH427, PH461, or PH480.

** Mechanical engineering students in the Engineering Dual Degree Program may substitute an appropriate engineering mechanics course. Electrical engineering students in the Engineering Dual Degree Program may substitute appropriate engineering electronics courses.

A student who intends to pursue graduate studies in physics also should complete at least PH315 and PH422. Other electives may be advised by the department in consideration of a student's individual career plans. Consideration should be given to the prerequisites for each course in both math and physics. MA106, MA107, and MA208 are prerequisites for most 300-level physics courses.

Requirements for the Astronomy and Astrophysics Major

- AS102, Modern Astronomy (same as NW263)
- AS301, Modern Astronomical Techniques
- AS311, Stellar Astrophysics
- AS312, Galaxies and Cosmology
- PH201/PH202, Introduction to Analytical Physics I and II
- PH301, Modern Physics
- PH303, Electromagnetic Waves and Optics
- PH321, Intermediate Classical Mechanics
- PH331, Electromagnetic Theory
- PH495, Senior Seminar 1

Recommended

- PH311, Experimental Modern Physics
- PH325, Thermodynamics and Statistical Physics
- PH421, Quantum Theory
- PH461, Computational Physics

Requirements for the Physics Minor

- PH201 and PH202, Introduction to Analytical Physics
- PH301, Modern Physics
- PH303, Electromagnetic Waves and Optics
- PH311, Experimental Modern Physics
- PH321, Intermediate Classical Mechanics

Requirements for the Astronomy Minor

- AS102, Modern Astronomy with Laboratory
- PH201, PH202, Introduction to Analytical Physics
- AS301, Modern Astronomical Techniques
- AS311, Stellar Astrophysics
- AS312, Galaxies and Cosmology

Note that MA106 and MA107 are prerequisites to the upper-division astronomy courses.

Core Course Offered by Physics

NW262-PH, The Physical World: A one-semester study of selected topics in physics, astronomy, chemistry, and other related fields, and the mathematical analysis of physical problems. Some mathematical tools will be introduced as needed. Four lecture periods and two hours of laboratory per week. (U)(5) Fall, spring, and summer.

Physics Courses

PH105, Concepts of Physical Science: A one-semester study of selected topics in physics and the mathematical analysis of physical problems. The student should be already competent with algebra; a few additional mathematical tools will be introduced as needed. Four class periods and two hours of laboratory per week. (U)(5) Occasionally.

PH107, Elementary Physics 1: A two-semester course based on algebra and elementary trigonometry. This course is suitable preparation to meet the entrance requirements of most dental, medical, and pharmacy schools. Three class periods and two hours of laboratory per week. PH108 must be preceded by PH107. (U)(4) Fall.

PH108, Elementary Physics 2: A two-semester course based on algebra and elementary trigonometry. This course is suitable preparation

to meet the entrance requirements of most dental, medical, and pharmacy schools. Three class periods and two hours of laboratory per week. PH108 must be preceded by PH107. (U)(4) Spring.

PH152, Preparatory Analytical Physics: A course in physical-problem analysis and solution using calculus and other mathematical tools required for PH201. Recommended for science and mathematics majors who need/wish to study PH201, but whose mathematical and physical-problem solving experience is limited. Prerequisite or corequisite: MA 106. (U)(4)

PH200, Physics for the Health Sciences: A survey of topics in physics applied to the human body and to medical diagnostic and treatment devices. (U)(3)

PH201, Introduction to Analytical Physics: An introduction to Newtonian mechanics, thermal physics, waves, electromagnetism, and optics using calculus. Familiarity with algebra, trigonometry, and calculus is assumed. Four lectures and two hours of laboratory per week, plus one hour of recitation per week. PH202 must be preceded by PH201. Prerequisite: MA106 (may be concurrent) or permission of instructor. (U)(5) Fall.

PH202, Introduction to Analytical Physics: An introduction to Newtonian mechanics, thermal physics, waves, electromagnetism, and optics using calculus. Familiarity with algebra, trigonometry, and calculus is assumed. Four lectures and two hours of laboratory per week, plus one hour of recitation per week. PH202 must be preceded by PH201. Prerequisite: MA106 (may be concurrent) or permission of instructor. (U)(5) Spring.

PH301, Modern Physics: The special theory of relativity is developed along with the introduction of basic ideas and equations of quantum physics. Topics include Lorentz transformations, relativistic mechanics, collisions and conservation of energy-momentum, electromagnetism and relativity, blackbody radiation, photoelectric effect, Compton effect, and the Schrodinger equation. Prerequisites: MA107 and PH202 or permission of the instructor. (U)(3) Fall.

PH303, Electromagnetic Waves and Optics: A study of geometric and wave optics, interference, diffraction, and polarization of electromagnetic waves. Two lectures and two hours of laboratory per week. Prerequisites: MA208 (may be concurrent) and PH202 or permission of instructor. (U)(3) Fall.

PH311, Experimental Modern Physics: The student performs a series of experiments to explore and verify experimental implications of relativity and quantum mechanics. Experiments include determination of Planck's constant, speed of light, charge-to-mass ratio of electron, Franck-Hertz experiment, Bragg scattering, Rutherford scattering, and radioactive decay processes. Prerequisite: PH301 or permission of instructor. (U)(3) Spring.

PH315, Mathematical Methods for Physics: Differential equations; coordinate systems and differential geometry; special functions; linear operators, groups and representation theory; complex analysis; Fourier series; and integral transforms. Applications to problems in electromagnetic theory, classical mechanics, and quantum mechanics will be presented. Four lectures per week. Prerequisites: MA208, PH201, and PH202. (U)(4) Occasionally.

PH316, Mathematical Methods for Physics: Differential equations; coordinate systems and differential geometry; special functions; linear operators, groups and representation theory; complex analysis; Fourier series; and integral transforms. Applications to problems in electromagnetic theory, classical mechanics, and quantum mechanics will be presented. Four lectures per week. Prerequisites: MA208, PH201, and PH202. (U)(4) Occasionally.

PH321, Intermediate Classical Mechanics: A study of the classical dynamics of oscillators, gravitational systems, calculus of variations, Lagrangian and Hamiltonian formalisms, dynamics of many-particle systems and continuous media, including noninertial motion, rotational motion, normal modes, and wave theory. Prerequisites: PH202 and MA208 or permission of instructor. (U)(4) Fall.

PH325, Thermodynamics and Statistical Physics: A study of the theory and applications of the first and second laws of thermodynamics; thermodynamic potentials; kinetic theory; classical and quantum statistical mechanics; and ensemble theory to thermodynamic systems. Four lecture hours per week. Prerequisites: PH202 and MA107 or permission of instructor. (U/G)(4) Spring.

PH331, Electromagnetic Theory: The theory of classical electric and magnetic fields is developed covering such topics as electrostatics, magnetostatics, scalar and vector potentials, fields in matter, electrodynamics and Maxwell's equations, conservation laws, and radiation. Prerequisites: MA208 and PH301 or permission of the instructor. (U)(4) Fall.

PH351, Analog Electronics I: Survey of electronic devices. Measurement of continuously varying quantities in time and frequency domains. Rectifiers, amplifiers, feedback, with emphasis on operational amplifiers and their uses. Three lectures and three hours of laboratory per week. Prerequisite: PH202 or permission of instructor. Fee. (U)(4) Fall.

PH352, Digital Electronics: Logic design, Karnaugh maps, state diagrams. Arithmetic and logic functions. Flip-flops, counters, and shift registers. Introduction to design with MSA and LSI devices. Two lectures and three hours of laboratory per week. Prerequisite: PH351 or permission of instructor. Fee. (U)(3)

PH411, Theoretical Physics: A study of mathematical methods of physics, including boundary-value problems, special functions, linear operators, and group theory, with applications to problems in electromagnetic theory, classical and quantum mechanics. Three lectures per week. Prerequisites: PH331 and MA334 or permission of instructor. (U/G)(3) Occasionally.

PH412, Theoretical Physics: A study of mathematical methods of physics, including boundary-value problems, special functions, linear operators and group theory, with applications to problems in electromagnetic theory, classical and quantum mechanics. Three lectures per week. Prerequisites: PH331 and MA334 or permission of instructor. (U/G)(3)

PH413, Independent Study in Physics. (U)(1)

PH414, Independent Study in Physics. (U)(1-3)

PH421, Quantum Theory: The mathematical foundations of quantum mechanics are presented with treatment of simple systems such as barriers, square wells, harmonic oscillator, and central potentials with the development of approximation methods and the theory of angular momentum for single particles. Prerequisites: MA208 and PH301 or permission of instructor. (U/G)(4) Occasionally.

PH422, Quantum Theory II: Applications of quantum mechanics to multi-particle systems. Time dependent perturbation theory, angular momentum coupling, atomic spectra, quantum statistics, radiation and scattering theory, and introduction to relativistic quantum theory. Prerequisite: PH421 or permission of instructor. (U)(4) Occasionally.

PH427, General Relativity and Gravity I: Tensor analysis in classical field theory,

Einstein's field equations, the Schwarzschild solution, linearized field equations, experimental gravitation, cosmological models and gravitational collapse. Prerequisites: PH321 and PH332 or permission of instructor. (U/G)(3)

PH428, General Relativity and Gravity

II: Tensor analysis in classical field theory, Einstein's field equations, the Schwarzschild solution, linearized field equations, experimental gravitation, cosmological models and gravitational collapse. Prerequisites: PH427 or permission of instructor. (U/G)(3)

PH461, Computational Physics:

An introduction to numerical methods frequently used in physics for solving problems that cannot be solved analytically in a closed mathematical form. Topics include numerical solution of problems dealing with oscillatory motion, gravitation, electrical fields, fluid dynamics, heat conduction, Schrödinger equation, and elastic wave motion. Prerequisites: PH321, PH331, or permission of the instructor. (U)(3) Occasionally.

PH480, Special Topics: By arrangement with appropriate staff. (U/G)

PH491, Undergraduate Tutorial and Research. (U)(3)

PH492, Undergraduate Tutorial and Research. (U)(6)

PH493, Undergraduate Tutorial and Research. (U)(9)

PH495, Senior Seminar: This seminar, for junior and senior physics majors, features student presentations on special research projects and selected readings in scientific current literature. A comprehensive physics exam covering all areas of physics in the curriculum will be given to all senior physics majors in the course. (U)(1) Fall.

PH499, Honors Thesis. (U)

Core Course Offered by Astronomy

NW263-AS, The Astronomical Universe: A one-semester survey of astronomy including ancient Greek astronomy, the motions of the night sky, the solar system, other solar systems, the lives of stars including the Sun, and the origin and fate of the universe. This will be a four-lecture-hour/two-hour-lab course. (U)(5) Fall, spring, and summer.

Astronomy Courses

AS100, The Astronomical Universe: A descriptive study of basic astronomy including the planets and the apparent motions of celestial

objects, the seasons, constellations, comets and meteors, stars, galaxies and large-scale structure of the universe, plus current events in space exploration. There will be planetarium demonstrations and telescope observations. Some hands-on lab experiences are provided. (U)(3) Fall, spring, and summer.

AS301, Modern Astronomical Techniques:

Introduction to techniques and equipment used in modern astronomy with emphasis on detection and analysis of electromagnetic radiation and the fundamental properties of telescopes and detectors. Lectures and laboratory. Laboratories focus on observational techniques and data reduction. Prerequisites: AS102 and PH202. (U)(3) Spring.

AS311, Astrophysics 1: The first semester of an introductory course on stellar astrophysics using nearly every branch of physics. Emphasis is on the underlying physical principles, including the nature of stars, stellar energy generation, stellar structure and evolution, astrophysical neutrinos, binary stars, white dwarfs, neutron stars and pulsars, and novae and supernovae. Prerequisites: AS102 and PH202. (U)(3) Fall.

AS312, Astrophysics 2: A continuation of AS311. The course covers the application of physical principles to the interstellar medium, the kinematics and dynamics of stars and stellar systems, galactic structure, formation and evolution of galaxies, relativity, Big Bang and inflationary models of the origin of the universe, and the large-scale structure and ultimate fate of the universe. Prerequisite: AS311. (U)(3) Spring.

AS461, Computational Astrophysics: An introduction to numerical methods frequently used in astrophysics for solving problems which cannot be solved analytically in a closed mathematical form. Topics include numerical solution of problems dealing with oscillatory motion, gravitation, electrical fields, stellar dynamics, stellar evolution, Schrödinger equation, and fluid mechanics. Prerequisites: PH321, PH331, or permission of the instructor. (U)(3) Occasionally.

Political Science

Administration

Siobhán McEvoy-Levy, PhD, Department Chair
Professor

Margaret A. Brabant, PhD

Associate Professors

Craig W. Auchter, PhD; Terri R. Jett, PhD;

Siobhán McEvoy-Levy, PhD; Robin Turner, PhD

Assistant Professor

Su-Mei Ooi, PhD

Professor Emeritus

Dave Mason, PhD

Department Website

www.butler.edu/political-science

Why Study Political Science?

The faculty members of the Political Science Department at Butler University see our discipline as connected to liberal arts, which are about studying and understanding ourselves, other peoples, and different ways of being and knowing, as well as about developing tolerance and empathy, and learning to use evidence and think critically. As political scientists, we seek to understand the causes of wars, social injustices, economic disparities, and uneven technological growth for the purpose of alleviating suffering.

Because a liberal arts education encourages an activist disposition, we look for ways to address problems such as world poverty, inadequate health care, educational disparities between neighboring communities, and environmental degradation, and seek nonviolent solutions to human rights violations worldwide. The department deliberately challenges systems, institutions, and leaders that dehumanize, marginalize, and oppress any persons and other living beings. We seek to engage in intellectual practices that provide sustainable solutions for the betterment of all.

Why Study Political Science at Butler?

The department is committed to teaching students how to effect positive social change. In practicing citizenship skills that include empathetic listening, moral reasoning, personal responsibility, and a greater awareness of one's responsibility to the human polity, our students develop as active and engaged citizens at the local, national, and international levels. We offer courses that include service learning and community-based research, encourage students to accept responsibility for their learning, and recognize that knowledge may be obtained from a variety of different people and situations.

Political Science Student Learning Outcomes

- Analyze and differentiate various political movements, structures, and institutions in the United States and other countries
- Differentiate and make connections between theory and practice, between global and local events, and between political science and other disciplines

- Demonstrate an awareness of different cultures and their effect on domestic and international affairs
- Demonstrate leadership and collaborative skills through active engagement in service learning and internships
- Apply research and communication techniques effectively
- Value the fundamental importance of one's membership in the human polity, emphasizing citizenship and political community

Degree Programs

- Major in Political Science (BA)
- Minor in Political Science

Requirements for the Major

The major requires 33 hours of political science courses, of which at least 20 hours must be in courses numbered above 299. Majors must take PO201, plus three of the other introductory courses (PO101, PO102, PO131, PO141, PO151, PO210, or PO220) and at least one writing-intensive departmental seminar (PO490).

Requirements for the Minor

Eighteen hours of political science courses, including PO101 and PO201 and at least nine hours at the upper level (above 299). Undergraduates enrolled in any college or program are eligible to minor in the field.

Core Courses Offered by Political Science

SW240-PO, Gender and Generations—War and Peace: This course is organized around the following inquiry: When gender and generation are used as categories of analysis, what do we learn about the politics of violence and peace? We are taking the lenses of gender and age and training them on different aspects of global politics, society, and culture. What forms of violence do we see? (U)(3) Annually, term varies.

TI255-PO, The Politics of Alice Walker: This course will introduce students to the great works of Alice Walker, who is accomplished in many literary areas—poetry, short stories, novels, and political/cultural essays. Infused in all of her works is her personal and evolving political worldview, in which so many diverse people identify, and yet her voice is distinctly African American female. We will read an array of her texts and develop an understanding of what drives her political identity. (U)(3) Spring.

Political Science Courses

PO101, Introduction to Politics: The ideas and practice of politics, with consideration of the political systems and foreign policies of the United States and countries in Europe and the Third World. (U)(3) Occasionally.

PO102, Introduction to Peace Studies: This course provides a basic introduction to the study of peace studies. It begins with an examination of the history of the field and its major theoretical and philosophical currents. The second part of the course deals with structural, cultural, and direct violence and issues as social justice, human rights, and peace building with reference to contemporary cases. (U)(3) Fall and spring.

PO131, Introduction to U.S. Politics: The contemporary political system with emphasis on the functioning of the institutions of the national government in the context of the political culture and the political economy of the United States. (U)(3) Annually, term varies.

PO141, Introduction to International Politics: An analysis of changing patterns in international politics with an emphasis on global challenges and the participation of individuals, nongovernmental organizations, states, and international organizations in the search for solutions. (U)(3) Annually, term varies.

PO151, Intro to Comparative Politics: Study of several political systems in Europe, Asia, Africa, and Latin America examining similarities, differences, and factors involved in stability, change, or revolution. (U)(3) Annually, term varies.

PO201, Research and Analysis: This course, required of all majors, will introduce students to the process of designing and executing research projects (large and small) in political science; to library, archival, and web-based resources for political research; to quantitative and qualitative methods of analysis; and to writing research reports for various audiences. (U)(3) Fall and spring.

PO210, Basic Political Thought: Structured around certain perennial topics of politics, this course introduces students to the philosophical ideas that form the foundation of political institutions. (U)(3) Annually, term varies.

PO220, Community Mediation: This course focuses on conflicts experienced by human communities and ways in which these conflicts can be understood as opportunities for constructive change through the cultivation of multiple perspectives, identification of

underlying shared needs and interests, and collaborative approaches to forging agreements amidst challenging circumstances. (U)(3) Annually, term varies.

PO230, Activism: This course is designed to help you to: (1) better understand the role of activists in initiating and supporting social and political change, (2) acquire practical skills and tools for effective activism, and (3) develop conceptual and experiential insights needed to continually strengthen your evolving praxis of activism. No prerequisites. (U)(3) Annually, term varies.

PO310, The Foundations of Chinese Politics: This course introduces students to the politics of China by providing a chronological overview of key historical events that have shaped the politics of China, examining the formal and informal aspects of how power is organized in the People's Republic of China, and considering how world politics has shaped China and how China has and will continue to shape world politics. Prerequisites: One political science course or permission of instructor. (U)(3) Occasionally.

PO320, International Relations: Problems in world politics since 1900 with particular attention to the efforts at peaceful settlement of international conflicts. (U/G)(3) Occasionally.

PO322, International Conflict and Peace Building: The course examines theories of conflict and peace building and analyzes in-depth specific cases of inter-state and intra-state warfare and post-war reconstruction. Students participate in simulated peace negotiations. (Prerequisite: PO141 or PO220 or consent of the instructor.) (U/G)(3) Annually, term varies.

PO324, The United States in the Asia-Pacific: This course examines the role of the United States as a Pacific power in the international relations of the Asia-Pacific region. Students will be required to think about various issues in the international relations of the region through historical and theoretical lenses. Prerequisites: PO141 or permission of the instructor. (U)(3) Occasionally.

PO326, Chinese Foreign Policy: Students will learn to identify and analyze key international and domestic sources of Chinese foreign policy through relevant concepts and theories in political science. Students will also use this knowledge to understand select aspects of Sino-U.S. relations. Prerequisite: One PO course or permission of the instructor. (U)(3) Occasionally.

PO328, Politics of China's Development: This course examines the politics that have

driven the economic development path taken by the People's Republic of China and considers the economic choices and challenges it faces in the context of the global political economy. Prerequisite: One PO course or permission of the instructor. (U)(3) Occasionally.

PO332, State and Local Government and Politics: American state and local government activities and electoral politics, emphasizing the issues of political management and policy analysis. (U)(3) Occasionally.

PO335, Racial and Ethnic Politics: The course will examine racial and ethnic group efforts to gain political power within American society, mostly as a result of access to and representation within the formal structures of American politics. Particular attention will be given to the increasing political competition between these groups and to strategies for cooperation. (U)(3) Occasionally.

PO337, Politics of the Urban Experience: Students develop a comprehensive understanding of political processes and problem solving in the urban environment. Through service learning, students learn how the urban community is transformed, analyze contemporary challenges that drive its development of stagnation, and anticipate the importance of the urban community to our survival as a nation. (U/G)(3)

PO340, The Earth Charter: This course asks practical, strategic, and ethical questions of the Earth Charter's focus on respect and care for the community of life, ecological integrity, social and economic justice, and democracy, nonviolence and peace, and the choices we make as we chart our individual and collective paths to sustainable future. (U)(3) Annually, term varies.

PO350, African Politics: Africa is a diverse and complex continent comprising more than 50 countries with distinct histories and political economies. Although Americans are constantly bombarded with images and reports on wars, disease, conflict, and corruption in Africa, these representations are incomplete and somewhat misleading. Rather than attempting to provide a comprehensive portrait of politics across the continent, this course will expose you to important concepts and theories in African politics, to the political histories and dynamics of several sub-Saharan African states, and to African scholars' and writers' perspectives on the region. Prerequisite: PO151 or junior standing. (U)(3) Annually, term varies.

PO351, African Gender and Sexuality Politics: This course will examine the varied

ways in which gender and sexuality have been constructed and politicized across the African continent. We will collectively engage with a variety of texts—essays, films, books, and scholarly journal articles—that address African understandings and expressions of gender and sexuality, the role of gender and sexuality in African politics, and Africans' individual and collective mobilizations toward liberation and against gender- and sexuality-based oppression. Although the course will focus on African gender/sexuality politics, we also will consider the relationship between African and Western gender/sexuality discourses and movements. Prerequisite: Sophomore status, GHS206, or PO350. (U)(3) Occasionally.

PO352, Comparative Political Economy: Development has long been a central concern of political economists. Most people would agree that Ouagadougou is much less developed than New York City, and Burkina Faso is less developed than the United States of America. But, what about the difference between Kerala and Beijing or between India and China? How does the USA compare to Canada, the Netherlands, and the United Kingdom? And why are some places less developed than others? While economists often rely on economic growth rates and GDP/capita to measure development, these measures tell us little about citizens' access to opportunities, their quality of life, or their political rights (or lack thereof). If development is the "process of expanding the real freedoms that people enjoy," as Amartya Sen argues, these indicators are radically incomplete. Focusing on the deeply contested concept of development, this seminar examine at the politics of economic growth and well-being. We will delve into the classical and contemporary literature on the political economy of development and will look closely at the development questions, trajectories, and challenges facing people across the globe. Prerequisite: PO151 or junior status. (U)(3) Occasionally.

PO355, United States Foreign Policy: Evolution of U.S. foreign policy since World War II and the processes and institutions involved in shaping and implementing that policy. (U/G) Occasionally.

PO356, Israel Palestine Conflict: The course focuses on the historical origins, key narratives, political dynamics, and most contentious issues involved in the Israel-Palestine conflict. How did this conflict begin? Why has it proved so intractable? What prospects are there for peace? To answer these questions, the course examines the social, political, economic, cultural, psychological, and military aspects of

the conflict. The core issues are analyzed from a variety of different perspectives, including the positions of important political, military, and religious actors, women, youth, civil society organizations, peace movements, and external actors. Prerequisite: One PO course or permission of instructor. (U)(3) Occasionally.

PO357, The Politics of Youth and Conflict:

The course examines the relationship between young people and the ideas, behaviors, processes, structures, and cultures that promote violent conflicts and/or peaceful social change in our world. Prerequisite: One PO course or permission of instructor. (U)(3) Occasionally.

PO358, Foreign Policy Making in Washington:

This course focuses on foreign policy making as practiced in Washington, DC; it examines how politicians, lobbyists, citizens, and diplomats interact in and around Washington's corridors of power to determine international policy outcomes. First-hand insights gained through dialogue with those who make and implement policy and close scrutiny of key international issues provide students with a "laboratory" for understanding the politics of foreign policy making in the U.S. capital, how these policies are shaped, and why they succeed or fail to achieve their stated objectives. (U)(3) Occasionally.

PO360, Political Regimes Latin America:

Comparative study of the politics of development in Latin America with particular attention given to the interdependence of economic, social, cultural, and external influences upon political regimes as well as the efficacy and legitimacy of the regimes themselves. Prerequisite: PO101, PO151, or permission of the instructor. (U/G)(3) Annually, term varies.

PO362, Popular Participation in Latin

America: This course focuses upon the efforts of peasants, urban workers, neighborhoods, church groups, and students to organize and mobilize in politically efficacious ways. The themes of social class, gender, ethnicity, and the informal sector are interwoven in an analysis of the successes and failures of these attempts at popular participation in the political process. Prerequisite: PO101, PO151, or permission of the instructor. (U/G)(3) Annually, term varies.

PO364, United States-Latin American

Relations: Historical orientation to the evolving context, institutions, and central concerns of United States-Latin American relations with particular focus upon divergent perspectives of definitions of interests and responsibilities, as well as a search for viable solutions to common problems in the Western Hemisphere.

Prerequisite: PO101, PO141, or permission of the instructor. (U/G)(3)

PO371, U.S. Parties and Politics: Examination of interplay between the main components of our two major parties, party organization, party-in-government and party-in-the-electorate. Emphasis on recent trends, particularly in the process of presidential selection. (U/G)(3) Occasionally.

PO372, Role of Protest in U.S. Politics: Protest movements in U.S. politics. An examination of the historical context of protest movements and a consideration of theoretical approaches to understanding them. Includes the Civil Rights and anti-war movements of the 1960s. Prerequisite: (one of the following) PO101, PO131, PO141 or consent of instructor. (U/G)(3) Occasionally.

PO373, Public Policy: An introduction to the study of how public policies are established in the United States. Emphasis on developing and applying analytical skills. Students are expected to research in depth a particular policy issue such as housing, the environment, or the workplace. Prerequisite: (one of the following) PO101, PO131, PO151 or consent of instructor. (U/G)(3)

PO377, Constitutional Law: Examination of Supreme Court cases in areas such as freedom of speech, religion, criminal due process, government regulation of commerce, and racial discrimination. (U/G)(3) Occasionally.

PO379, The Presidency and the Congress:

The modern president's role as leader of public opinion, the executive branch, and Congress. Congressional leaders and their relationship with the president, each other, and Congress. (U/G)(3) Occasionally.

PO380, Topics in Political Science: Selected topics of contemporary significance in scholarship in political science. Prerequisite: At least one political science class or junior standing or permission of instructor. (U)(3) Fall and spring.

PO381S, Ancient and Medieval Political

Thought: This course examines the foundation of Western political thought and considers the ways in which the successors of a tradition simultaneously criticize and incorporate the work of their predecessors as they seek to construct new theories of politics. Prerequisite: PO101, PO210, or permission of instructor. (U/G)(3) Occasionally.

PO382, Modern Political Thought: Study of several leading political writers from Hobbes

through Marx, with attention to certain basic similarities in addition to pronounced differences. Prerequisite: Junior standing or permission of the instructor. (U/G)(3) Occasionally.

PO383S, U.S. Political Thought: Selected writings of U.S. authors focusing on four periods: founding of the republic, slavery, suffrage, and the civil rights movement. Prerequisite: PO131, PO210, or permission of the instructor. (U/G)(3) Occasionally.

PO384, Politics Through Film: Post-war Hollywood films as they reflect and help to create the persuasive political culture of the United States. Draws on analytical, historical, aesthetic, and political economy approaches. Prerequisite: PO101, PO131, or consent of instructor. (U/G)(3) Occasionally.

PO385SL, The Enduring Quest for Community Service Learning: This course examines various ideas of the meaning and purpose of communities throughout the history of western political thought. Beginning with Greek conceptions of what it means to live together, we will consider how the definition and purpose of community evolves to the contemporary period. Consideration of contemporary efforts to recover idyllic communities will also be considered as part of the continuing effort on the part of human beings to link personal and political practices. The course includes a service-learning component. (U)(3) Occasionally.

PO386, Black Political Thought: Students will develop a historical understanding of political thought that is reflective of the black experience. We will explore black political theorists of Africa, America, and other contexts of the African diaspora. (U)(3) Occasionally.

PO400, Independent Study: Offers the qualified student of political science the opportunity to pursue a topic of individual interest. Open only to seniors, by permission of the instructor. (U)(1) Fall and spring.

PO401, Independent Study: Offers the qualified student of political science the opportunity to pursue a topic of individual interest. Open only to seniors, by permission of the instructor. (U)(2) Fall and spring.

PO402, Independent Study: Offers the qualified student of political science the opportunity to pursue a topic of individual interest. Open only to seniors, by permission of the instructor. (U)(3) Fall and spring.

PO403, Internship: Offers the qualified student the opportunity for supervised work experience in a setting pertinent to political science. Prerequisite: permission of the department chairman. (U)(2) Fall and spring.

PO404, Internship: Offers the qualified student the opportunity for supervised work experience in a setting pertinent to political science. Prerequisite: permission of the department chairman. (U)(3) Fall and spring.

PO405, Internship: Offers the qualified student the opportunity for supervised work experience in a setting pertinent to political science. Prerequisite: permission of the department chairman. (U)(6) Fall and spring.

PO406, Internship: Offers the qualified student the opportunity for supervised work experience in a setting pertinent to political science. Prerequisite: permission of the department chairman. (U)(9) Fall and spring.

PO407, Student Apprenticeship in Political Science: Students work with faculty mentors on their teaching or their research. In teaching apprenticeships, students work with the professor in the development and discussion of the classroom experience. In research apprenticeships, students work with a faculty mentor on his or her current research. Prerequisites: Junior standing, two courses in political science. By application only. (U)(1, 2, or 3) Fall and spring.

PO408, Student Apprenticeship in Political Science: Students work with faculty mentors on their teaching or their research. In teaching apprenticeships, students work with the professor in the development and discussion of the classroom experience. In research apprenticeships, students work with a faculty mentor on his or her current research. Prerequisites: Junior standing, two courses in political science. By application only. (U)(1, 2, or 3) Fall and spring.

PO409, Student Apprenticeship in Political Science: Students work with faculty mentors on their teaching or their research. In teaching apprenticeships, students work with the professor in the development and discussion of the classroom experience. In research apprenticeships, students work with a faculty mentor on his or her current research. Prerequisites: Junior standing, two courses in political science. By application only. (U)(1, 2, or 3)

PO490, Seminar in Political Science: A particular subject in political science will be

studied each semester. Writing-intensive.
Prerequisite: Junior standing or permission of the instructor. (U/G)(3)

PO499, Honors Thesis. (U) Occasionally.

PO701, Research. (G)(3)

PO711, Thesis. (G)(3)

Psychology

Administration

Joel M. Martin, PhD, Department Chair

Professors

John Neil Bohannon III, PhD; Robert H. I. Dale, PhD; Tara T. Lineweaver, PhD; Joel M. Martin, PhD; Kathryn A. Morris, PhD; Robert J. Padgett, PhD

Associate Professors

R. Brian Giesler, PhD; Amanda C. Gingerich, PhD

Assistant Professors

Alison L. O'Malley, PhD; Scott Oster, PhD (visiting)

Department Website

www.butler.edu/psychology

Why Study Psychology?

The goal of an undergraduate psychology program is to introduce students to knowledge of the principles of emotion, behavior, and cognition as established by scientific methods. Students majoring in psychology study the core content areas of psychology and scientific methodology in preparation for graduate study and later professional pursuits in psychology or related fields.

Why Study Psychology at Butler?

Students in our program develop an understanding of psychological science through instruction in the classroom and hands-on participation in research projects. The classroom portion of the curriculum is structured so that students first receive a general overview of the topics and methods in psychology, followed by a more thorough exploration of specific content areas. We emphasize a broad and stable base of content: every psychology major studies the same basic core of subject matter and methods in psychology. Further, each psychology student has the opportunity to add depth to that knowledge by studying particular content areas more specific to his or her interests.

Participation in student-faculty collaborative research is the hallmark of our program. We encourage students to become involved in research projects with one or more professors during their undergraduate years. Research

involvement is structured so that students evolve from apprentices to collaborators by taking progressively greater responsibility for the design and execution of psychological research projects. Some students complete an honors thesis, a yearlong research project. They routinely make presentations at the Butler Undergraduate Research Conference and at national professional meetings such as the annual convention of the Association for Psychological Science. Approximately 80 percent of our graduates have collaborated on at least one research project.

Students benefit from participating in student-faculty collaborative research in several ways. They have the opportunity to apply the concepts, theories, and ideas learned in the classroom. They also learn how to think like psychologists and how to conduct scientific research. No amount of reading about psychology or listening to instructors can replace the experience of conducting research in behavioral science.

Because a career as a professional psychologist requires a graduate degree, the knowledge and skills students acquire through coursework and research experience in our program prepare them for graduate study. About two-thirds of our students attend graduate school either immediately after completing our program or after working for one to five years in a field related to psychology. Most of these students enter graduate programs in psychology, social work, and counseling. Some attend medical or law school. The remaining students begin careers in a wide range of fields, most of which are health-care- or service-related (pharmaceutical companies, nonprofit organizations, health care services, management, computer services, human resources, sales, education, and advertising, to name a few).

Psychology Student Learning Outcomes

Psychology students will demonstrate mastery of the core content areas of psychology and use critical thinking to advance scientific inquiry. Psychology students will also communicate their knowledge of the field to others, apply ethical standards to evaluate psychological science and practice, and will have developed a meaningful professional direction for life after graduation.

Degree Programs

- Major in Psychology (BA)
- Combined Major in Psychology and Sociology/Criminology (BA) (see Combined Majors)

- Combined Major in Psychology and Sociology/Social Work (BA) (see Combined Majors)
- Combined Major in Psychology and Anthropology (BA) (see Combined Majors)
- Combined Major in Psychology and Philosophy (BA) (see Combined Majors)
- Combined Major in Psychology and Political Science (BA) (see Combined Majors)
- Minor in Psychology
- The department participates in the interdisciplinary Neuroscience Minor

Requirements for the Major

The major in psychology (39 or 41 credit hours) sets three goals for student development: to master a central core of psychological knowledge, to acquire basic methodological and computer skills, and to attain a sophisticated knowledge of at least one area within psychology. Students must take the following courses:

Content Core

- SW250-PS, Psychological Inquiry or equivalent, or NW220-PS, Behavioral Science
- PS202, Learning
- PS235, Biological Bases of Behavior
- PS320, Life Span Developmental Psychology
- PS350, Social Psychology
- PS385, Cognitive Processes
- PS440, Psychology of Personality

Methodological Core

- PS210, Research Methods/Statistics I
- PS211, Research Methods/Statistics II
- PS310, Advanced Statistics in Psychology

Specialized Courses

- One additional psychology elective at the 300–400 level
- One additional psychology elective at the 400 level
- One 400-level seminar (from the list of five special-topics seminars)

Psychology majors are encouraged to include courses in anthropology, the biological sciences, chemistry, computer science, mathematics, philosophy, physics, and sociology as they plan their undergraduate career.

Requirements for the Minor

A minor in psychology (21 or 23 credit hours) consists of: 1) SW250-PS or equivalent, or NW220-PS; 2) PS210 and PS211; 3) any three of PS202, PS235, PS320, PS350, PS385, or PS440; and 4) one additional psychology course at the 300–400 level (including courses in the previous list).

Core Courses Offered by Psychology

NW220-PS, Behavioral Science: Students will learn the core theories in psychology and the methods used to derive and test the adequacy of those theories. Included in this are concepts of behavioral measurement and statistics, operational definitions used to assess theoretical concepts/mechanisms, hypothesis testing, and scientific report writing according to APA guidelines. Each content area will be covered through current and past theories and their methods of testing theoretical adequacy. (U)(5) Occasionally.

NW221-PS, Human Behavioral Measurement: An introduction to the philosophy and nature of science and scientific reasoning as applied to the problem of measuring human cognition and behavior. Topics include the development of surveys, tests, time and event sampling, reaction time measures, signal detection methods, as well as physiological measures of human behavior. (U)(5) Occasionally.

SW225-PS, Humans and the Natural Environment: Understanding how people think about and interact with nature is crucial for promoting both human well-being and environmental sustainability. We will apply psychological research on human cognitive, emotional, and behavioral responses to nature in hopes of fostering interaction with nature and encouraging conservation-oriented behavior at both individual and societal levels. (U)(3) Annually, term varies.

SW250-PS, Psychological Inquiry: An introduction to the general principles and facts of behavior, cognition, and emotion as established by the methods of social science. (U)(3) Fall and spring.

Psychology Courses

PS105, Careers in Psychology: Overview of major's program. Discussions of potential career options and credentials required for each. Outside speakers. Development of statement of career objectives. Pass/fail credit. (U)(1) Spring.

PS202, Learning: A survey of various types of learning, including classical conditioning, instrumental conditioning, and observational learning. The course introduces behaviorist theories of learning for both humans and animals, and includes discussion of theoretical and methodological issues. Prerequisite: C- or better in SW250-PS or NW220-PS, or permission of instructor. (U)(3) Fall and spring.

PS210, Research Methods/Statistics I: This course is the first in a two-course sequence designed to introduce students to research methods and statistics commonly used in psychology. Prerequisite: Prerequisite: C- or better in SW250-PS or NW220-PS, or permission of instructor. (U)(3) Fall and spring.

PS211, Research Methods/Statistics II: A continuation of Research Methods/Statistics I. This semester focuses on more advanced research and statistical techniques commonly used in psychology. Prerequisite: C- or better in Research Methods/Statistics I or permission of instructor. (U)(3) Fall and spring.

PS235, Biological Bases of Behavior: Relations between the anatomy and physiology of the organism and its behavior. Prerequisite: Prerequisite: C- or better in SW250-PS or NW220-PS, or permission of instructor. (U)(3) Fall and spring.

PS305, Psychology of Gender: This course emphasizes the biological, cognitive, social, and cultural factors that produce, enhance, and maintain similarities and/or differences in men's and women's behavior and psychological functioning. Applied topics related to gender will also be covered. Introductory psychology is strongly recommended. (U)(3) Occasionally.

PS310, Advanced Statistics in Psychology: This advanced course on the use of statistics to analyze psychological data is the culminating course in the statistics/methods sequence in the department. Emphasis is given to both the logical and the computational aspects of statistics. Prerequisite: C- or better in PS201, or C- or better in PS210 and PS211, or permission of instructor. (U)(3) Fall and spring.

PS320, Life Span Developmental Psychology: Behavioral, cognitive, and developmental principles and theories of human psychological development. Special emphasis is placed on the development of intellectual, emotional, perceptual, linguistic, and social behavior. Prerequisite: C- or better in SW250-PS or NW220-PS, or permission of instructor. (U)(3) Fall and spring.

PS333, Human Sexuality: This survey course is intended to provide an introduction to the scientific study of human sexuality. Although psychological approaches to sexuality will be emphasized, the course will be grounded in the biopsychosocial model and will incorporate perspectives from a variety of disciplines. Prerequisite: C- or better in SW250-PS or NW220-PS, or permission of instructor. (U)(3) Occasionally.

PS350, Social Psychology: A study of variables in a social context, which may help determine the cognition, perception, and behavior of the individual. Special emphasis is placed on the current theory and research of social psychology. Prerequisite: C- or better in SW250-PS or NW220-PS, or permission of instructor. (U)(3) Fall and spring.

PS360, Industrial/Organizational Psychology: Psychology's methods and principles are applied to both "industrial" topics associated with human resources management such as employee selection and training as well as "organizational" topics such as motivation, leadership, and stress. Prerequisite: C- or better in SW250-PS or NW220-PS, or permission of instructor. (U)(3) Occasionally.

PS385, Cognitive Processes: A compare-and-contrast theory course, covering basic issues in memory, information processing, problem solving, psycholinguistics, artificial intelligence, and expert systems as they reflect memory abilities and thought processes in people. Prerequisite: C- or better in SW250-PS or NW220-PS, or permission of instructor. (U)(3) Fall and spring.

PS391S, Internship: An opportunity for the qualified student to participate in a supervised work experience in a setting pertinent to the major area of study. Open to junior and senior majors with permission of instructor. May be repeated up to 6 hours. (U)(1) Fall and spring.

PS396, Directed Research: Students working on faculty research can earn research credit. Students will help run experiments, read relevant literature, and write papers on related topics. Students gain hands-on research experience. Prerequisite: Permission of instructor. May be repeated up to six hours. (U)(1) Fall, spring, and summer.

PS412, Advanced Applied Neuroscience: This course provides an advanced overview of the principles and methods of neuroscience as applied to understanding brain systems and dysfunction. Prerequisite: C- or better in PS235, PS385 or permission of instructor. (U)(3) Fall and spring.

PS415, Psychological Testing: An introduction to the theory and problems involved in the measurement of psychological variables leading to critical discussion and analysis of tests of ability and personality. Prerequisite: Ten hours or permission of instructor. (U/G)(3) Occasionally.

PS420CW, History of Psychology: The historical antecedents of psychology leading to discussion of the events and trends of the recent past and their impact on modern psychology. Prerequisite: Ten hours or permission of instructor. (U/G)(3) Annually, term varies.

PS440W, Psychology of Personality: An intensive study of the more important theories regarding the nature and determinants of personality. Prerequisites: Ten hours or permission of instructor. (U/G)(3) Fall and spring.

PS441, Abnormal Psychology: Current research relating to description, classification, and dynamics of the varieties of deviant behavior including elementary consideration of diagnostic and therapeutic techniques. Prerequisite: Ten hours or permission of instructor. (U/G)(3) Fall.

PS443, Intervention in the Community/ Psychotherapy: An advanced examination and critique of the concepts and methods of psychological intervention in dealing with individuals facing psychological stress. Special attention is given to the heritage, assumptions, and success in application of psychotherapeutic techniques. Prerequisite: Ten hours or permission of instructor. (U/G)(3) Occasionally.

PS475, Advanced Seminar in Cognitive Psychology: This is a capstone course for learning and cognition. The topics will vary across semesters. They may include neural networks and connectionism, comparative cognition, theories of learning, eyewitness testimony, or other specialty areas in learning and cognition. Prerequisite: C- or better in PS 385 or permission of instructor. (U/G)(3) Occasionally.

PS476, Advanced Seminar in Biopsychology: Continued exploration within an area of biological psychology. The topic of each advanced seminar will be announced in the class schedule. Prerequisite: C- or better in PS 235 or permission of instructor. (U/G)(3) Occasionally.

PS477, Advanced Seminar in Social Psychology: A focused and in-depth examination of a specialized topic in the field of social psychology. Examples of such topics include: small-group processes, self-perception and disclosure, attribution, interpersonal attraction, altruistic behavior, social influence, attitude formation and change, and leadership. Prerequisite: C- or better in PS350 or permission of instructor. (U/G)(3) Occasionally.

PS478, Advanced Seminar in Developmental Psychology: Continued coverage of an area

within developmental psychology. The topic of each advanced seminar will be announced in the class schedule and will consist of an in-depth exploration of research and theory. Prerequisites: C- or better in PS210, PS211, and PS 320 or permission of instructor. (U/G)(3) Occasionally.

PS479, Advanced Seminar in Applied Psychology: Continued coverage of an area within applied psychology. The topic of each advanced seminar will be announced in the class schedule and will consist of an in-depth exploration of research and theory. Prerequisite: Ten hours or permission of instructor. (U/G)(3) Occasionally.

PS491, Seminar in Recent Psychological Literature. (U)(3) Occasionally.

PS496, Independent Study: This course provides the student with academic credit for the completion of projects not usually included in an academic program. Prerequisite: Ten hours and permission of instructor. (U/G)(1-6) Fall, spring, and summer.

PS499, Honors Thesis. (U)(3)

Science, Technology, and Environmental Studies

Administration

Carmen Salsbury, PhD, Program Director

Program Website

www.butler.edu/science-technology

The Science, Technology, and Environmental Studies Program supports two majors: Science, Technology, and Society and Environmental Studies. The program is dedicated to providing students with an interdisciplinary perspective regarding the complex relationship between science and technology and our health, our families and communities, and our environment. Students are challenged to explore the sociocultural, economic, and political dimensions of practices of scientific research and technological development, to learn how our understanding of these practices and their products are shaped by language and communication, and to contemplate the philosophical questions raised by this enlarged perspective on the natural world, our place in it, and our obligations toward it.

The science, technology, and society major prepares students for a number of career paths in health, education, law, public policy, communications, and other fields. The environmental studies major prepares students for careers related to the exploration,

management, preservation, and conservation of the natural environment. Both majors integrate the natural sciences (biology, chemistry, physics, and computer science), humanities (history, philosophy, and English), and social sciences (anthropology, political science, sociology, and psychology). Service learning and hands-on community service are strongly emphasized to afford students the opportunity to apply their knowledge to real-world problems and connect with community partners and potential employers.

Science, Technology, and Environmental Studies Student Learning Objectives

Students majoring in science, technology, and society will:

- Analyze and investigate the interaction between science and technology, and social forces (e.g., economics, culture, religion, and politics)
- Analyze and explain how science and technology influence and are influenced by language, communication, and practices of public translation and transmission
- Describe and assess the philosophical, scientific, and moral standards that should guide the conduct of scientific research and technological development
- Research, write, and speak from an interdisciplinary perspective about issues concerning science and technology as they relate to society

Students majoring in environmental studies will:

- Analyze and investigate the scientific basis of environmental issues facing both human societies and the rest of the living world in modern times
- Analyze and investigate challenges to solving environmental issues that stem from practical considerations tied to the political, economic, social, and ethical perspectives on the environment
- Research and communicate (in writing, orally, and symbolically) information from an interdisciplinary perspective pertaining to the environment

Degree Programs

- Major in Science, Technology, and Society (BA, BS)
- Major in Environmental Studies (BA, BS)
- Minor in Science, Technology, and Society
- Minor in Environmental Studies

Requirements for the Science, Technology, and Society Major

Core courses (12 hours):

- ST200, Introduction to Science Studies
- ST205, Science and Society Speakers Series (1-credit course that must be completed three times)

Two of the following:

- ST310, Social Studies of Science and Technology
- ST320, Philosophy of Science
- ST330, Language, Rhetoric, and Science

Eighteen hours of elective courses from various departments. Of these, 12 hours must be at the 300–400 level. A total of no more than three hours of independent study (ST401, ST402, or ST403) and/or internship credit (ST411–ST413, or ST416) can be used to satisfy this requirement. Additionally, no more than one of the research methods courses PS210, PS211, and SO393 may count toward this requirement.

Fifteen hours in the natural sciences and/or technology (engineering or computer science). One course from The Natural World requirement of the Core Curriculum can be used to satisfy part of this requirement. Natural science and/or technology courses that are also identified as science, technology, and society electives may be used either to satisfy the natural science/technology requirement or the elective requirement but not both. The 15 hours of science and/or technology courses are not understood to be part of the major, and as such, they may be counted toward a minor or major in a science and technology discipline.

Because of overlapping curricula, students may not double-major in science, technology, and society and environmental studies or combine a major in one of these areas with a minor in the other.

Requirements for the Science, Technology, and Society Minor

Core courses (seven hours):

- ST200, Introduction to Science Studies
- ST205, Science and Society Speakers Series (1-credit course that must be completed one time)

One of the following:

- ST310, Social Studies of Science and Technology
- ST320, Philosophy of Science
- ST330, Language, Rhetoric, and Science

Twelve hours of elective courses from various departments. Of these, nine hours must be at the 300–400 level. A total of no more than three hours of independent study (ST401, ST402, or ST403) and/or internship credit (ST411–ST413 or ST416) can be used to satisfy this requirement. Additionally, no more than one of the research methods courses PS210, PS211, and SO393 may count toward this requirement.

Ten hours in the natural sciences or technology (engineering or computer science). One course from The Natural World requirement of the Core Curriculum can be used to satisfy part of this requirement. Natural science and/or technology courses that are also identified as science, technology, and society electives may be used either to satisfy the natural science/technology requirement or the elective requirement but not both. The 10 hours of science or technology courses are not understood to be part of the minor, and as such, they may be counted toward a minor or major in a science and technology discipline.

Requirements for the Environmental Studies Major

Core courses (19 hours):

- ST200, Introduction to Science Studies
- ENV200, Introduction to Environmental Studies
- ST205, Science and Society Speakers Series (1-credit course that must be completed three times)
- ENV330, Geographic Information Systems

One of the following:

- ST310, Social Studies of Science and Technology
- ST320, Philosophy of Science
- ST330, Language, Rhetoric, and Science

Practical experience: three-credit requirement that can be satisfied by completing BI407, Environmental/Sustainability Practicum, an approved community-based internship, or another experiential learning course approved by the director.

Fifteen hours of elective courses from various departments. Of these, 12 must be at the 300–400 level. Further, six hours of the electives must be social-science-related and another six must be humanities-related. A total of no more than three hours of independent study or internship credit can be used to satisfy this requirement. Additionally, no more than one of the research methods courses PS210, PS211, and SO393 may count toward this requirement.

Fifteen hours of natural science courses, of which the following courses are required:

- NW207, Ecology and the Natural Environment or BI230, Ecology and Evolutionary Biology—Fundamentals
- CH105, General Chemistry 1
- CH106, General Chemistry 2

The 15 hours of natural science courses are not understood to be part of the major, and as such, they may be counted toward a minor or major in a science and technology discipline.

Because of overlapping curricula, students may not double-major in science, technology, and society and environmental studies or combine a major in one of these areas with a minor in the other.

Requirements for the Environmental Studies Minor

Core courses (nine hours):

- ST200, Introduction to Science Studies
- ENV200, Introduction to Environmental Studies

One of the following:

- ST310, Social Studies of Science and Technology
- ST320, Philosophy of Science
- ST330, Language, Rhetoric and Science

Nine hours of elective courses from various departments. Of these, six must be at the 300–400 level. Further, three hours of the electives must be social-science-related and another three must be humanities-related. A total of no more than three hours of independent study or internship credit can be used to satisfy this requirement. Additionally, no more than one of the research methods courses PS210, PS211, and SO393 may count toward this requirement.

Five hours of natural science credit is also required and can be satisfied by taking one of the following:

- NW207, Ecology and the Natural Environment
- BI230, Ecology and Evolutionary Biology—Fundamentals
- CH105, General Chemistry 1

The five hours of natural science courses are not understood to be part of the minor, and as such, they may be counted toward a minor or major in a science and technology discipline.

Core Course Offered by Science, Technology, and Society

TI261-STS, Science and Society: Introduction to key social, historical rhetorical, and societal

dimensions of a scientific field or discovery. Instructors will select the field or discovery but follow the same pedagogical model. (U)(3) Summer.

Science, Technology, and Society Courses

ST200, Intro to Science and Tech Studies: An introductory survey of the variety of humanistic and social scientific approaches to the study of science and technology. Topics include the social, political, cultural, and economic structure of science and technology, scientific objectivity, scientific communication and rhetoric, science education. (U)(3) Spring.

ST205, Science and Society Speakers

Seminar: This course is a companion seminar to the Woods Lectures in the Sciences and Mathematics. In addition to attending all Woods Lectures during the semester, students will attend preparatory and follow-up sessions in which they learn about these scientists' work and their relation to broader societal issues. Students will have opportunities to interact personally with some of the world's leading scientists, mathematicians, and technologists. (U)(1) Fall and spring.

ST310, Social Studies of Science and

Technology: This course investigates science and technology as socio-cultural processes, institutions, and products. It explores how the science and technology are embedded in society as a whole and how cultural variations affect their manifestations. Attention is given to the varying methods by which social scientists study science and technology. (U)(3) Fall, spring, and summer.

ST320, Philosophy of Science: An analysis of some philosophical questions about the natural sciences, including the problem of distinguishing science from pseudoscience, the nature of scientific explanation, the structure and confirmation of scientific theories, the relationship between theories in different scientific domains, scientific revolutions, and the relationship between science and reality. (U/G)(3) Occasionally.

ST330, Language, Rhetoric, and Science: This course investigates how language and rhetoric influence the production and communication of scientific and technological knowledge. We investigate the language of science, its development and its conventions, and its use and misuse. We explore how social, economic, and political influences affect scientific language and communication. (U)(3) Fall, spring, and summer.

ST390, Topics in Science, Technology, and Society: An investigation of a topic in the study of science, technology, and society. (U/G)(3) Occasionally.

ST391, Topics in Science, Technology, and Society: An investigation of a topic in the study of science, technology, and society. (U/G)(1) Occasionally.

ST392, Topics in Science, Technology, and Society: An investigation of a topic in the study of science, technology, and society. (U/G)(2) Occasionally.

ST401, Independent Study: Offers the qualified student of science, technology, and society the opportunity to pursue a topic of individual interest. Open only to juniors and seniors with the permission of the instructor and of the director of the STS program. (U/G)(1) Occasionally.

ST402, Independent Study: Offers the qualified student of science, technology, and society the opportunity to pursue a topic of individual interest. Open only to juniors and seniors with the permission of the instructor and of the director of the STS program. (U/G)(2) Occasionally.

ST403, Independent Study: Offers the qualified student of science, technology, and society the opportunity to pursue a topic of individual interest. Open only to juniors and seniors with the permission of the instructor and of the director of the STS program. (U/G)(3) Occasionally.

ST411, Internship: Offers the qualified student of science, technology, and society the opportunity to participate in a supervised work experience in a position that will enhance their understanding of STS issues. Prerequisites: Junior standing plus ST200 and one 300 level STS course. (U)(1) Fall, spring, and summer.

ST412, Internship: Offers the qualified student of science, technology, and society the opportunity to participate in a supervised work experience in a position that will enhance their understanding of STS issues. Prerequisites: Junior standing plus ST200 and one 300 level STS course. (U)(2) Fall, spring, and summer.

ST413, Internship: Offers the qualified student of science, technology, and society the opportunity to participate in a supervised work experience in a position that will enhance their understanding of STS issues. Prerequisites: Junior standing plus ST200 and one 300 level STS course. (U)(3) Fall, spring, and summer.

ST416, Internship: Offers the qualified student of science, technology, and society the opportunity to participate in a supervised work experience in a position that will enhance their understanding of STS issues. Prerequisites: Junior standing plus ST200 and one 300 level STS course. (U)(6) Fall, spring, and summer.

ST499, Honors Thesis. (U)(3) Fall and spring.

Science, Technology, and Society Elective Courses

Courses counting for elective credit come from various departments within the College of Liberal Arts and Sciences, as well as the College of Business, College of Communication, and College of Pharmacy and Health Sciences. A complete list of elective courses will be published on the program website each semester in advance of the advising and registration period.

Core Course Offered by Environmental Studies

NW207-BI, Ecology and the Natural Environment: This course will explore the foundational ecological principles that govern the interactions between species and the abiotic and biotic world and, in turn, determine patterns of distribution and abundance. Fundamental concepts of ecology at the population, community, and ecosystem levels will be emphasized. (U)(5) Spring.

Environmental Studies Courses

ENV200, Intro to Environmental Studies: This course examines the concept of the environment from the standpoint of the humanities, social sciences, and natural sciences. (U)(3) Annually, term varies.

ENV330, Geographic Information Systems: This course offers an introduction to the concepts, principles, and application of Geographic Information Systems (GIS). In this manner the course is both theoretical and practical, addressing the structure of geographic information systems and their use of spatial analysis and data management in environmental and related fields (e.g., political sciences, sociology, and journalism to name a few). (U)(4) Occasionally.

Environmental Studies Elective Courses

Courses counting for elective credit come from various departments within the College of Liberal Arts and Sciences, as well as the College of Business, College of Communication, and

College of Pharmacy and Health Sciences. A complete list of elective courses will be published on the program website each semester in advance of the advising and registration period.

Sociology and Criminology

Administration

William Watts, PhD, Department Chair

Professors

Kenneth D. Colburn Jr., PhD; Antonio V. Menendez, PhD; Katherine B. Novak, PhD; Marvin B. Scott, PhD

Assistant Professor

Krista M. C. Cline, PhD

Instructor

Jess Butler, PhD

Department Website

www.butler.edu/sociology-criminology

Why Study Sociology and Criminology?

Sociology and criminology majors are taught the basics of human interaction and relationships and acquire an understanding of social life, social change, and the social causes and consequences of social behavior. As all human behavior is primarily social, sociology promotes an awareness and understanding of a wide range of social and cultural issues, from the study of crime and deviance, to the study of social inequality and social welfare, to the study of racial, gender, and sexual diversity, to the study of globalization and multiculturalism. With an understanding of society and how the social context and social forces shape behaviors and an emphasis on strong critical-thinking and research skills, majors in sociology and criminology are well prepared for a wide range of opportunities after graduation.

Why Study Sociology and Criminology at Butler?

The Department of Sociology and Criminology aspires to be a cornerstone program in the social sciences, emphasizing writing and critical thinking, analytical skills, experiential learning, and an in-depth understanding of the changing world, including multicultural and global issues. The department provides comprehensive, sociology-based coursework in sociology, sociology with a specialization in social work and social policy, and criminology. Our program is distinguished by:

- A curriculum that emphasizes the connection between theory and practice. Students have numerous opportunities to apply what they have learned in the

classroom to real-world settings and to everyday life.

- Majors that culminate in a capstone experience. Students undertake and complete an independent empirical research project in their senior year that demonstrates their mastery of sociology or criminology. Students present their research findings at the Butler Undergraduate Research Conference or a professional meeting.
- An emphasis on multicultural and global issues. Our curriculum introduces students to other cultures and societies and prepares them for participation in an increasingly diverse and multicultural world.
- Student participation in internships and service-learning courses. Internships in criminal justice, human services, business, and community contexts provide students with practical experience and career opportunities. Service-learning courses promote learning through the active participation of students in the local community.
- Student engagement in the research process. Students have many opportunities to engage in the research process and to collaborate with faculty on research projects.
- A curriculum that prepares students for the job market and for advanced study. Graduates of the department work in a wide range of employment fields, including human services, social policy agencies, the criminal justice system, health care, and business. Majors also pursue advanced professional degrees in law and social work, as well as degrees in sociology, criminology, and other related fields.
- Numerous student opportunities beyond the classroom. The department sponsors a chapter of Alpha Kappa Delta, an international honor society for sociology. The Student Sociology Association conducts community-service projects such as tutoring disadvantaged youths and collecting food and blankets for the homeless. The association also sponsors speakers and a career panel each year.
- A diverse faculty of dedicated teachers and researchers. Faculty work closely with students and encourage student learning through hands-on experiences in and out of the classroom.

Sociology and Criminology Student Learning Outcomes

The core values of the Sociology and Criminology Department are placed squarely within a liberal arts tradition that strives to foster critical reflection, social awareness and responsibility, sociocultural diversity, and a global perspective. The department's central mission is to

- (a) foster a knowledge of social and cultural issues, theories, and research methods;
- (b) cultivate students' abilities to succinctly and clearly express this knowledge in oral and written form;
- (c) provide opportunities for students to utilize these acquired skills in an applied context; and
- (d) develop an awareness of global and multicultural issues. Students will develop a perspective that emphasizes critical inquiry and reasoning to address challenging social problems. Ultimately, our program and curriculum cultivates values that will shape students into lifelong, active, responsible, and informed members of the greater community.

Degree Programs

- Major in Sociology (BA)
- Major in Sociology with a Specialization in Social Work and Social Policy (BA)
- Major in Criminology (BA)
- Combined Major in Sociology and Criminology (BA) (see Combined Majors)
- Combined Major in Sociology with a Specialization in Social Work and Criminology (BA) (see Combined Majors)
- Combined Major in Criminology and Psychology (BA) (see Combined Majors)
- Combined Major in Sociology with a Specialization in Social Work and Psychology (BA) (see Combined Majors)
- Minor in Sociology
- Minor in Criminology

Requirements for the Sociology Major

The major requires 39 hours plus an internship or service-learning course.

Major Core Requirements (15 hours)

- SW200SO, Understanding Society
- SO205, Contemporary Social Issues
- SO391W, Social Theory Seminar
- SO393, Research Methods Seminar
- SO486, Senior Research Seminar I
- SO487, Senior Research Seminar II

NOTE: SO499, Honors Thesis may be completed in place of SO486 and SO487.

Additional Area Requirements (24 hours). At least one course from each of the following four areas:

Sociocultural Institutions

- SO301, Families and Gender Roles
- SO303, Political Behavior, Polity, and Society
- SO311, Law and Society
- SO315, Film, Media, and Society
- SO319, Mental Illness, Culture, and Society
- SO351, Punishment and Society
- SO353, Juvenile Justice and Delinquency Social Structure and Differentiation
- SO317, Gender and Society
- SO321, Crime and Society
- SO323, Racial and Ethnic Relations
- SO325, Class, Status, and Power
- SO326, Gender, Race, and Crime
- SO329, The Sociology of Racism

Sociocultural Process and Integration

- SO339, Violence, Media, and Culture
- SO341, Self and Society
- SO343, Popular Culture
- SO345, Deviance and Social Control
- SO347, Urban Community
- SO349, Social Movements

Global and Comparative Studies

- SO331, Latin American Societies
- SO333, European Societies
- SO335, Global Society
- SO355, International Crime

An internship or service-learning course is required.

Requirements for the Sociology Minor

The minor comprises 21 hours. Core Requirements (9 hours):

- SW200SO, Understanding Society
- SO391W, Social Theory Seminar
- SO393, Research Methods Seminar

Additional Area Requirements (12 hours): at least one course from each of the four concentration areas in sociology (see sociology major).

Requirements for the Sociology Major with a Specialization in Social Work and Social Policy

The major requires 39 credit hours plus an internship or service-learning course.

Major Core Requirements (15 credit hours)

- SW200SO, Understanding Society
- SO205, Contemporary Social Issues

- SO391W, Social Theory Seminar
- SO393, Research Methods Seminar
- SO486, Senior Research Seminar I
- SO487, Senior Research Seminar II

Note: SO499 Honors Thesis may be completed in place of SO486 and SO487.

Social Work Practice Requirements (9 hours)

- SO381, Social Work and Social Policy
- SO383, Social Work Methods
- SO385, Practice Skills in Social Work

Additional Area Requirements (15 hours). At least one course from each of the following four areas:

Sociocultural Institutions

- SO301, Families and Gender Roles
- SO303, Political Behavior, Polity, and Society
- SO311, Law and Society
- SO315, Film, Media, and Society
- SO319, Mental Illness, Culture, and Society
- SO351, Punishment and Society
- SO353, Juvenile Justice and Delinquency

Social Structure and Differentiation

- SO317, Gender and Society
- SO321, Crime and Society
- SO323, Racial and Ethnic Relations
- SO325, Class, Status, and Power
- SO326, Gender, Race, and Crime
- SO329, The Sociology of Racism

Sociocultural Process and Integration

- SO339, Violence, Media, and Culture
- SO341, Self and Society
- SO343, Popular Culture
- SO345, Deviance and Social Control
- SO347, Urban Community
- SO349, Social Movements

Global and Comparative Studies

- SO331, Latin American Societies
- SO333, European Societies
- SO335, Global Society
- SO355, International Crime

An internship or service-learning course is required.

Requirements for the Criminology Major

The major requires 39 credit hours plus an internship or service-learning course.

Major Core Requirements (15 hours)

- SW200SO, Understanding Society
- SO205, Contemporary Social Issues
- SO391W, Social Theory Seminar
- SO393, Research Methods Seminar

- SO486, Senior Research Seminar I
- SO487, Senior Research Seminar II

Note: SO499 Honors Thesis may be completed in place of SO486 and SO487.

Additional Area Requirements (24 hours)

Law and Crime Area (5 courses; 15 hours)

- SO321, Crime and Society and four of the following:
 - SO311, Law and Society
 - SO326, Gender, Race, and Crime
 - SO339, Violence, Media, and Culture
 - SO345, Deviance and Social Control
 - SO351, Punishment and Society
 - SO353, Juvenile Justice and Delinquency

Sociocultural Diversity (1 course; 3 hours)

- SO317, Gender and Society
- SO323, Racial and Ethnic Relations
- SO325, Class, Status, and Power
- SO329, The Sociology of Racism

Global and Comparative Studies (1 course; 3 hours)

- SO331, Latin American Societies
- SO333, European Societies
- SO335, Global Society
- SO355, International Crime

Sociology Elective (1 course; 3 hours): any other 300-level sociology course, excluding SO381, SO383, or SO385.

An internship or service-learning course is required.

Requirements for the Criminology Minor

The minor requires 21 credit hours.

Minor Core Requirements (9 hours)

- SW200SO, Understanding Society
- SO391W, Social Theory Seminar
- SO393, Research Methods Seminar

Additional Area Requirements (12 hours)

Crime and Law Area (3 courses; 9 hours)

- SO321, Crime and Society and two of the following:
 - SO311, Law and Society
 - SO326, Gender, Race, and Crime
 - SO339, Violence, Media, and Culture
 - SO345, Deviance and Social Control
 - SO351, Punishment and Society
 - SO353, Juvenile Justice and Delinquency
 - SO355, International Crime

Sociocultural Diversity (1 course; 3 hours)

- SO317, Gender and Society
- SO323, Racial and Ethnic Relations
- SO325, Class, Status, and Power
- SO329, The Sociology of Racism

Core Course Offered by Sociology

SW200-SO, Understanding Society: An exploration of key concepts, research methods, and theoretical perspectives in sociology applied to a specific topic, theme, or set of topics. Concepts covered include: culture, socialization, deviance, social structure, social stratification and inequality (including class, race, and gender), and social institutions. Prerequisite to all upper-level sociology courses; counts for major/minor credit (U)(3). Fall and Spring

Sociology Courses

SO205, Contemporary Social Issues: Analysis of selected social problems in contemporary society using readings from both academic and popular sociological analysis. The emphasis of this course is on developing in the students the ability to identify social phenomena, to understand how these causes may influence social policy, and to develop an ability to conduct basic research on social issues using social science methodology, including documentary and literature-based search skills from bibliographical databases and online web-based materials. Prerequisite: SW200-SO or any introduction to social sciences course. (U)(3) Fall.

SO293, Statistics for Social Research:

An introduction to statistical techniques and their application to problems in social research. This course covers descriptive and inferential statistics including measures of central tendency and variability, correlation, cross-classification, sampling, and statistical inference, and an introduction to multivariate analysis. An emphasis is placed on the sociological application of such techniques, and on developing an understanding of when they are appropriate, and the information that they yield. Students will also learn to use the computer in data analysis. Prerequisite: MA101 or equivalent. (U)(3) Spring.

SO301, Families and Gender Roles: The organization and functions of marriage and the family. Cross-cultural and historical perspectives provide background for analysis of contemporary family patterns. Prerequisite: SW200-SO. (U/G) (3) Occasionally.

SO303, Political Behavior, Polity, and Society: An analysis of social power and

decision-making in small groups, complex organizations, communities, and societies; social and personality factors, and political behavior; and political movements and social change. Prerequisite: SW200-SO. (U/G)(3) Occasionally.

SO311, Law and Society: An analysis of the legal system, legal doctrines, and legal institutions as social phenomena. The focus is on law in action as it reflects the relationship between law and society. (U/G)(3) Fall.

SO315, Film, Media, Society: This course examines how film and electronic media have impacted our cultural values and social institutions. Film and media will be studied sociologically both as a form of popular culture (symbolic analysis) and as a new social institution in its own right (structural analysis). Prerequisite: SW200. (U)(3) Occasionally.

SO317, Gender and Society: An examination of gender as a system of stratification and a social construction that changes over time and differs cross-culturally. Focus is on the structural and interactional aspects of gender inequality and the intersection of gender, class, race, and sexuality. Prerequisite: SW200. (U)(3) Occasionally.

SO319, Mental Illness, Culture, and Society: A sociological analysis of mental health and mental illness. This course examines the social, cultural, and political factors involved in the definition of mental illness and the control of mental illness in society. Emphasis is placed on labeling theory; on the impact of status characteristics (e.g., race, social class, and gender) and social relationships on levels of stress and social functioning; and on legal and ethical issues associated with current health care trends, including the deinstitutionalization of mental patients and the movement toward community-based care. Prerequisite: SW200-SO or permission of the instructor. (U/G)(3) Occasionally.

SO321, Crime and Society: An analysis of the definition and extent of crime; the impact of crime on society; and the theoretical explanations of crime, offending, and victimization. Prerequisite: SW200 and junior standing. (U)(3) Occasionally.

SO323, Racial and Ethnic Relations: Analysis of the ethnic (including racial) composition of society, the minority group status of some ethnic groups, and the strains toward assimilation or cultural pluralism. Prerequisite: SW200-SO. (U/G)(3) Occasionally.

SO325, Class, Status, and Power: A study of the dynamics of class and caste, class mobility, power, authority, influence, and prestige in

different kinds of communities. Prerequisite: SW200-SO. (U/G)(3) Occasionally.

SO326, Gender, Race, and Crime: Current sociological and criminological theories will be used to examine gender and crime, race and crime, and the intersection between the two. We will cover topics such as: men and women as offenders and as victims, domestic violence, child abuse, and juvenile delinquency. Prerequisite: SW200. (U)(3) Occasionally.

SO329, The Sociology of Racism: This course is designed for students interested in understanding how racism affects our social institutions and interactions. We will take a close look at understanding prejudices and myths about race. A clear retrospective will be explored in events that have influenced the establishment of racist institutions and behaviors. Prerequisite: SW200-SO. (U/G)(3) Occasionally.

SO331, Latin American Societies: This course introduces the student to the culture and social structures of Latin American societies and aims at undermining the traditional stereotypes that have long been a part of Latin American images circulating throughout the United States. It examines in particular Latin America in the context of the globalizing of social life. Prerequisite: SW200-SO or any Introduction to Social Studies course. (U/G)(3) Occasionally.

SO333, European Societies: Politics, Culture, Economics, and the Process of European Integration: This course acquaints the student with the culture, economics, and politics of Western Europe and with the general process of European integration. First, it provides a general overview of contemporary Western Europe and then emphasizes the workings of the European Union, introducing the student to the organization and functioning of the different institutions of the European Union and interpreting the meaning of this process within the global context. (U/G)(3) Occasionally.

SO335, The Global Society: This course is about the constitution of the global system, and the processes which are reproducing and transforming the structures of globalization. The course acquaints the student with the process of worldwide economic, cultural, and political flows and provides an introduction to the organization and functioning of the global society. Prerequisite: SW200-SO or any Introduction to Social Sciences course. (U/G)(3) Occasionally.

SO339, Violence, Media, and Culture: This course examines the topic of crime in popular culture: crime as portrayed in print

and electronic media, film, and entertainment industries. We will study the “popular” manifestation of crime as it exists in the stories reported by news media and in the cultural images produced for mass entertainment. (U)(3) Occasionally.

SO341, Self and Society: The socialization of the individual; the bearing of culture and social structure on the formation of personality; and group influences upon human response and patterns of perception. Prerequisite: SW200-SO. (U/G)(3) Occasionally.

SO343, Popular Culture: An examination of the role and function of popular culture in generating and sustaining a common realm of meaning and values in contemporary society. Popular works of fiction, television, film, sporting events, parades, etc. will be considered. Prerequisite: SW200-SO. (U/G)(3) Occasionally.

SO345, Deviance and Social Control: The ways in which the discrepancies between social reality and the individual experience generate deviance, with emphasis on the roles of institutions and counter-institutions in maintaining or changing behavior patterns. Prerequisite: SW200. (U/G)(3) Occasionally.

SO347, Urban Community: Urban origins, the genesis of the modern city and the metropolitan area and region—structure, ecology, problems, and programs for their control. Prerequisite: SW200. (U/G)(3) Occasionally.

SO349, Social Movements: Analysis of representative economic, political, religious, and other social movements, defining typical lines of genesis, objectives, structures, leadership, and methods of operation. Prerequisite: SW200-SO. (U/G)(3) Occasionally.

SO351, Punishment and Society: Analyzes the incidence of deviance and crime, and the different approaches to social control and prevention of crime. It offers an introduction to penology and corrections and explores public reaction to contemporary corrections. Prerequisite: SW200-SO. (U/G)(3) Spring.

SO353, Juvenile Justice and Delinquency: This course will focus on the topic of childhood and juvenile justice from a sociological perspective. We will examine how society provides a framework for how we understand, interact with, and pattern our relationships with children in general and with “delinquent” children in particular. Prerequisite: SW200. (U/G)(3) Occasionally.

SO355, International Crime: This course is intended to introduce students to the basic concepts and problems of international crime and international law. It will also address the definition, detection, prosecution, sentencing, and impact of international crime, including terrorism. Special consideration is given to the role of international law, including international organizations and enforcement practices. The course will cover the major topics in the international legal system, such as the sources and subjects of international law, the jurisdiction of states (relationship between international law and the internal law of states), and the use of force. Prerequisite: SW200-SO or any Introduction to Social Sciences course. (U)(3) Occasionally.

SO360, Selected Topics in Criminology: Designed to give the advanced undergraduate student academic flexibility. Likely topics are Policing a Democratic society, Ethical Issues in Criminal Justice, Legal Aspects of Law Enforcement, History of the Criminal Justice System, and Crime in Comparative Perspective. Prerequisite: SW200-SO. (U/G)(3) Occasionally.

SO370, Selected Topics in Social Work: An in-depth analysis of the theory, methodology, and subject matter in an area not provided for the current offerings of the department. Prerequisite: SW200-SO. (U)(3) Occasionally.

SO380, Selected Topics in Sociology: An in-depth analysis of the theory, methodology, and subject matter in an area not provided for in the current offerings of the department. Prerequisite: SW200-SO. (U/G)(3) Occasionally.

SO381, Social Work and Social Policy: The history and types of public and private social work in the United States from early colonial times to the present. Prerequisites: SW200SO or permission. (U)(3) Fall.

SO383, Social Work Methods: An introduction to social work fields of practice and the methods used by social work professionals. Prerequisites: SO381 or permission. (U)(3) Spring.

SO385, Practice Skills in Social Work: This foundation practice course focuses on basic social work theories and skills that are necessary when working with a wide variety of client systems; individuals, families, small groups, communities, and organizations. Students will have opportunities to learn about themselves and will examine their personal values and any conflict between personal and professional values so they are able to practice with diverse

population in a confident and professional manner. Prerequisites: SO381 or permission. (U)(3) Spring.

SO391, Social Theory Seminar: An historical and analytical survey of major contributions to social theory with major emphasis upon late 19th-century, 20th-century and contemporary developments. Prerequisites: SW200, two sociology courses, and junior standing. (U)(3) Spring.

SO393, Research Methods Seminar: The principal methods of social research—formation of research problem concepts and hypotheses; measurement and data collection and analysis; and reporting of research. Prerequisites: SW200, SO293, or equivalent, and junior standing. (U/G)(3) Fall and spring.

SO461, Directed Research: An independent research experience in which students assist a faculty member on a research project. Activities may include library research, data collection, data entry, and data analysis. Prerequisites: Permission of instructor, two courses in sociology, and junior standing. (U)(1) Fall and spring.

SO462, Directed Research: An independent research experience in which students assist a faculty member on a research project. Activities may include library research, data collection, data entry, and data analysis. Prerequisites: Permission of instructor, two courses in sociology, and junior standing. (U)(2) Fall and spring.

SO463, Directed Research: An independent research experience in which students assist a faculty member on a research project. Activities may include library research, data collection, data entry and data analysis. Prerequisites: Permission of instructor, two courses in sociology, and junior standing. (U)(3) Fall and spring.

SO481, Independent Study: An opportunity for qualified students to pursue a topic of individual interest. Open to seniors and juniors with permission of department chair. (U/G)(1) Fall and spring.

SO482, Independent Study: An opportunity for qualified students to pursue a topic of individual interest. Open to seniors and juniors with permission of department chair. (U/G)(2) Fall and spring.

SO483, Independent Study: An opportunity for qualified students to pursue a topic of individual interest. Open to seniors and juniors with permission of department chair. (U/G)(3) Fall and spring.

SO484, Internship: A program offering the superior student the opportunity to participate in a closely supervised work experience in a setting pertinent to the major area of study. Majors are strongly encouraged to engage in the internship experience. Prerequisites: SW200-SO, 10 hours in sociology, and permission of the department chair. (U/G)(3) Fall and spring.

SO485, Internship: A program offering the superior student the opportunity to participate in a closely supervised work experience in a setting pertinent to the major area of study. Majors are strongly encouraged to engage in the internship experience. Prerequisites: SW200-SO, 10 hours in sociology, and permission of the department chair. (U/G)(6) Fall and spring.

SO486, Senior Research Seminar I: First of a two-course sequence in the senior year. Capstone experience with emphasis on synthesis, integration, and application of theories and methods in completion of an independent student research project. Proposal, IRB approval, and data collection are expected. Prerequisites: SO391, SO393, senior. (U/G)(2) Fall.

SO487, Senior Research Seminar II: Second of a required two-course sequence. Capstone experience with emphasis on synthesis, integration, and application of theories and methods in completion of an independent student research project. Data collection and analysis, final paper, and URC presentation are expected. Prerequisite: SO486. (U/G)(1) Spring.

SO499, Honors Thesis. (U)(3) Fall.