

Anthropology/Sociology

Degree Program

Anthropology Program (BA)

Outcomes

Objective: 1 - Knowledge of Content

Description:

Students will demonstrate knowledge of the basic concepts and theories of the general discipline anthropology including all four major subfields (sociocultural, biological, archaeological, linguistic).

Objective: 2 – Knowledge of Research Methods

Description:

Students will demonstrate knowledge of methodological approaches used by anthropologists in all four subfields (sociocultural, biological, archaeological, linguistic).

Objective: 3 – Research and Writing Skills

Description:

Students will be able to demonstrate research and writing skills sufficient to locate and consult published works relevant to an anthropological investigation and to write an anthropological paper that is coherent, cogent, and grammatically correct.

Objective: 4 – Critical and Analytical Skills

Description:

Students will be able to demonstrate critical skills sufficient to analyze and evaluate readings relevant to anthropology.

Degree Program

B.A. Sociology

Goals/Outcomes

Based on the Departmental mission and goals, the following sets of knowledge and skills are central to the undergraduate programs in sociology.

A. **Knowledge Goals** will include the following targeted areas:

1. Knowledge of the basic concepts and theories pertinent to the understanding of human societies.

2. Knowledge of the structure of modern American society, its social stratification, its ethnic, racial, religious and gender differentiation, and its main social institutions including family, polity, economy, and religion.
3. Knowledge of the basic social processes that maintain and alter social structure, especially the processes of integration, organization, and conflict.
4. Understanding of the diversity of human societies, including the differences between major historical types such as foraging, agricultural, industrial, and post-industrial societies.

B. **Skills goals** will include the following targeted areas:

1. Research and Writing Skills sufficient to locate and consult works relevant to a sociological investigation and to write a sociological paper that is coherent, cogent, and grammatically correct.
2. Methodological skills sufficient to understand the basic procedures of sociological research and to understand the problems of reliability and validity.
3. Statistical skills sufficient to understand and interpret the results of sociological research.
4. Critical Skills sufficient to analyze and evaluate sociological writings.

Biology

Degree Programs

Biology Program (BA)

Ecology Program (BS)

Microbiology Program (BS)

Medical Technology Program (BS)

Cell and Molecular Biology Program (BS)

Outcomes

Objective: 1 – Acquired Biological Knowledge

Description

Students should acquire the knowledge base needed as preparation for either postgraduate education or employment in fields related to the biological sciences. Knowledge is defined as factual information and the understanding of appropriate instrumentation and laboratory methods, largely as presented in lectures and laboratories, which provide students with an understanding of the history, breadth, process and terminology of biology as a discipline.

Objective: 2 – Acquired Oral/Writing Skills

Description

Students should acquire skills in oral and written communication. Skills in oral communication are achieved largely through the presentation of individual or group project reports, and through attendance at seminars. Writing skills are achieved largely through a) the preparation of individual papers, and b) the reading of primary literature.

Objective: 3 – Acquired Analytical/Quantitative Skills

Description

Students should acquire skills in analytical/quantitative thinking. These skills are largely achieved through a) the synthesis of widely ranging information derived from primary literature, b) the design of experiments, c) data acquisition, and d) preparation of computer databases for information retrieval, statistical analysis, and data presentation.

Degree Program

Biology (B.S.Ed.)

Student Learning Objectives

1. Students should acquire the **knowledge** base needed as preparation for a professional career as a biology educator at the secondary level and for postgraduate education, or employment in fields related to the biological sciences. Knowledge is defined as

factual information and the understanding of appropriate technological and laboratory methods, largely as presented in lectures and laboratories, which provide students with an understanding of the history, breadth, process and terminology of biology as a discipline.

2. Students should acquire skills in **analytical/quantitative thinking**. These skills are largely achieved through a) the synthesis of widely ranging information derived from primary literature, b) the design of experiments, c) data acquisition, and d) preparation of computer databases for information retrieval, statistical analysis, and data presentation.
3. Students should acquire skills in **written and oral communication**. Writing skills are achieved largely through a) the preparation of individual papers and lesson plans, b) the reading of primary literature. Skills in oral communication are achieved largely through the practice teaching of lesson plans, the presentation of individual or group project reports, and through attendance at seminars.
4. Students should acquire skills in **translating content knowledge into instruction**. These skills include selecting and implementing the most effective means of science instruction for secondary students in diverse pedagogical environments. These skills are achieved through the culmination of experiences offered by the Department of Biology and the Department of Professional and Secondary Education.

Chemistry

Degree Program

Chemistry (BS) and Core for all Programs

Student Learning Outcomes

1. Our graduates will be able to think and communicate like scientists. They will be able to use the systems and methods of science to analyze practical problems.
 - They will be able to use the systems and methods of science to analyze practical problems.
 - They will be able to gain access to and use the scientific literature and data compilations, both in print and in digital formats.
 - They will be able to critically evaluate scientific data and resulting claims, including their own results.
 - They will be able to communicate effectively with a technically trained audience or with non-specialists.
2. Each graduate will demonstrate a strong enough grounding in the concepts of atomic theory, chemical bonding, chemical equilibrium, and chemical dynamics to allow our graduates to apply these concepts to practical problems in synthesis, analysis, and formulation of pure substances or mixtures.
3. Each graduate will demonstrate laboratory skills in synthesis, separation, and analysis, the skills to use standard laboratory equipment, to use and analyze results from chemical instrumentation, to handle chemical substances safely, to use relevant computer software, and to keep systematic records.
4. Each graduate will demonstrate a basis framework of chemical and physical knowledge regarding a variety of substances, processes, and properties.

Degree Program

Forensic & Toxicological Chemistry (BS)

Student Learning Outcomes in addition to Core

1. Each graduate will be able to apply principles of genetics and molecular biology to crime scene evidence.
2. Each graduate will be able to integrate theory and laboratory practice to solve problems accessible to atomic, molecular, material science, and/or molecular biological interpretations. In particular, a student will be able to integrate theory and lab practice for the purpose of examining physical and biological evidence from crime scenes.

Degree Program

Chemistry Education (BS)

Student Learning Outcomes in addition to Core

1. Our graduates will have a fundamental knowledge of the other physical and biological sciences and of mathematics.
2. Our graduates will have knowledge of current pedagogical theories.
3. Our graduates will be reflective practitioners and life-long learners.
4. Our graduates will be able to meet the needs of diverse student populations.

Degree Program

Chemistry – Biology (BS)

Student Learning Outcomes in addition to Core

1. Our graduates will demonstrate the knowledge base needed to prepare for and gain admission to medical, dental, and veterinary school.
2. Our graduates will demonstrate knowledge of ethical issues affecting the practice of medicine today.

Degree Program

Biochemistry (BS)

Outcomes in addition to Core

1. Our graduates will be able to act as functional, scientific members of society. They will demonstrate the ability to view biochemistry from a scientific and humane perspective. They will possess the capability to deal with social issues as humans and as scientists.
2. Our graduates will demonstrate the knowledge base and technical skills necessary to gain admission to graduate and professional schools and to obtain employment in the biotechnological and pharmaceutical industries. They will have the knowledge to adapt to new technology.

Communication Studies

Degree Program

Communication Studies (BA)

Education – Communication (BS)

Note: Department is putting SLO goals on website

Computer Science

Note: Department is putting SLO goals on website.

Degree Program

Computer Science and Information Sciences (BS)

Objective:

1. Preparation for Career or Graduate School: Upon graduation, Computer Science majors will be able to enter a career or graduate school.
2. Research Skills: Computer science majors will be able to apply their course learnings to research leading either to graduate study or to continuation of research in an industrial setting.
3. State of the Art Training: Computer science majors will demonstrate proficiency in the latest, cutting-edge technology.

Degree Program

Master of Science in Computer Science

Objective

1. Preparation for Career or Ph.D Program: Upon graduation, students will be well-prepared to enter a career.
2. Research Skills: Students will be able to apply their course learnings to research leading either to a Ph.D. program or to begin a research career in an industrial setting.
3. State of the Art Training: Student will have the opportunity to be exposed to the latest, cutting-edge technology.

English

Note: English Dept. will post SLO goals on website.

Degree Program

Bachelor of Arts in Literature

Objectives/Outcomes

1. Knowledge of English and American Literature
 - Shows familiarity with a period, author, trend, movement, or paradigm from English literature
 - Shows familiarity with a period, author, trend movement, or paradigm from American literature
2. Ability to situate texts within literary cultural contexts.
 - Recognizes generic traditions and innovations
 - Recognizes authorial influences across time
 - Demonstrates understanding of the ways in which literary texts can reflect or shape the representation of historical events
 - Analyzes the ways in which literary texts both reflect and help to construct such social categories as race, class, gender, and sexuality
3. Ability to Write, Analytically, Critically, and Knowledgably about Literature.
 - Develops a thesis
 - Organizes writing
 - Supports analysis with textual evidence
 - Follows conventions of logical argumentation
 - Demonstrates control of language use and mechanics
 - Demonstrates understanding of the conventions of literary criticism (including MLA style)

Degree Program

Bachelor of Science in Education in English

Outcomes/Objectives

1. Students will engage in rigorous academic writing informed by critical thinking. Student writing will demonstrate sharp focus, substantial content, sophisticated organization, precise style, and evident control of conventions. Students will exhibit these traits over a variety of types of writing for a variety of types of audiences.
2. Student teachers will know and demonstrate current pedagogical principles and demonstrate they know how to apply these to obtain employment, as attested to by the professional portfolios they complete during their student teaching experience (EDS 411-412). These portfolios contain resumes, letters of

recommendation, employment goals, statements of philosophy, and records of the student teaching experience.

3. Student teachers will develop good working relations with their co-op teachers, their students, and other teachers in their schools. This means that they must be judged as well prepared in the content of their discipline, they must exhibit good work habits, and they must exhibit respect for and understanding of diversity.

Degree Program

M.A. Program

Goals/Objectives/Outcomes

Program Goal #1: Critical Literacy

We are committed to enabling students to become critical and insightful readers and writers of texts through acquaintance with a range of literary, cultural, and rhetorical theories.

Objective for Goal #1: this program goal will be achieved by:

- Offering courses that study and employ various literary, cultural, and rhetorical theories in both the reading and writing of texts.
- Requiring that student coursework demonstrate familiarity with and the ability to apply various literary, cultural, and rhetorical theories.
- Requiring that the capstone (thesis, course, or portfolio) demonstrate thorough understanding of a theoretical position and competent application of that position to criticism or composition of text.

Student Learning **Outcomes** for Goal #1: By the end of the program, students should be able to

- Describe the values and methodologies of a selection of literary/cultural/rhetorical theories.
- Analyze texts through particular theoretical frameworks (literary, cultural, rhetorical).
- Write from a theoretically informed perspective.

Program Goal #2: Diversity Awareness

We are committed to preparing students to pursue later educational or professional endeavors in English Studies and to participate in civic life with enhanced awareness of diversity. Therefore, this program intends to educate students in the diversity of discourses relating to class, gender, sexuality, nationality and ethnicity.

Objectives for Goal#2: This program goal will be achieved by:

- Offering courses that include texts from various cultural traditions, which are diverse especially in terms of class, gender, sexuality, race and ethnicity.
- Encouraging that students' textual analyses in their assignments demonstrate an awareness of the rhetorical factors (purpose, audience, context, voice, etc.) relating to class, gender, sexuality, nationality and ethnicity.
- Encouraging students to demonstrate in other writing for courses a similar awareness of the rhetorical factors relating to diversity (purpose, audience, context, voice, etc.).

Student Learning **Outcomes** for Goal#2: By the end of the program, students should be able to:

- Analyze the influence on reading and writing of factors such as class, gender, sexuality, race and ethnicity.
- Describe the workings of canon formation in various literary/cultural traditions.
- Generate work that shows awareness of diverse audiences, purposes, contexts, voices, etc.

Program Goal #3: Professionalization

We are committed to developing students; aptitude to participate in the intellectual life of the profession. Therefore, this program intends to train students to professional standards of teaching, scholarship, and writing.

Objectives for Goal #3: This program goal will be achieved by:

- Offering a variety of courses that study the teaching of writing and literature.
- Introducing students in the required courses to the elements of information literacy specific to the study of English.

Student Learning **Outcomes** for Goal #3: By the end of the program, students should be able to:

- Frame a research project with appropriate methodology, find and employ research tools of the discipline, evaluate sources and content specific to the field, and use appropriate standards of documentation.
- Participate in the conversations and debates in professional or academic settings.

Foreign Languages

Degree Program

Undergraduate Majors:

French
German
Latin
Russian
Spanish

Master's Programs:

French
Spanish

Expected Learning Outcomes for Foreign Language Majors: B.A. with Elective Certification, M.A. and M. Ed

The assessment data that FLG collects is highly quantitative (drawn from Praxis scores, placement exam scores, NCATE-mandated oral proficiency interviews and written exams administered by the American Council on the Teaching of Foreign Languages (ACTFL), and from scores produced twice a semester from standardized exams).

In its *Mission Statement*, the Department of Foreign Languages strives to prepare and develop competent language educators in second language proficiency, linguistic, literary, and cultural content, as well as pedagogical skills. The Foreign Languages Certification program at West Chester promotes the philosophy of the University's Department of Professional and Secondary Education, which maintains that learning and teaching are active, collaborative, constructive, and continuous processes that enable faculty and students to reflect upon and analyze their own learning and teaching. The Foreign Languages Certification program at West Chester promotes a student-centered instruction model and high standards of scholarship in the undergraduate major concentrations of French, German, Latin, Russian, and Spanish, and in the masters programs in French and Spanish.

I. KNOWING THE CONTENT

The professional education program provides evidence that Foreign Language certification candidates complete a program of studies the same as the academic content area courses and required electives of a major in a bachelor's degree in a foreign language. The program shall require candidates to demonstrate their knowledge of and competence in teaching the fundamental concepts of foreign language to elementary, middle, and secondary school students (K-12) including:

I.A. Interpersonal communication (speaking and writing) in the target language at the advanced level including:

- engaging in formal and informal conversations,

- providing and obtaining information,
- expressing feelings and emotions,
- exchanging opinions

I.B. Interpretive communication (listening, reading, viewing) at the advanced level including:

- written, spoken, and visual language on a variety of topics and in authentic texts,
- main ideas and important details,
- using comprehension and interpretation strategies,
- socio-cultural nuances

I.C. Presentational communication (speaking and writing) at the advanced level including presenting information, concepts and ideas to an audience of listeners or readers on a variety of topics, using the target language

I.D. Structure of the language including demonstrating knowledge of advanced grammar and the linguistic aspects of the target language, including phonology, morphology, semantics and syntax. Candidates in classical languages will, in addition, demonstrate knowledge of dialectology/sociolinguistics and etymology

I.E. Culture including the relationship between the perspectives (value systems, attitudes, and beliefs of people from a target culture), products (things, both tangible and intangible, that are produced by members of a culture – e.g., tools, foods, literature, laws, music, systems of education) and practices (patterns of social interaction – e.g., what to do, when, where and how) of the target culture(s) studied

I.F. Immersion including the major developments and characteristics of a selected country(ies) where the target language is the official language including:

- geography, history and economics,
- religious and political systems,
- literature, fine arts and other cultural symbols

II. PERFORMANCES

The professional education program provides evidence of the candidates' participation in sequential and developmental field experiences and student teaching, under the supervision of college personnel and cooperating teachers who are well trained, have interpersonal skills and demonstrated competence in teaching. The program also provides evidence that the criteria and competencies for exit from the Foreign Language certification program are assessed in coursework, field experiences and student teaching and require candidates to demonstrate their knowledge and competence in fostering student learning through:

II.A. Management of the instructional environment including:

- communicating to students the rules of the classroom,
- conducting lessons at an appropriate pace,
- engaging students in learning,
- managing large and small group learning activities,
- providing a positive learning environment,
- promoting appropriate student behavior

II.B. Planned instruction including:

- developing sequential lesson plans with clear objectives and appropriate instructional strategies that address various learning styles and disabilities,
- developing a plan, congruent with the PA Academic Standards and an existing curriculum, appropriate to elementary, middle, and high school levels,
- accessing and developing resources and materials, including multimedia, necessary to achieve the instructional objectives,
- utilizing professional guidelines such as the Standards for Foreign Language Learning, the ACTFL Proficiency Guidelines, and the ACTFL Performance Guidelines for K12

II.C. Implementation of instruction including:

- articulating objectives to students,
- using the target language to the maximum extent possible in the classroom,
- implementing teaching strategies that meet the needs of students at elementary, middle, and high schools,
- implementing instructional techniques to engage students and guide their learning,
- integrating teaching strategies that assist learners to develop the three modes of communication: interpersonal, interpretive, presentational,
- integrating language with culture,
- integrating multimedia technology in instruction,
- teaching structural components of the language for meaningful communication,
- providing avenues for students to use the target language outside of the classroom setting,
- integrating instructional techniques which help students to gain sociolinguistic competence and communicate appropriately in various target culture contexts

II.D. Evaluation of instruction including:

- monitoring student progress in target language communication and cultural understanding using a variety of appropriate assessment means,
- monitoring student progress in developing the three modes of communication: interpersonal, interpretive, presentational,
- using strategies to enable students to self-assess and monitor their own progress,
- interpreting the results of student performance and modify instructional strategies accordingly,
- developing strategies to reflect upon instructional effectiveness,
- providing clear and useful feedback to students on their progress and areas for improvement

III. PROFESSIONALISM

The professional education program provides evidence that Foreign Language Education candidates demonstrate knowledge of and competence in fostering professionalism in school and community setting including:

III.A. Professional organizations, professional journals, conferences, and other resources for on-going professional development

III.B. Integrity and ethical behavior, professional conduct as stated in Pennsylvania's Code of Professional Practice and Conduct for Educators; and local, state, and federal laws and regulations

III.C. Establishing and maintaining collaborative relationships with colleagues of the elementary, secondary and higher education levels to improve student learning

III.D. Communicating effectively with parents or guardians, other agencies and the community at large to support learning by all students

III.E. Recognizing the importance of life-long professional development including:

- maintenance and enrichment of proficiency in the target language,
- awareness of important changes in Foreign Language pedagogy

Geology and Astronomy

Note: Geo-Ast Dept. will post SLOC goals on website.

Degree Program

GEOSCIENCE (B.S.)

Earth and Space Sciences (B.S.Ed.)

Student Learning Outcomes

1. Obtain a high-quality education in their field.
2. Develop the skills to build successful careers and to be lifelong learners.
3. Practice research skills and accomplish scholarly growth.
4. Become resources for their community.

In order to assess the student learning outcomes, we define each below and state what aspects we wish to assess.

- 1. High-quality education.** We define high-quality education as comprising a knowledge base, science process skills and abilities in scientific inquiry, synthesis and evaluation of complex problems, and transferable skills, including oral and written communication skills, uses of computer and other scientific technology, and effective peer collaboration. In constructing this definition, we have relied upon our experience in science education at the national level and our familiarity with the current recommendations of the AAAS, NRC, NAS, and NSTA for the components of effective education in the sciences.
 - a. Knowledge base. We want to assess how well our students gain the requisite fundamental knowledge and understanding of the earth/space system, particularly the importance of patterns and relationships over time and space, and whether our majors are actually acquiring the necessary knowledge and understanding.
 - b. Science process skills and abilities in scientific inquiry. We want to know how effectively our graduates are able to collect, analyze, and interpret data, to formulate and test hypotheses, and to reason quantitatively and scientifically about the earth/space system.
 - c. Synthesis and evaluation of complex problems. We want to know how effectively our graduates can synthesize knowledge and apply their skills to analyze and evaluate complex problems in earth/space science research.
 - d. Transferable skills and lifelong learning. We want to know well our graduates are equipped, by means of skills in oral and written communication, the use of computers and other scientific technology, and peer collaboration, to compete in a fluid job market.
- 2. Career-building.** Part of career-building includes high-quality education, such as development of transferable skills, but the aspects we assess here may include

extra-curricular activities. We want to assess how aware our students are of opportunities to learn about career paths, to become familiar with professional practices, and to become members of a professional community; and the degree to which they take advantage of those opportunities. We want to know how effective our program is in producing graduates who are able and interested in continued professional development.

- 3. Scholarly accomplishment by students.** Scholarly accomplishment encompasses scholarly work, basic and applied, in any aspect of geoscience, astronomy, or science education; the products of that work, such as presentations at professional meetings and publications; and participation in professional organizations. We seek to assess how aware our students are of opportunities to learn about and to participate in scholarly work in and outside of the department. We want to assess how active students are in scholarly work and professional organizations. From this information we can develop a sense of the scope of scholarly accomplishments by students and the degree to which they are establishing connections to the larger geoscience community.
- 4. Resources for the community.** The Department of Geology & Astronomy provides equipment, facilities, expertise, and educational experiences to the campus and regional community. We want to understand the degree to which our students are aware of their ability to provide significant benefits to their communities both while students and as alumni. We will track the number of students who take such opportunities and the ways in which they are involved in community service through outreach and projects, within and in addition to coursework. We want to assess how they are using our equipment and facilities.

History

Degree Program

History (B.A.)

Student Learning Outcomes

Outcome #1: Students will construct generalizations and interpretations that demonstrate a knowledge of historical eras, change over time, and key historical concepts in the history of the United States, Western Civilization, and global civilization.

(Cognitive)

Outcome #2: Students will be able to communicate their knowledge of history in reasoned arguments supported by historical evidence and an appreciation for multiple causes, effects, and perspectives, in both oral and written presentations. They will engage in basic historical research, be able to locate and distinguish between primary and secondary sources, and to analyze and interpret a variety of written, oral, visual, and material evidence. (Behavioral)

Outcome #3: Students will demonstrate an analytical appreciation of diverse perspectives by engaging in basic historical analysis and research. They will be able to identify and acknowledge multiple points of view by analyzing and interpreting a variety of these sources. They will be able to connect their knowledge of historical multiple perspectives to contemporary life in a heterogeneous, global society. (Attitudinal)

Degree Program

B.A. with elective teacher certification (social studies)

Student Learning Outcomes

Outcome #1: Students will demonstrate a knowledge of historical eras, change over time, and key historical concepts in the history of the United States, Western Civilization, and global civilization. (Cognitive)

Outcome #2: Students will be able to communicate their knowledge of history in reasoned arguments supported by historical evidence and an appreciation for multiple causes, effects, and perspectives, in both oral and written presentations. (Behavioral)

Outcome #3: Students will demonstrate an analytical appreciation of diverse perspectives by engaging in basic historical research. They will be able to locate and distinguish between primary and secondary sources and to acknowledge multiple points of view by analyzing and interpreting a variety of these sources. They will be able to connect their knowledge of historical multiple perspectives to contemporary life in a heterogeneous, global society. (Behavioral and Attitudinal)

Outcome #4: Students will acquire and apply principle of effective pedagogy in order to construct and conduct lessons that utilize a variety of instructional methods appropriately and effectively in the teaching of history and the social studies to diverse learners. Students will demonstrate professionalism in the conduct and evaluation of lessons by reflecting on their performances, evaluating the lesson's effectiveness for diverse learners, and soliciting and/or suggesting ways to improve the lesson.

Degree Program

History (M. Ed.)

Student Learning Outcomes

Outcome #1: Students will construct generalizations and interpretations that demonstrate an advanced knowledge of historical eras, change over time, and key historical concepts in the history of the United States, Western Civilization, and global civilization. (Cognitive)

Outcome #2: Students will be able to communicate their advanced knowledge of history in well reasoned arguments supported by specific historical evidence and an appreciation for multiple causes, effects, and perspectives, in both oral and written presentations. (Behavioral)

Outcome #3: Students will demonstrate an advanced analytical appreciation of diverse perspectives by engaging in historical research. They will be able to locate and distinguish between primary and secondary sources and to acknowledge multiple points of view by analyzing and interpreting a variety of these sources. They will be able to connect their knowledge of historical multiple perspectives to contemporary life in a heterogeneous, global society. (Behavioral and Attitudinal)

Outcome #4: Students will acquire and apply principles of effective pedagogy in order to construct and conduct lessons that utilize a variety of instructional methods appropriately and effectively in the teaching of history and the social studies to diverse learners. Students will demonstrate professionalism in the conduct and evaluation of lessons by reflecting on their performances, evaluating the lesson's effectiveness for diverse learners, and soliciting and/or suggesting ways to improve the lesson.

Degree Program

History (M.A.)

Student Learning Outcomes

Outcome #1: Students will construct generalizations and interpretations that demonstrate an advanced knowledge of historical eras, change over time, and key

historical concepts in the history of the United States, Western Civilization, and global civilization. (Cognitive)

Outcome #2: Students will be able to communicate their advanced knowledge of history in reasoned arguments supported by historical evidence and an appreciation for multiple causes, effects, and perspectives, in both oral and written presentations. They will engage in advanced historical research, be able to locate and distinguish between primary and secondary sources, and to analyze and interpret a variety of written, oral, visual, and material evidence. (Behavioral)

Outcome #3: Students will demonstrate an analytical appreciation of diverse perspectives by, engaging in advanced historical analysis and research. They will be able to identify and acknowledge multiple points of view by analyzing and interpreting a variety of these sources. They will be able to connect their knowledge of historical multiple perspectives to contemporary life in a heterogeneous, global society. (Attitudinal)

Mathematics

Degree Program

Mathematics (B.S.Ed.)

Student Outcomes

1. Mathematics Preparation
 - Prospective teachers have a firm conceptual grasp of limit, continuity, differentiation, and integrations, and a thorough back ground in the techniques and application of calculus.
 - Prospective teachers use mathematical modeling to solve problems from fields such as natural sciences, social sciences, business, and engineering.
 - Prospective teachers understand the major concepts of both Euclidean and non-Euclidean geometries.
2. Teaching Preparation
 - Prospective teachers use graphing calculators, computers, and other technologies as tools for teaching mathematics
 - Prospective teachers use a variety of methods to assess mathematical learning, such as open-ended questions, portfolios, and performance tasks.
3. Field-Based Experience
 - Prospective teachers have a full-time teaching experience in 7-12 mathematics that is supervised by a qualified teacher and a university or college supervisor with 7-12 mathematics teaching experience.

Degree Program

Mathematics (B.A.)

Student Outcomes

1. Graduates have a firm conceptual grasp of limit, continuity, differentiation, and integration, and a thorough background in the techniques and applications of calculus.
2. Graduates use mathematical modeling to solve problems from fields such as natural sciences, social sciences, business, and engineering.
3. Graduates have a firm conceptual grasp of the major concepts of linear algebra.
4. Graduates have a firm conceptual grasp of the major concepts of abstract algebra.

Degree Program

Mathematics (M.A.)

Student Learning Outcomes

1. Students completing the Master of Arts Program should have a firm conceptual grasp of the fundamental concepts of **Analysis**, the role of proof in analysis, and the role of problem solving in investigating, and linking mathematical content from analysis to mathematical applications. Students should be able to communicate these ideas in a written format during hourly and final examinations and in an oral format during the comprehensive examination. Students should also know how to use technology when doing problems involving mathematical analysis.
2. Students completing the Master of Arts Program should have a firm conceptual grasp of the fundamental concepts of **Algebra**, the role of proof in algebra, and the role of problem solving, in investigating and linking mathematical content from algebra to mathematical applications. Students should be able to communicate these ideas in a written format during hourly and final examinations and in an oral format during the comprehensive examination. Students should also know how to use technology when doing problems involving algebra.
3. Students completing the Master of Arts Program should have a firm conceptual grasp of the fundamental concepts of **Geometry**, the role of proof in geometry, and the role of problem solving in investigating and linking mathematical content from geometry to mathematical applications. Students should be able to communicate these ideas in a written format during hourly and final examinations and in an oral format during the comprehensive examination. Students should also know how to use technology when doing problems involving geometry.

Degree Program

Applied Statistics (M.S.)

Student Goals and Outcomes

The goals of the program in terms of knowledge, skills, and experience are defined by the following student learning outcomes. A student successfully completing the MS in Applied Statistics program will have successfully:

1. Demonstrated an understanding of probability and statistical inference, including the fundamental laws of classical probability, discrete and continuous random variables, sampling distribution theory, principles of estimation, maximum likelihood methods, hypotheses testing, confidence intervals, bivariate and multivariate distribution theory.
2. Demonstrated the ability to apply the elementary methods of statistical analysis, namely those based on classical linear model methodology,

categorical methodology, and non-parametric methodology to perform data analysis for the purposes of statistical inference.

3. Demonstrated proficiency in the effective use of computers for research data management and for analysis of data with standard statistical software packages, particularly SAS.
4. Learned to develop and critically assess the design of experimental studies and the methodology behind efficient collection of data.
5. Studied in depth at least one particular area of interest, e.g., the selected elective concentration, and gained the ability to directly apply statistical methods to that area of concentration.
6. If students lack prior work experience in team-oriented settings, they should gain practical experience in statistical consulting and communicating with non-statisticians, either via interaction with employees at a local company as part of the internship practicum or by collaborative work on a project via the West Chester Statistics Institute.
7. For students so desiring, the ability to conduct independent research via the thesis option.

Philosophy

Degree Program

Philosophy (B.A.)

Student Outcomes for Philosophy

1. Show competence in connecting ethical theory to practice, especially via real-world and hypothetical test cases.
2. Be able to write an essay which makes a specific argument and defends the argument against common objections.
3. Be able to distinguish deductive from inductive arguments and determine validity/invalidity of simple arguments.
4. Be able to see connections among thinkers living in different historical periods.

Student Outcomes for Religious Studies

1. Be able to compare and contrast major world faiths and approaches to religion taken by major contemporary theorists.
2. Understand social implications of religious pluralism.

Degree Program

Philosophy (M.A.)

Student Outcomes

1. Attain basic mastery of key figures and movements in the history of philosophy.
2. Demonstrate an ability to write substantive essays, showing independent thought and the ability to account for objections to one's own argument.
3. Become acquainted with scholarly literature, including journals, and utilize these sources in their own essays.
4. Either write an acceptable master's thesis OR pass qualifying examinations in four areas of philosophy.

Physics

Note: The Physics Dept. will post outcomes on its website.

Degree Program

Physics (B.S.Ed.)

Program Goals and Objectives

Students enrolled in the B.S. Ed. In Physics program are encouraged to realize their own professional goals as they develop and refine those skills that are needed by the professional physics educator. The Department of Physics program emphasizes subject matter, professional development is emphasized in the courses taught in the College of Education. This includes the development of skills related to the discipline such as the ability to collect, evaluate and analyze information critically, communicate effectively, use technology in the classroom and become involved in their own continued learning. This is realized through formal problem solving, hands-on-activities, peer collaborations and student-faculty interaction. This skill set is also developed within the context of the Physics courses taken by students in the program (cf. Department Mission Statement).

With the completion of this program as student will have developed an understanding of the subject matter and will have been exposed to those related professional activities that prepare him or her for a long productive career as a physics educator. The disciplinary, professional objectives of the program can be categorized as follows:

1. **Knowledge and understanding of concepts and principles of physics**
 - a. Both a theoretical and practical understanding of the basic concepts and principles in the major areas of classical and modern physics. These areas include classical mechanics, electricity and magnetism, heat and thermodynamics and statistical physics, atomic and nuclear physics, waves, optics, special relativity, computational physics and quantum mechanics.
 - b. Be able to critically evaluate new scientific data, results and theories in the context of the concepts and principles they understand.
2. **Problem solving**
 - a. Application of the concepts and principles of Physics to formal/theoretical problems.
 - b. Learn how to analytically solve problems.
 - c. Learn how to intuitively solve problems, meaning being able to suggest the characteristics of a solution to a problem without actually solving it.
 - d. Ability to estimate results.
 - e. Develop critical thinking skills for solving formal/theoretical problems.
 - f. Learn the use of software for the analysis and solution of formal problems and for the organization and presentation of results.

3. Research Methods

- a. Be able to collect information related to a specific, technical topic.
- b. Learn to work individually and collaboratively in a group.
- c. Develop skills related to management and organization of a project.

4. Laboratory Work

- a. Develop critical thinking skills for solving experimental problems.
- b. Ability to design an experiment to test concepts and/or principles in physics.
- c. Develop those laboratory skills needed to work in a research environment.
- d. Learn to use state-of-the-art equipment and instrumentation for measurement and testing.
- e. Learn to use, design and build computer-based tools for data acquisition and analysis.
- f. Learn about safe practices in the laboratory.

5. Scientific/technical communications

- a. Learn to write scientific/technical reports, both formal and informal, individually and in a group setting. This includes the writing of abstracts and bibliography, and the methods of graphical and mathematical presentation.
- b. Present scientific reports, both formal and informal, individually and in a group setting, to an audience of peers and to the public.
- c. Write and review research proposals.
- d. Develop the skills needed to evaluate, analyze and present scientific information.

6. Historical, social and professional

- a. Understand the social and historical context in which physics has been and is conducted.
- b. Understand the interconnections between physics and other disciplines.
- c. Develop professionally by participating in the activities of relevant organizations, e.g. The Society of Physics Students.

7. Classroom skills (attained via the Education component of the program)

- a. Professional standards and practice.
- b. Curriculum planning.
- c. Classroom management and Organization.
- d. Monitoring student progress.
- e. Leadership.
- f. Sensitivity to students' needs
- g. Problem analysis.
- h. Strategic and tactical decision making.
- i. Oral and written communication and presentation.
- j. Innovation.
- k. Personal interactions.
- l. Tolerance for stress.

Degree Program

Physics/Engineering (B.S.)

Program Goals and Objectives

Students enrolled in the B.S. in Physics/Engineering program are encouraged to realize their own professional goals as they develop and refine those skills which are needed by the professional physicist and engineer. This includes the development of skills related to the discipline such as the ability to collect, evaluate and analyze information critically, communicate effectively, use technology and become involved in their own continued learning. This is realized through formal problem solving, hands-on-activities, peer collaborations and student-faculty interaction.

With the completion of this program, a student will have developed an understanding of the subject matter and will have been exposed to those related professional activities that prepare him or her for a long and productive life as a physicist or engineer. Our list of objectives is based upon the ABET 2000 standards for engineering curricula published by the Accrediting Board for Engineering and Technology and our current agreements with The Pennsylvania State University and its College of Engineering, the Harrisburg campus of Penn State, and our own departmental and institutional requirements. The disciplinary and professional objectives of the physics portion of the program can be categorized as follows:

1. **Knowledge and understanding of concepts and principles of physics (ABET;1)**
 - a. Both a theoretical and practical understanding of the basic concepts and principles in the major areas of classical and modern physics. These areas include classical mechanics, electricity and magnetism, heat and thermodynamics and statistical physics, atomic and nuclear physics, waves, optics, special relativity, computational physics and quantum mechanics.
 - b. Be able to critically evaluate new scientific data, results and theories in the context of the concepts and principles they understand.

2. **Problem solving (ABET; 1)**
 - a. Apply the concepts and principles of physics to formal/theoretical problems.
 - b. Learn how to analytically solve problems.
 - c. Learn how to intuitively solve problems, meaning being able to suggest the characteristics of a solution to a problem without actually solving it.
 - d. Ability to estimate results Ability to estimate results.
 - e. Develop critical thinking skills for solving formal/theoretical problems.
 - f. Learn the use of software for the analysis and solution of formal problems and for the organization and presentation of results.

3. **Research Methods (ABET; 1,2,3)**
 - a. Ability to collect information related to a specific, technical topic.
 - b. Learn to work individually and collaboratively in a group.
 - c. Develop skills related to management and organization of a project.

4. **Laboratory Work (ABET; 2,5)**
 - a. Develop critical thinking skills for solving experimental problems.
 - b. Ability to design an experiment to test concepts and/or principles in physics.
 - c. Develop those laboratory skills needed to work in a research environment.
 - d. Learn to use state-of-the-art equipment and instrumentation for measurement and testing.
 - e. Learn to use, design and build computer-based tools for data acquisition and analysis.
 - f. Learn about safe practices in the laboratory.

5. **Scientific/technical communications (ABET; 7)**
 - a. Learn to write effective scientific/technical reports, both formal and informal, individually and in a group setting. This includes the writing of abstracts and bibliography, and the methods of graphical and mathematical presentation.
 - b. Present scientific reports, both formal and informal, individually and in a group setting, to an audience of peers and to the public.
 - c. Write and review research proposals.
 - d. Develop the skills needed to evaluate, analyze and present scientific information.

6. **Historical, social and professional (ABET; 6,8,9,10)**
 - a. Understanding of the social and historical context in which physics has been and is done.
 - b. Understanding of the interconnections between physics and other disciplines.
 - c. Professional development, e.g. Student Physics Society.

Degree Program

Physics (B.S.)

Program Goals and Objectives

Students enrolled in the B.S. in Physics program are encouraged to realize their own professional goals as they develop and refine those skills which are needed by the professional physicist or scientist to collect, evaluate and analyze information critically, learn to communicate effectively, and become involved in their learning. This is realized through formal problem solving, hands-on-activities, peer collaborations and student-faculty interaction.

With the completion of this program, a student will have developed an understanding of the subject matter and will have been exposed to those related professional activities that

prepare him or her for a long and productive career in physics or a related field. The academic and related professional objectives of the program can be roughly categorized as follows.

1. **Knowledge and understanding of concepts and principles of physics**
 - a. Both a theoretical and practical understanding of the basic concepts and principles in the major areas of classical and modern physics. These areas include classical mechanics, electricity and magnetism, heat and thermodynamics and statistical physics, atomic and nuclear physics, waves, optics, special relativity, computational physics and quantum mechanics.
 - b. Be able to critically evaluate new scientific data, results and theories in the context of the concepts and principles they understand.

2. **Problem analysis**
 - a. Apply the concepts and principles of physics to formal/theoretical problems.
 - b. Learn how to analytically solve problems.
 - c. Learn how to intuitively solve problems, meaning being able to suggest the characteristics of a solution to a problem without actually solving it.
 - d. Ability to estimate results.
 - e. Develop critical thinking skills for solving formal/theoretical problems.
 - f. Learn the use of software for the analysis and solution of formal problems and for the organization and presentation of results.

3. **Research Methods**
 - a. Ability to collect information related to a specific, technical topic.
 - b. Learn to work individually and collaboratively in a group.
 - c. Develop skills related to management and organization of a project.

4. **Laboratory Work**
 - a. Develop critical thinking skills for solving experimental problems.
 - b. Ability to design an experiment to test concepts and/or principles in physics.
 - c. Develop those laboratory skills needed to work in a research environment.
 - d. Learn to use state-of-the-art equipment and instrumentation for measurement and testing.
 - e. Learn to use, design and build computer-based tools for data acquisition and analysis.
 - f. Learn about safe practices in the laboratory.

5. Scientific/technical communications

- a. Learn to write scientific/technical reports, both formal and informal, individually and as part of a collaborative effort. This includes the writing of abstracts and bibliographies, and the methods of mathematical and graphical presentation.
- b. Present scientific reports, both formal and informal, individually and as part of a collaborative effort, to an audience of peers and to the public.
- c. Develop skills needed to evaluate, critique, and respond to information presented.

6. Historical, social and professional

- a. Understand the social and historical context in which physics has been and is done.
- b. Understand the interconnections between physics and other disciplines.
- c. Develop professionally by participating in the activities of relevant organizations, e.g. The Society of Physics Students.

Psychology

Note: The Psychology Department will post its outcomes on their website.

Degree Program

Psychology (B.A.)

Intended Outcomes/Objectives

1. **Knowledge of Psychological Theory and Research.** Psychology majors who graduate from West Chester University will possess a general knowledge of psychology.
2. **Career Preparation.** Graduating psychology majors will be well informed about practices and applications of psychology in field settings.
3. **Research and Scholarship Skills.** Students pursuing psychology courses at West Chester University will be able to apply their course learnings through activities requiring critical thought, analysis of research data, and communication of findings or conclusions.
4. **Knowledge of Ethical Considerations.** Psychology majors will demonstrate awareness of ethical issues in research and/or applied settings.
5. **Lifelong Self Education Skills.** Psychology majors will demonstrate the ability to integrate or assimilate new psychological knowledge after they graduate from West Chester University and to be aware of their psychology-related career options.
6. **Information Literacy.** Psychology majors will demonstrate the ability to access scientific information effectively and efficiently, evaluate scientific information and its sources, and use scientific information effectively to develop and support a logical argument.

Degree Program

General Psychology (M.A.)

Industrial/Organizational (M.A.)

Clinical (M.A.)

Intended Outcomes/Objectives

1. **Basic foundations in psychological theory and research.** Students who receive a graduate degree from West Chester University will compare favorably in their knowledge of psychological theory and research with students who have completed similar graduate programs within the state and nation.
2. **Research and statistical skills.** Students pursuing a graduate degree at West Chester University will be able to complete activities requiring critical thinking, analysis of research data, and communication of results and conclusions through the use of statistics.

3. **Professional Skills.** Students in the graduate psychology programs will be well informed about practices and applications of psychology in field settings. Graduating students will be prepared to practice in their respective fields.

Holocaust and Genocide Studies

Degree Program

Holocaust and Genocide Studies (M.A.)

Intended Outcomes and Objectives

Students holding a Master of Arts in Holocaust and Genocide Studies from West Chester University should:

1. Possess an advanced post – baccalaureate knowledge of Holocaust, Genocide, and modern European history
2. Possess an understanding of theories of genocide from specific courses in our curriculum in psychology, philosophy, language, political science, sociology, and criminology
3. Produce original written work in the field, based on primary sources and consulting relevant repositories, and be able to present information in oral and written formats.

Pre-Medical Program

Program

Pre-Medical students may choose to major in any degree program.

Outcomes

1. Academic Preparation – Acquire knowledge base needed to prepare for and gain admission to medical school.
2. Professionalism – Students will demonstrate an appropriate level of professionalism.
3. Acquire knowledge of ethical issues affecting the practice of medicine today.
4. Participate in health care and community service through volunteer activities.

PPD Program

Program

Student Learning Outcomes

Assessment of PPD majors focuses on the internship process, as the best indicator of eventual success in the biopharmaceutical industry. The assessment tools used are the written internship reports from both the WCU faculty and pharmaceutical industry supervisors.

TESL

Program

TESL

Student Objectives:

1. English Usage and Developing Linguistic Awareness
2. English as a Second Language-Instructional Materials/Development
3. English Language Learners (ELLs) Language & Support Services Knowledge
4. Developing Cultural Awareness/Sensitivity

Student Goals:

- Students will possess the skills necessary for a career and for life-long learning.
- Students will graduate with an enhanced ability to respect and understand diversity.
- Students will graduate with an enhanced ability to think clearly and critically.
- Students will graduate with an enhanced ability to communicate effectively both orally and in writing.
- Students will graduate with an enhanced ability to acquire knowledge.

English as a Second Language-Instructional Materials/Development

Women's Studies Program

Program

B.A. Women's Studies

Student Learning Outcome #1:

The student will demonstrate an ability to identify gender role expectations in a wide range of human endeavors historically and in the present (Cognitive Objective)

Student Learning Outcome #2:

The student will demonstrate an ability to recognize, analyze, and respond positively to issues of diversity, including but not limited to gender, in a research or internship experience (Cognitive, Behavioral, and Affective Objective).

Student Learning Outcome #3:

Students will demonstrate an ability to read and think critically through competent written and oral presentations (Behavioral Objective).

Liberal Studies Program

Program

B.A. Liberal Studies

Expected Learning Outcomes

- **Effective Communication:** Graduates of the Liberal Studies Program will be skillful communicators, able to convey their ideas articulately, both orally and in writing.
- **Interdisciplinary Thinking:** Graduates of the Liberal Studies Program must demonstrate the ability to integrate information from a broad range of sources, and to evaluate it critically.
- **Global Awareness:** Graduates of the Liberal Studies Program will demonstrate the ability to interpret information from an international and intercultural perspective.