



Department of Physics West Chester University of Pennsylvania

PROGRAM: *B.S. in Physics and Engineering*

Alignment of Mission, Goals, and Program

University Mission and Goals¹

West Chester University, a member of the Pennsylvania State System of Higher Education, is a public, regional, comprehensive institution committed to providing access and offering high-quality undergraduate education, select post-baccalaureate and graduate programs, and a variety of educational and cultural resources for its students, alumni, and citizens of southeastern Pennsylvania.

West Chester University will be a national model for excellence for public regional comprehensive universities and especially noted for:

- Undergraduate programs that actively engage students in connecting the life of the mind to the world in which they live and work.
- The responsiveness of its graduate and post-baccalaureate programs to regional needs.
- Its focus on providing lifelong-learning, technical, and applied skills essential to graduates' success now and in the future.
- A commitment by faculty, staff, and administrators to provide access and to serve effectively the educational needs of a diverse student body.
- Its role as a leading educational and cultural resource and partner in fostering the economic, social, and cultural vitality of southeastern Pennsylvania.

College Mission and Goals²

The mission of the College of Arts and Sciences is to be a learning community for the arts and sciences within West Chester University. This mission is accomplished through the teaching, research, scholarship, artistic creation, and service activities of the faculty, students, and staff of the College.

The College of Arts and Sciences is committed to providing high-quality, current curricula to both undergraduate and graduate students. Consistent with the mission of

¹ http://www.wcupa.edu/_INFORMATION/FACTS.WCU/mission.htm

² http://www.wcupa.edu/_ACADEMICS/sch_cas/mission_statement.html

West Chester University, our first priority is undergraduate education for which we offer bachelor's degree programs, a broad range of minors, general education courses for all majors, and service courses in support of degrees throughout the University. Our second priority is graduate education in selected, high-quality master's degree and certificate programs for career preparation, personal enrichment, and preparation for doctoral degrees.

As the home of the traditional liberal arts and sciences, the College is especially committed to the University's stated expectation that its students will graduate with an enhanced ability to acquire knowledge, to think clearly and critically, to communicate effectively, to respect and understand diversity, to appreciate aesthetic values, and to possess the skills necessary for a career and for life-long learning. The College is committed to a curriculum that includes attention to racial, ethnic, gender, and class issues, as well as to multi-cultural and global perspectives.

The College of Arts and Sciences is committed to effective teaching and advising and supports the continual development of pedagogical effectiveness and innovation by the faculty. The College values and promotes a variety of effective teaching techniques and learning environments.

As part of our mission, faculty and students in the College of Arts and Sciences produce original research and art, and they are engaged in a wide range of scholarly and professional activities. The College values and supports faculty and student research and scholarship and encourages teacher- scholar faculty to bring their research into the classroom and their students into their research, scholarship, and creative projects. The College also values and supports the efforts by faculty, students, and staff to obtain external funding in support of its mission.

The College is committed to providing service to the University, community, and professions represented in the College. Students are encouraged to contribute to the community through service learning and as part of faculty service projects.

In support of its mission, the College is committed to recruiting talented students, faculty, and staff from a wide variety of cultural, social, and economic backgrounds. We are committed to promoting civility, respect, honesty, and collegiality among all members of the College. Finally, as a learning community, the College of Arts and Sciences values intellectual and artistic excellence and seeks to recognize the academic achievements of both faculty and students.

Department Mission and Goals

The Physics Department is learning community that prepares students for careers in academia, K-12 teaching, industry, and government. Our department gives graduates a solid grounding in both theoretical and experimental physics. This is accomplished both through classroom instruction as well as incorporation of students in scholarly research. In addition, graduates from our programs are able to think clearly and critically, are prepared for lifelong self-education, and are effective communicators. Finally, our

department aspires to provide guidance to our undergraduates so that they have a clear knowledge of the steps needed to obtain their personal career goals.

Program Mission and Goals

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

Intended Educational Outcomes

A. Knowledge and understanding of the concepts and principles of physics

B.S. Physics/Engineering Majors who graduate from West Chester University will possess a general knowledge of physical phenomenon and applications of these phenomenon. Knowledge areas will include classical mechanics, electricity and magnetism, and engineering statics. In addition, they will have a firm grasped of the physical phenomenon and principles that are a foundation for their particular engineering discipline.

B. Research skills

B.S. Physics/Engineering Majors who graduate from West Chester University will develop the laboratory skills needed to work in a research environment. This skill set will include experiment design and execution, data analysis, familiarity with common measurement instrumentation (e.g. multimeter), and safety practices in a laboratory setting.

C. Effective Communicators

B.S. Physics/Engineering Majors who graduate from West Chester University will be well prepared to be effective communicators in the workplace. In particular, graduates will have a working knowledge of Microsoft WORD, EXCEL, and POWERPOINT. In addition, they will be able to present both formal and informal reports in both written and oral mediums.

D. Information Literacy

B.S. Physics/Engineering Majors who graduate from West Chester University will demonstrate the ability to identify and locate scientific information, evaluate its content, and effectively and efficiently use the information to develop and support a logical argument.