Physics and Engineering at EKU
Physics is the study of the organization and structure of nature at its most basic level: matter and the forces between and within matter. As such it is the most fundamental science and serves as the foundation of the other sciences. Physics spans the range from the very small (the organization of the atom) to the very large (the organization of the universe) and from the everyday (mechanics, heat, sound and electricity) to the exotic (quantum mechanics, nuclear physics and astronomy).

Engineering is the practical application of the principles of physics. Engineers design things that are used in everyday life such as automobiles, telephones, bridges, light bulbs, and computers and develop the means and methods of manufacturing these products.

Careers in Physics and Engineering
The Pre-Engineering curriculum at EKU prepares students to complete their Engineering education and undertake a successful career in Engineering. Careers in Engineering encompass many of the traditional Engineering fields, such as electrical, mechanical, civil and chemical engineering, and also include more recent additions to the Engineering world, such as bio-medical, optical, environmental and computer engineering. Students should meet with a faculty advisor at EKU to determine how best to achieve their Engineering career goals through the Dual-Degree Engineering Program or the Pre-Engineering Program.

Degree Programs
The Department of Physics and Astronomy offers the Bachelor of Science degree in Physics with options in General Physics and in Engineering Physics, and in Physics Teaching. Also, the department offers a dual degree program with Auburn University and the University of Kentucky, where the student studies for three years at EKU and two years at the engineering school, receiving both an EKU physics degree and an engineering degree. In addition, the department offers the two-year Associate of Science Degree in the Science for Engineering. Graduates of the AS program continue to an engineering school or seek immediate employment before continuing their education. The department also offers minors in physics and physics teaching.

For More Information
Office of Admissions
SSB CPO 54
Eastern Kentucky University
521 Lancaster Avenue
Richmond, KY 40475-3102
www.admissions.eku.edu
800-465-9191
859-622-2106

Department of Physics & Astronomy
Moore 351
Eastern Kentucky University
521 Lancaster Avenue
Richmond, KY 40475-3102
www.physics.eku.edu
859-622-1521

Eastern Kentucky University
As you consider where you’ll pursue your studies, Eastern Kentucky University encourages you to ask yourself, “What do I want to do with my life?” and “Who can help me reach that destination?”

Before we tell you about EKU, let’s focus on your needs. What are you looking for in a college or university?

- Renowned, accessible professors; low student/faculty ratio
- State-of-the-art facilities
- Extensive curriculum
- Wide network of campus organizations
- Affordable cost
- Inviting campus

Achieving your goals depends on the quality of the faculty and curriculum at the school you choose to attend. Every college and university touts facilities, but few can match the accolades of our faculty. At EKU you’ll reach beyond the borders of classroom discussion to hands-on experience and networking opportunities with experts in the field.

EKU graduates are world leaders in areas as diverse as international business and homeland security; local, state and national government; as well as drama and law. Campus facilities, such as the Studio for Academic Creativity, which is designed to enhance research, writing, and presentation skills, and our new state-of-the-art science building, ensure our students of exposure to technologies vital to real world success.

We hope you’ll see that from our view there are no limitations, just possibilities.

- A comprehensive, public university serving more than 16,000 students
- Undergraduate and graduate excellence through 168 associate, baccalaureate, master’s, specialist and cooperative doctoral programs
- Quality and diversity in faculty and staff
- Student/professor ratio of 17:1
- 66-acre main campus in Richmond, regional campuses in Corbin, Danville, Lancaster and Manchester, and higher education centers throughout the Commonwealth

WWW.EKU.EDU
Pre-Engineering

There are two pre-engineering curricula offered by the College of Arts and Sciences.

TWO-TWO CURRICULUM

In the first curriculum, referred to as the Two-Two Curriculum, students spend two years at EKU and study basic science, mathematics, and courses for their basic education. Students then transfer their credits to the engineering school of their choice. Students can usually complete a degree in engineering after two years of course work at the engineering school.

Major Requirements ......................................................... 30 hours
PHY 201, 202, MAT 124*, 224, 225, CHE 111, 111L, 112, 112L.

Supporting Course Requirements ........................................ 9 hours
PHY 221, TEC 190 and an approved programming language.

General Education Requirements ........................................ 24 hours
Six hours of English composition, 18 hours selected from the humanities and social sciences to satisfy general education requirements at the chosen engineering school.

University Requirement .................................................. 1 hour
ASO 100

Total Curriculum Requirements ......................................... 64 hours

* A preparatory course (MAT 109) may be required before admission to MAT 124.

THREE-TWO CURRICULUM

In the Three-Two Curriculum students spend three years at EKU and then take two years of work in engineering at the University of Kentucky or Auburn University and earn a baccalaureate degree from EKU in physics or chemistry and an engineering degree from the engineering school. The additional year spent at EKU allows students to do more work in a science major, thus improving the breadth of their background.

All students pursuing a Dual-Degree Engineering Program in the Department of Physics and Astronomy should pursue the Engineering Physics Option of the Physics B.S. program, and they should enroll in this program option. Specific inquiries concerning a particular engineering program should be addressed to the pre-engineering advisor, Department of Physics and Astronomy or Department of Chemistry. Because preferred general education and supporting courses may vary depending upon the partner engineering school a student may choose to attend, it is essential that students pursuing the Dual-Degree Program in Engineering work closely with their departmental advisors.

A third option available to a student would be to complete requirements for a baccalaureate degree in physics or chemistry at EKU and then to apply to a graduate school in engineering for admission and graduate studies.

MATHEMATICS & PHYSICS COURSES

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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>MAT 109</td>
<td>Pre-calculus Mathematics</td>
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<tr>
<td>MAT 124</td>
<td>Calculus I</td>
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<td>MAT 224</td>
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<td>MAT 225</td>
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<td>PHY 201</td>
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<td>PHY 202</td>
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<td>PHY 221</td>
<td>Statics</td>
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OTHER COURSES

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<td>CHE 111</td>
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<td>TEC 190</td>
<td>Technical Graphics</td>
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