

COLLEGE OF ENGINEERING AND PHYSICAL SCIENCES

Charles K. Zercher , Dean
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The College of Engineering and Physical Sciences (CEPS) provides an opportunity for students to achieve educational objectives appropriate to their interests in engineering, computer science, information technology, mathematics, the physical sciences, and the teaching of mathematics and physical sciences. The college offers an education in each of its primary disciplines leading to the bachelor of science, as well as bachelor of art degrees with majors in mathematics and each of the three physical sciences. All programs include an opportunity for study in the arts, humanities, and social sciences.

The key to an undergraduate program in the college is flexibility, with a strong emphasis on personal and individualized education. In addition to specific programs, a wide range of options within several majors are available. Special programs can be developed to meet the specific interests of individual students.

Degree Requirement

MATH 425 Calculus I and MATH 426 Calculus II or the equivalent in transfer credits or advanced placement approved by the Department of Mathematics and Statistics are required by all departments of the college. The exception is the information technology major, which only requires MATH 425 Calculus I. The prerequisites for calculus are three years of college-preparatory mathematics, including a half-year of trigonometry. Before students can register for MATH 425 Calculus I, they are required to take the Mathematics Placement Test or to have taken MATH 418 Analysis and Applications of Functions (or its equivalent) and received a grade of C or better.

Mathematics Placement

First-year students arrive with a wide range of mathematical skills based upon their high school preparation. The college wants students to have a solid mathematics foundation so that they will enjoy an enriched first-semester experience. A student's mathematics development will be assessed as part of the June orientation program. Based upon the Mathematics Placement Test, students are enrolled in the mathematics class that will allow them to continue that development. The initial mathematics entry course is MATH 418 Analysis and Applications of Functions. However, a student is placed into MATH 425 Calculus I if he or she demonstrated a certain level of proficiency in algebra and precalculus through the Mathematics Placement Test. Students with AP credit for Calculus I and/or Calculus II may elect to accept those credits and continue with a math course at the next level.

Accreditation

The baccalaureate-level programs in chemical, civil, computer, electrical, environmental, and mechanical engineering are accredited by the Engineering Accreditation Commission of ABET, Inc. The baccalaureate-level program in computer science and bioinformatics is accredited by the Computing Accreditation Commission of ABET, Inc. ABET contact information:

111 Market Place
Suite 1050

Baltimore, MD 21202-401
(410) 347-7700.

The Department of Chemistry's undergraduate bachelor of science program is approved by the American Chemical Society.

Degrees

Bachelor of Arts

Programs leading to a bachelor of arts degree are offered in the departments of chemistry, earth sciences, mathematics, and physics. These programs provide a broad liberal education along with a major in one of these fields.

Bachelor of Science

The programs leading to the bachelor of science degree, offered in each of the departments of the college, emphasize students' preparation for a professional career and continuing or graduate education.

The degree requirements for the bachelor of science include the University Academic Requirements and the specific departmental requirements for graduation. A minimum grade-point average of 2.0 must be achieved. Graduation credit requirements established by the departments range from 128 to 134. There are entrance requirements in some programs, and it is not possible to guarantee all change-of-major requests.

Interdisciplinary Programs

Bachelor of Science in Environmental Sciences

The environmental sciences program is offered jointly with the College of Life Sciences and Agriculture (COLSA).

Minors

Interdisciplinary minors enable students to obtain experience in a specialized area and to retain identification with their major professional area.

Other Programs

Independent Study and Projects

All departments within the college offer independent study opportunities and projects. The content of these courses varies and is based upon current scientific and technological needs in addition to the interests of the student and faculty involved.

Permission of the faculty member and/or department chairperson is required. One should review the course descriptions for the independent study and project courses for specific requirements. Students interested in working with a faculty member on a project or independent study should discuss this with the faculty member and their academic adviser prior to registering for the course.

Research Opportunities

The talents and expertise of the faculty in all departments are reflected in the number of ongoing research projects. Undergraduates are included in many of these research projects with the intent that they will discover and foster their creative talents. When involved with a funded research project, students may have an opportunity to receive pay while learning about the research area.

The college has world-class laboratories and computer facilities in many areas. A few of these are coastal and ocean mapping, space science,

environmental engineering and science, fluid dynamics, wind turbulence, information systems, materials science, nanotechnology, sustainability, and medical imaging. These and other ongoing research areas within the college are described on the college's website: <https://ceps.unh.edu/research-facilities>.

Students have the opportunity to acquire applied experience by working with faculty members who undertake sponsored professional projects in technical and managerial areas for business, industry, and federal, state, and local governments.

Special Provisions

The requirement of a given topic/course prescribed to meet the requirements of major curriculum may be waived by the faculty of a student's department. This rule offers students the opportunity to develop a somewhat individualized plan of study with intellectual incentives and opportunities in addition to those found in a regular curriculum. The student's petition must be approved by his/her major adviser and the dean of the college. This power usually will be delegated by the faculty to the dean or to a committee (Senate Rule 05.21(s): Waiver of Requirements in a Prescribed Curriculum).

A student with senior status and a grade point average of 3.2 may petition to take a graduate course for undergraduate credit. In addition, upon the recommendation of the department chairperson, a superior student may be allowed to count credits from up to two 800-level courses toward both a bachelor's degree and a master's degree, provided that the student has been admitted to the master's program.

Study Abroad Programs

Scotland, Heriot-Watt University Exchange Program

College of Engineering and Physical Sciences students are eligible to participate in a spring semester exchange with Heriot-Watt University in Edinburgh, Scotland. The current program is designed for civil and environmental engineering majors. For more information, contact Ray Cook at (603) 862-1411 or the Center for International Education, Hood House.

Global E3 Exchange Programs

Engineering and computer science majors are eligible to participate in international exchange programs through the Global E3 program. Programs are offered in the fall, spring, and summer, as well as for the full academic year. For more information on Global E3, please refer to www.iie.org/programs/globale3 (<http://www.iie.org/programs/globale3>). For more information on eligibility as student in the College of Engineering and Physical Sciences, contact Caitlin Baldwin at caitlin.baldwin@unh.edu.

Preparing for Teaching

Students interested in mathematics education (elementary, middle/junior high, or secondary) or Earth science teaching should refer to the appropriate department for a description of the program requirements.

Combined Programs of Study

In addition to pursuing a single major, students may combine programs of study as follows:

Minors: See University Academic Requirements; see also Degrees and Major Programs of Study and Departmental Programs of Study.

Second majors: See University Academic Requirements.

Interdisciplinary majors: Many departments in the college offer programs that combine a major with another field of interest. See the descriptions that follow.

Dual-degree programs: See University Academic Requirements.

Student-designed majors: See Special University Programs.

Other combined and interdisciplinary opportunities: See Special University Programs.

<https://ceps.unh.edu/>

Departments

- Chemical Engineering (<http://catalog.unh.edu/archives/2018-2019/undergraduate/engineering-physical-sciences/programs-study/chemical-engineering>)
- Chemistry (<http://catalog.unh.edu/archives/2018-2019/undergraduate/engineering-physical-sciences/programs-study/chemistry>)
- Civil and Environmental Engineering (<http://catalog.unh.edu/archives/2018-2019/undergraduate/engineering-physical-sciences/programs-study/civil-environmental-engineering>)
- Computer Science (<http://catalog.unh.edu/archives/2018-2019/undergraduate/engineering-physical-sciences/programs-study/computer-science>)
- Earth Sciences (<http://catalog.unh.edu/archives/2018-2019/undergraduate/engineering-physical-sciences/programs-study/earth-sciences>)
- Electrical and Computer Engineering (<http://catalog.unh.edu/archives/2018-2019/undergraduate/engineering-physical-sciences/programs-study/electrical-computer-engineering>)
- Mathematics & Statistics (<http://catalog.unh.edu/archives/2018-2019/undergraduate/engineering-physical-sciences/programs-study/mathematics-statistics>)
- Mechanical Engineering (<http://catalog.unh.edu/archives/2018-2019/undergraduate/engineering-physical-sciences/programs-study/mechanical-engineering>)
- Physics (<http://catalog.unh.edu/archives/2018-2019/undergraduate/engineering-physical-sciences/programs-study/physics>)