ENGINEERING, ASSOCIATE OF ENGINEERING SCIENCE (414)

About Our Program

This program is intended to provide the first two years of a four-year baccalaureate program. Students in this major will study mathematics and science with the intent of applying the principles of those fields to the design and construction of useful devices and structures. Specialty areas of engineering include aeronautical, agricultural, biological, chemical, civil, computer, electrical, industrial, manufacturing, material, mechanical, mining, and nuclear.

See more about Associate of Engineering Science Degree Considerations (https://catalog.highland.edu/programs/engineering-associate-science-degree-considerations/)

Nature of Work and Employment

Engineers work in a wide variety of settings such as industries, research facilities, consulting firms, and governmental agencies.

Special Considerations

Those interested in engineering should have an aptitude for science, mathematics, problem solving, and versatility. Good verbal and written skills, and the ability to work on a team are also needed. The guideline listed is recommended only. Students should check with a student advisor for specific university requirements in this major. Each student must meet with an advisor to ensure that the special requirements of the department and the institution to which they plan to transfer are fully met.

Requirements

Recommended Courses

The following are recommended courses for this major only. Students must still meet all requirements for the Associate of Engineering Science degree (https://catalog.highland.edu/programs-available/aes-requirements/) in order to graduate from Highland Community College. For more information, please see your student advisor.

Prerequisite Mathematics

Code	Title	Hours
MATH 250	Analytic Geometry/Calculus I [1]	5
MATH 255	Analytic Geometry/Calculus II [1]	5
MATH 269	Analytic Geometry/Calculus III [1]	4
MATH 265	Differential Equations [1]	3

Prerequisite Science

Code	Title	Hours
CHEM 123	General College Chemistry I [1]	5
INFT 190	Prin of Computer Science I [1]	3
PHYS 143	General Physics I [1]	4
PHYS 144	General Physics II [1]	4

Engineering Specialty

Code	Title	Hours
CHEM 124	General College Chemistry II [1]	5
CHEM 221	Organic Chemistry I [1]	5
CHEM 222	Organic Chemistry II [1]	5
GEOL 126	Geology	4
INFT 290	Prin of Computer Science II [1]	3
MATH 270	Linear Algebra [1]	3
PHYS 120	Introduction to Engineering	2
PHYS 145	General Physics III [1]	4
PHYS 221	Mechanics I (Statics) [1]	3
PHYS 222	Mechanics II (Dynamics) [1]	3

[1] Course has a prerequisite. See course description.

Program Outcomes

- Students should be able to understand and employ aspects of scientific methodologies.
- Students should practice proper lab technique in compliance with relevant safety standards.
- Students should understand the fundamental uncertainties in experimental measurements inherent in different laboratory techniques and instrumentation.
- Students should be able to analyze data sets and communicate information in a clear and organized manner with presentations and properly cited written reports.
- Students should utilize peer-reviewed scientific literature effectively.
- Students should be able to work with peers in a team setting.
- Students should be able to relate contemporary societal and global issues to the physical and life sciences.

Program Contacts

Call Highland at 815-235-6121 for the following program contacts:

- Dr. Brendan Dutmer, Dean, Natural Science and Mathematics
- Dr. Ghaneshwar Gautam, Physics and Engineering Faculty
- Beth Groshans, Student Advisor