ENGINEERING, ASSOCIATE OF ENGINEERING SCIENCE DEGREE CONSIDERATIONS (414)

Associate of Engineering Science Degree Considerations

Engineering programs are highly structured to meet the Accreditation Board for Engineering and Technology (A.B.E.T.) standards required for registration as a professional engineer. To transfer as a junior, the Prerequisite courses must be complete.

Engineering students who will not be able to complete the necessary Prerequisite courses for the Associate of Engineering Science degree are encouraged to pursue an Associate of Science degree while completing as many suitable Prerequisites and Engineering Specialty courses as possible.

Some physics and chemistry students immediately ready for the calculus sequence may find the Associate of Engineering Science degree matches the first two years of their baccalaureate program as well as or better than the Associate of Science degree.

Students are encouraged to complete the entire course sequence in Physics (I, II, III), Chemistry (I, II) and Computer Science (I, II) before transfer, since topics are covered in different orders by different schools. Verify with the transfer institution that these required Science courses are sufficient as Prerequisites. Additional sequential courses or credit hours may also transfer for Technical elective credits.

Students should decide on an Engineering specialty and preferred transfer school by the beginning of the sophomore year since course requirements vary by specialty and by school.

Be sure to select your courses in consultation with an Engineering advisor at Highland and with an Engineering advisor at the transfer school if possible. Consultation with Engineering, Math, and Science faculty at Highland is also recommended.

Some programs have a Life Science general education requirement or have specific Life Science course requirements. Check transfer school for details.

Requirements

Recommended Specialty Courses

Chemical Engineering

Code	Title	Hours
CHEM 124	General College Chemistry II	5
CHEM 221	Organic Chemistry I	5
CHEM 222	Organic Chemistry II	5
PHYS 145	General Physics III	4
MATH 270	Linear Algebra	3

Civil and Environmental Engineering

Code	Title	Hours
PHYS 221	Mechanics I (Statics)	3
PHYS 222	Mechanics II (Dynamics)	3
CHEM 124	General College Chemistry II	5
MATH 270	Linear Algebra	3
PHYS 145	General Physics III	4

Computer Engineering

Code	Title	Hours
INFT 290	Prin of Computer Science II	3
PHYS 145	General Physics III	4
MATH 270	Linear Algebra	3
CHEM 124	General College Chemistry II	5

Electrical Engineering

Code	Title	Hours
PHYS 145	General Physics III	4
MATH 270	Linear Algebra	3
CHEM 124	General College Chemistry II	5
INFT 290	Prin of Computer Science II	3

Industrial Engineering

Code	Title	Hours
PHYS 221	Mechanics I (Statics)	3
PHYS 222	Mechanics II (Dynamics)	3
MATH 270	Linear Algebra	3
PHYS 145	General Physics III	4

Mechanical Engineering (Aeronautical & Manufacturing)

Code	Title	Hours
PHYS 221	Mechanics I (Statics)	3
PHYS 222	Mechanics II (Dynamics)	3
MATH 270	Linear Algebra	3
PHYS 145	General Physics III	4

Other Engineering Specialties (Examples Include: Agricultural, Biological, Material Sciences, Mining, Nuclear). See transfer institutions for guidance with appropriate choice of Engineering Specialty courses.

Minimum Hours for Degree: 67 Credit Hours

- Completion of the Associate in Engineering Science (A.E.S.) degree does not fulfill the requirements of the Illinois Transferable General Education Core Curriculum (IAI GECC). Completion of the general education requirements of the transfer school will be necessary.
- A total of 67 semester hours is required (68 recommended) for the Associate of Engineering Science degree.
- Courses labeled “T” in the college catalog are the most transferable. A grade of C or better may be required for physics, chemistry, mathematics, and engineering science courses to transfer. A similar policy may exist for general education courses.
- Please see your advisor when choosing electives.

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.

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