

Engineering Science

The Engineering Science curriculum provides a foundation for further study toward the bachelor's degree in engineering. As such, it parallels the first two years of engineering programs offered by major universities and is applicable to any engineering discipline. Students planning to pursue baccalaureate degrees in aerospace, biomedical, chemical, civil, electrical, industrial, mechanical, nuclear or petroleum engineering select this program. Students with other technical interests may consider other technological curricula.

PROGRAM ENTRY REQUIREMENTS:

Engineering Science is a demanding curriculum. Interested high school students are urged to complete a year of advanced high school mathematics that includes trigonometry and elementary functions. They should also complete a year each of high school chemistry and physics.

Students can be admitted to the program by successfully completing MATH 161 (Precalculus I) with a grade of at least a "C." Students can also be admitted if they have at least MATH 162 (Precalculus II) placement. Students who have not taken high school physics should take PHYS 105 (Survey of Physics) or PHYS 111 (General Physics I).

PROGRAM OF STUDY AND GRADUATION REQUIREMENTS:

To qualify for the Associate in Science (A.S.) degree in Engineering Science, a minimum of 68 credits and a grade point average of 2.0 are required.

PREPARATION FOR TRANSFER:

The College has established articulation and dual admission agreements with area colleges and universities including Drexel and Temple Universities. In the Career and Transfer Resource Center, room W2-3, and the Counseling Center, room W2-2, students may obtain information and guidance in selecting elective courses required by their transfer institutions.

| Recommended Course Sequence | Course Number and Name | Prerequisite or Corequisite | Credits |
|--|--|--------------------------------|---------|
| Program Core Courses - Engineering Science | | | |
| 1 | ENGR 102 – Engineering Design and Laboratory I | MATH 162 | 4 |
| 3 | MATH 171 – Calculus I | MATH 161-162 | 4 |
| 4 | CHEM 121 – College Chemistry I | CHEM 110 (or H.S. chemistry) | 4 |
| 6 | ENGR 202 – Engineering Design and Laboratory II | ENGR 102 | 4 |
| 7 | PHYS 140 – Mechanics, Heat & Sound | MATH 171 | 5 |
| 8 | MATH 172 – Calculus II | MATH 171 | 4 |
| 9 | MATH 270 – Linear Algebra | MATH 171, MATH 172 | 4 |
| 10 | MATH 271 – Calculus III | MATH 172 | 4 |
| 11 | CHEM 122 – College Chemistry II | CHEM 121 | 4 |
| 12 | ENGR 221 – Statics ¹ | PHYS 140, MATH 172 | 3 |
| 13 | PHYS 241 – Electricity, Magnetism & Light | PHYS 140, MATH 172 | 5 |
| 16 | MATH 272 – Differential Eqs. | MATH 172, MATH 270 | 4 |
| 17 | ENGR 222 – Dynamics ¹ | ENGR 221, MATH 271 | 3 |
| General Education Courses (See page 36 for information on disciplines which meet these requirements.) | | | |
| 2 | ENGL 101 – English Composition I | | 3 |
| 15 | ENGL 102 – English Comp. II | ENGL 101 | 3 |
| Directed Electives (To be selected after consultation with an advisor). | | | |
| 5 | SOC 101 – Introduction to Sociology ² | | 3 |
| 14 | Social Science elective | | 3 |
| 18 | CSCI 111 – Program Alg. Dev. I or ENGR 205 – Materials Engineering | MATH 161 PHYS 241, MATH 172 | 4 4 |

Total to Graduate: 68 credits minimum

¹A student planning to major in Chemical Engineering at a transfer institution may substitute CHEM 221-222 (or CHEM 211-212) for ENGR 221 and ENGR 222.

²A different social science course that satisfies the American Diversity requirement may be substituted.

For More Information Contact:

The Division of Math, Science and Health Careers, Room W2-7, 1700 Spring Garden Street, Philadelphia, PA 19130, Telephone 215-751-8430; or the College Information Center, 215-751-8010.