Engineering Science
Associate in Science Degree, Transfer program
Division of STEM, Associate Dean: Bradley Cole
Department Chair: Debra Dudick

Engineering Science provides a foundation in engineering principles, physical sciences, mathematics, and social fields in preparation for making important contributions to engineering and society. The program provides university parallel coursework for the first two years of a bachelor’s degree in engineering. Graduates continue their education by transferring to a four-year institution where they specialize in traditional fields such as electrical, mechanical, chemical, civil, environmental, materials, aerospace, and biomedical engineering. Past graduates have successfully completed studies at Alfred University, Clarkson University, Cornell University, Rensselaer Polytechnic Institute, Rochester Institute of Technology, SUNY Buffalo, the Watson School of Engineering at SUNY Binghamton, and numerous others nationwide.

Corning Community College maintains membership in the State University of New York Two Year Engineering Science Association, a consortium of two-year and four-year ABET accredited institutions offering study in engineering.

Graduates will be able to:
• Demonstrate an understanding of engineering principles and concepts through graphic, oral, and written communication;
• Apply engineering principles and concepts in solution of problems and experiments;
• Perform selected tasks relative to laboratory experiments in the physical sciences;
• Interpret data according to physical fundamentals;
• Demonstrate computer literacy and programming proficiency;
• Use information from appropriate literature sources in completing objectives;
• Apply teamwork concepts in the solution of problems, experiments, or projects.

High school or equivalent preparation required: Four years of science including biology, chemistry and physics, and four years of mathematics, including algebra, geometry or intermediate algebra, trigonometry, and pre-calculus. Students who don’t have this preparation will be able to get it here, but it may take longer to complete the program.

Program Requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>English (ENGL 1010-1020)*</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics (MATH 1610-1620, 2610-2620)*</td>
<td>16</td>
</tr>
<tr>
<td>Social Sciences electives (ECON 2001 or 2002 recommended)</td>
<td>3</td>
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<tr>
<td>Social Sciences or Humanities elective</td>
<td>3</td>
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<tr>
<td>Computer programming (ENGR 1050)</td>
<td>3</td>
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<tr>
<td>Chemistry (CHEM 1510-1520)</td>
<td>8</td>
</tr>
<tr>
<td>Engineering (ENGR 1010, 1030)</td>
<td>5</td>
</tr>
<tr>
<td>Physics (PHYS 1820, 2830, 2840)</td>
<td>12</td>
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<tr>
<td>Technical Concentration (see list below)</td>
<td>14</td>
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<tr>
<td>Total hours</td>
<td>70</td>
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*Based on placement, students might be required to successfully complete preparatory course(s) before attempting further course or program requirements.

Sample Sequence: (intended as a guide for academic planning. It need not be followed exactly or completed in four semesters.)

First Semester
- English (ENGL1010)     3
- Mathematics (MATH 1610)     4
- Chemistry (CHEM 1510)     4
- C for Engineers (ENGR 1050)    3
- Engineering Orientation (ENGR 1010)   2

Second Semester
- English (1020)     3
- Mathematics (MATH 1620)     4
- Chemistry (CHEM 1520)     4
- Physics (PHYS 1820)    4
- Graphics for Engineers (ENGR 1030) 3

Third Semester
- Mathematics (MATH 2610) 4
- Physics (PHYS 2830) 4
- Technical Concentration 7
- Social Sciences (ECON 2001 recommended) 3

Fourth Semester
- Mathematics (MATH 2620) 4
- Physics (PHYS 2840) 4
- Technical Concentration 7
- Social Sciences or Humanities (ECON 2002 recommended) 3

Footnotes:
1. Technical Concentration: Select from CHEM 2100-2120; ENGR 2110-2120, 2150, 2180. Courses should be chosen to conform to the program requirements of the college to which the student plans to transfer. If Chemical Engineering is the intended transfer major, select CHEM 2100-2120 and two of the ENGR courses. Otherwise, select the four ENGR courses.