Northwest Iowa Community College (NCC) Transfer Plan

Iowa State University College of Engineering Requirements

- Courses must be completed with a grade of "C" or better in order to be considered for transfer credit into the College of Engineering.
- Students not adequately prepared for success in Calculus I may need to take courses in addition to those listed below. Some students may first need to successfully complete college algebra and/or college trigonometry/prep for calculus.
- The College of Engineering requires two years of a single foreign language in high school or the equivalent in college.
- Beginning Fall 2023, ISU is offering a new degree program, Biomedical Engineering. This program requires a separate application and certain first-year course requirements. If you have interest in this degree, please consult with engineering@iastate.edu

Courses required in all engineering degree programs at ISU

<table>
<thead>
<tr>
<th>Iowa State</th>
<th>Cr</th>
<th>Iowa State Course Name</th>
<th>NCC</th>
<th>Cr</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 177 (or 167)</td>
<td>4</td>
<td>General Chemistry I (for Engineers)</td>
<td>CHM 163/164</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 150</td>
<td>3</td>
<td>Critical Thinking and Communication</td>
<td>ENG 105</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 250</td>
<td>3</td>
<td>WOVE Composition</td>
<td>ENG 106</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 101</td>
<td>R</td>
<td>Engineering Orientation</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>ENGR 160*</td>
<td>3</td>
<td>Engineering Problems</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>LIB 160</td>
<td>1</td>
<td>Information Literacy</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>MATH 165</td>
<td>4</td>
<td>Calculus I</td>
<td>MAT 210-211</td>
<td>4-5</td>
</tr>
<tr>
<td>MATH 166</td>
<td>4</td>
<td>Calculus II</td>
<td>MAT 216</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 231/231L</td>
<td>5</td>
<td>Classical Physics I and Lab</td>
<td>PHY 212</td>
<td>5</td>
</tr>
</tbody>
</table>

Additional courses required in specific engineering degree programs at ISU

<table>
<thead>
<tr>
<th>Iowa State</th>
<th>Engineering Major(s) Requiring Course (see abbreviation key below)</th>
<th>Cr</th>
<th>Iowa State Course Name</th>
<th>NCC</th>
<th>Cr</th>
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</thead>
<tbody>
<tr>
<td>AGRON 181</td>
<td>AE(LW)</td>
<td>3</td>
<td>Intro to Crop Science</td>
<td>AGA 114</td>
<td>3</td>
</tr>
<tr>
<td>AGRON 182</td>
<td>AE(LW,PM)</td>
<td>3</td>
<td>Intro to Soil Science</td>
<td>AGA 154</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 211*</td>
<td>AE</td>
<td>3</td>
<td>Principles of Biology I</td>
<td>BIO 114</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 212*</td>
<td>BSE</td>
<td>3</td>
<td>Principles of Biology II</td>
<td>BIO 115</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 178/178L</td>
<td>ChE,CE,EnvE,MatE (possibly AE,BSE)</td>
<td>4</td>
<td>General Chemistry II and Lab</td>
<td>CHM 173/174</td>
<td>4</td>
</tr>
<tr>
<td>ECON 101 or ECON 102</td>
<td>ME, SE (also accepted as an elective by all other engineering majors)</td>
<td>3</td>
<td>Principles of Microeconomics (101) or Principles of Macroeconomics (102)</td>
<td>ECN 130 or ECN 120</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 170</td>
<td>AE, BSE, CE, ConE, MatE, ME</td>
<td>3</td>
<td>Engineering Graphics &amp; Intro to Design</td>
<td>EGR 400</td>
<td>3</td>
</tr>
<tr>
<td>MATH 265</td>
<td>Required (or accepted as math elective) in all majors except AE(LW), BSE</td>
<td>4</td>
<td>Calculus III</td>
<td>MAT 219</td>
<td>4</td>
</tr>
<tr>
<td>MATH 267 or 266</td>
<td>All</td>
<td>4</td>
<td>Differential Equations</td>
<td>MAT 227</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 232/232L</td>
<td>AerE,ChE,ConE,EE,IE,MatE,ME</td>
<td>5</td>
<td>Classical Physics II and Lab</td>
<td>PHY 222</td>
<td>5</td>
</tr>
<tr>
<td>SP CM 212</td>
<td>AE,BSE,CE,EnvE,IE,ME,SE (also accepted as an elective by ChE,CprE,CybE,EE,MatE)</td>
<td>3</td>
<td>Fundamentals of Public Speaking</td>
<td>SPC 101 or SPC 112</td>
<td>3</td>
</tr>
</tbody>
</table>

*NCC Name BIO 114 & BIO 115 must both be completed in order to transfer as credit for ISU BIOL 211 and BIOL 212
Abbreviation key

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Major</th>
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<tbody>
<tr>
<td>AerE</td>
<td>Aerospace Engineering</td>
</tr>
<tr>
<td>AE; LW/AP; PM</td>
<td>Agricultural Engineering; Animal Production; Power &amp; Machinery</td>
</tr>
<tr>
<td>AE</td>
<td>Agricultural Engineering</td>
</tr>
<tr>
<td>CprE</td>
<td>Computer Engineering</td>
</tr>
<tr>
<td>BH; EL; HH; MCH</td>
<td>Building Emphasis; Electrical Emphasis; Heavy/Highway; Mechanical Emphasis</td>
</tr>
<tr>
<td>BSE</td>
<td>Biological Systems Engineering</td>
</tr>
<tr>
<td>EE; FB; OP</td>
<td>Ecological option; Food &amp; Bioprocess option; Open option</td>
</tr>
<tr>
<td>ChE</td>
<td>Chemical Engineering</td>
</tr>
<tr>
<td>CE</td>
<td>Civil Engineering</td>
</tr>
<tr>
<td>Envr</td>
<td>Environmental Specialization</td>
</tr>
<tr>
<td>ME</td>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>SE</td>
<td>Software Engineering</td>
</tr>
</tbody>
</table>

General Education: Social Science/Humanities (SS/H) Requirements

- Engineering degree programs require between 9 and 15 general education credits in social sciences and humanities (SS/H).
- The list below offers course options that are widely accepted by ISU engineering majors; however, each program has unique requirements—please confirm choices on an individual basis if you know your intended engineering major.
- Iowa State University requires each student to complete three credits of course work categorized as “US Diversity” (indicated below with †); and three credits of course work categorized as “International Perspective” (indicated below with ‡). These can be included within the SS/H requirements.

<table>
<thead>
<tr>
<th>Iowa State Course Name</th>
<th>NCC</th>
<th>Cr</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANT 105</td>
<td>ANT 105</td>
<td>3</td>
</tr>
<tr>
<td>ECON 130 or 120</td>
<td>ECON 130 or 120</td>
<td>3</td>
</tr>
<tr>
<td>HD FS 276†</td>
<td>PSIY 261</td>
<td>3</td>
</tr>
<tr>
<td>HIST 101†</td>
<td>HIST 101</td>
<td>3</td>
</tr>
<tr>
<td>HIST 202†</td>
<td>HIST 111</td>
<td>3</td>
</tr>
<tr>
<td>HIST 221</td>
<td>HIST 151</td>
<td>3</td>
</tr>
<tr>
<td>HIST 222</td>
<td>HIST 152</td>
<td>3</td>
</tr>
<tr>
<td>MUS 102‡</td>
<td>MUS 100</td>
<td>3</td>
</tr>
<tr>
<td>PHI 101</td>
<td>PHI 101</td>
<td>3</td>
</tr>
<tr>
<td>POL 111</td>
<td>POL 111</td>
<td>3</td>
</tr>
<tr>
<td>POL 125‡</td>
<td>POL 125</td>
<td>3</td>
</tr>
<tr>
<td>PSY 111</td>
<td>PSIY 111</td>
<td>3</td>
</tr>
<tr>
<td>PSY 121</td>
<td>PSIY 121</td>
<td>3</td>
</tr>
<tr>
<td>PSY 251</td>
<td>PSIY 251</td>
<td>3</td>
</tr>
<tr>
<td>REL 205‡</td>
<td>REL 101</td>
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<tr>
<td>SOC 110</td>
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<td>SOC 120</td>
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<tr>
<td>SOC 115</td>
<td>SOC 115</td>
<td>3</td>
</tr>
<tr>
<td>SOC 230</td>
<td>SOC 230</td>
<td>3</td>
</tr>
</tbody>
</table>

Social science/humanities (SS/H) courses widely accepted in ISU engineering degree programs

More information and resources

- Pre-engineering students are strongly encouraged to join Iowa State’s free Engineering Admissions Partnership Program (E-APP) to stay connected to resources and current information; email engineering@iastate.edu for more information.
- Please use this transfer plan as a guide as you confirm course choices with an academic advisor in your major of interest.
- Additional transfer student resources are available at www.engineering.iastate.edu/transfer-students.
- Email questions to engineering@iastate.edu.

Last updated on 7/26/23 based on course listings in the ISU 2022-23 catalog and the NCC 2022-23 catalog.
Sample NCC course plan – Year One
(Shown as an example only – please personalize when working with your academic advisor.)

SEMIESTER 1

<table>
<thead>
<tr>
<th>NCC Course Number</th>
<th>Credits</th>
<th>Course Name/Topic</th>
<th>Equivalent course at Iowa State</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 105</td>
<td>3</td>
<td>English/Composition I</td>
<td>ENGL 150</td>
</tr>
<tr>
<td>MAT 210/211</td>
<td>4</td>
<td>Calculus I</td>
<td>MATH 165</td>
</tr>
<tr>
<td>CHM 163/164</td>
<td>4</td>
<td>General Chemistry I</td>
<td>CHEM 177 (or CHEM 167)</td>
</tr>
<tr>
<td>MUS 100 or ANT 105</td>
<td>3</td>
<td>SS/H (meets International Perspective) (or choose another SS/H elective)</td>
<td>MUSIC 102(^2) or ANTHRO 201(^2)</td>
</tr>
</tbody>
</table>

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SEMIESTER 2

<table>
<thead>
<tr>
<th>NCC Course Number</th>
<th>Credits</th>
<th>Course Name/Topic</th>
<th>Equivalent course at Iowa State</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 106</td>
<td>3</td>
<td>English/Composition II</td>
<td>ENGL 250</td>
</tr>
<tr>
<td>MAT 216</td>
<td>4</td>
<td>Calculus II</td>
<td>MATH 166</td>
</tr>
<tr>
<td>PHY 212</td>
<td>5</td>
<td>Classical Physics I and lab</td>
<td>PHYS 231/231L</td>
</tr>
<tr>
<td>ECN 130 or 120</td>
<td>3</td>
<td>Microeconomics (or Macro)</td>
<td>ECN 101 or 102</td>
</tr>
</tbody>
</table>

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