

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 credits into the College of Engineering.
- All engineering students must successfully complete **BASIC PROGRAM** courses (listed below) before progressing to upper level engineering program course work.
- Students not adequately prepared for success in Calculus I may need to take courses in addition to those listed in the Basic Program. Some students may first need to successfully complete college algebra (Math 140; NCC MATH 1100) and/or college trigonometry/prep for calculus (Math 143; NCC MATH 1150 or 1500).
- The College of Engineering requires two years of a single foreign language in high school – OR – an equivalent in college (typically two semesters).

**BASIC PROGRAM courses: required in all engineering degree programs at ISU**

ISU Course	Cr	NCC Course	Cr
CHEM 177 or 167	4	General Chemistry for Engineers	CHEM 1061 4
ENGL 150	3	Critical Thinking and Communication	ENGC 1101 4
ENGL 250	3	WOVE Composition	n/a
ENGR 101	R	Engineering Orientation	n/a
ENGR 160	3	Engineering Problems	n/a
LIB 160	1	Information Literacy	n/a
MATH 165	4	Calculus I	MATH 1510 5
MATH 166	4	Calculus II	MATH 1520 5
PHYS 221	5	Classical Physics I	PHYS 1121 5

**Additional courses required in *specific* engineering degree programs (majors) at ISU**  
(see abbreviation key below)

ISU Course	Engineering Major Requiring	Cr	NCC	Cr
BIOL 211+	AE, CE(Envr)	3	Principles of Biology I	BIOL 1501+ 4
BIOL 212+	BSE	3	Principles of Biology II	BIOL 1502+ 4
MICRO 201/201L	AE(LW)	4	Microbiology	BIOL 2043 4
CHEM 178/178L	ChE,CE,MatE (& AE,BSE if 177 completed)	4	General Chemistry II & Lab II	CHEM 1062 4
CHEM 331/331L	BSE(BR,Pre), ChE	5	Organic Chemistry I	CHEM 2061 5
CHEM 332/332L	BSE(BR,Pre), ChE	5	Organic Chemistry II	CHEM 2062 5
ECON 101 or 102	ConE, ME, SE (also accepted as an elective by all engineering majors)	3	Intro to Microeconomics (101) or Intro to Macroeconomics (102)	ECON 2201 or 2202 3
EM 274	All <i>except</i> ChE, CprE, EE, SE	3	Engineering Statics	ENGR 2235 3
EM 345	AerE, AE(PM), CE, ME	3	Dynamics	ENGR 2236 3
MATH 265	All <i>except</i> AE, BSE, SE	4	Calculus III	MATH 2510 5
MATH 267	ALL	4	Elem. Diff. Eq's & Laplace Trans.	MATH 2520 5
PHYS 222	All <i>except</i> AE, BSE, CE(Envr), SE	5	Classical Physics II	PHYS 1122 5
SP CM 212	CE,IE,SE (also accepted as an elective by AE, BSE, ChE, CprE, EE, MatE, ME)	3	Fundamentals of Public Speaking	COMM 1101 3

\*NCC BIOL 1501 & BIOL 1502 must both be completed in order to transfer as credit for ISU BIOL 211 and BIOL 212

**Abbreviation key:**

Abbreviation	Major	Abbreviation	Major
AerE	Aerospace Engineering	CprE	Computer Engineering
AE	Agricultural Engineering	ConE	Construction Engineering
LW; AP; PM	Land&Water Resources option; Animal Production Systems option; Power & Machinery option	EE	Electrical Engineering
BSE	Biological Systems Engineering	IE	Industrial Engineering
BE; FE	Bioenvironmental option; Food Engineering option;	MatE	Materials Engineering
BR; Op	Biorenewable Resources option; Open option	ME	Mechanical Engineering
ChE	Chemical Engineering	SE	Software Engineering
CE	Civil Engineering		
Envr	Environmental option		

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

- Engineering degree programs require between 12 and 15 credits in social sciences/humanities/general education (SS/H). The list below offers course options that are accepted by all ISU engineering departments; however, each program has unique requirements—please confirm choices on an individual basis if you know your intended engineering program.
- Iowa State University requires each student to complete three credits of course work categorized as “US Diversity” (indicated below with <sup>1</sup>); and 3 credits of course work categorized as “International Perspective” (indicated below with <sup>2</sup>). These can be included within the 12-15 credits of SS/H requirements.

**Social science/humanities/general education (SS/H) courses accepted  
in all ISU engineering degree programs**

ISU Course	Cr		NCC Course	Cr
ANTHR 201 <sup>2</sup>	3	Introduction to Cultural Anthropology	ANTH 1127	3
ECON 101	3	Principles of Microeconomics	ECON 2201	3
ECON 102	3	Principles of Macroeconomics	ECON 2202	3
ENGL 201	3	Introduction to Literature	ENGL 1000	3
HD FS 240 <sup>1</sup>	3	Literature for Children	LIT 105	3
HIST 201 <sup>2</sup>	3	Introduction To Western Civilization I	HIST 1101, 1102 and	6
HIST 202 <sup>2</sup>	3	Introduction To Western Civilization II	1103 (combined)	6
HIST 221	3	Survey of U.S History I	HIST 1111	4
HIST 222	3	Survey of U.S History II	HIST 1112	4
MUSIC 102 <sup>2</sup>	3	Introduction to Music Listening	MUSC 1122	3
PHIL 201	3	Introduction to Philosophy	PHIL 1101	3
POL S 215	3	Introduction to American Government	POLS 1130	3
POL S 241 <sup>2</sup>	3	Comparative Governments and Politics	POLS 1132	3
PSYCH 101	3	Introduction to Psychology	PSYC 1110	3
PSYCH 230	3	Developmental Psychology	PSYC 2210	3
PSYCH 280	3	Social Psychology	PSYC 2600 or	3
			SOC 2108	
HD FS 276 <sup>1</sup>	3	Human Sexuality	PSY 261	3
RELIG 205 <sup>2</sup>	3	Introduction to World Religions	REL 101	3
SOC 134	3	Introduction to Sociology	SOC 1104	3
SOC 219	3	Sociology of Intimate Relationships	SOC 1102	3
SOC 235 <sup>1</sup>	3	Social Problems and American Values	SOC 1106	3
SOC 241	3	Youth and Crime	SOC 2131	3
WGS 201 <sup>1</sup>	3	Introduction to Women’s Studies	ANTH 1120 or	3
			SOC 1120 or	
			WMST 1120	

More information and resources

- Please use this transfer plan as a guide as you confirm course choices with an academic adviser in your major of interest.
- Additional transfer student resources are available at [www.engineering.iastate.edu/transfer](http://www.engineering.iastate.edu/transfer).
- Email questions to [engrapp@iastate.edu](mailto:engrapp@iastate.edu).