

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; HC MTH 103) and/or college trigonometry/prep for calculus (MATH 143; HC MTH 140).
- 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		Harper Course	Cr
CHEM 177 or 167	4	General Chemistry for Engineers	CHM 121	5
ENGL 150	3	Critical Thinking and Communication	ENG 101	3
ENGL 250	3	WOVE Composition	ENG 102	3
ENGR 101	R	Engineering Orientation		
ENGR 160	3	Engineering Problems		
LIB 160	1	Information Literacy		
MATH 165	4	Calculus I	MTH 200	5
MATH 166	4	Calculus II	MTH 201	5
PHYS 221	5	Classical Physics I	PHY 201 and 202 [^]	12

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

ISU Course	Engineering Major Requiring	Cr		Harper Course	Cr
BIOL 211 ⁺	AE, CE(Envr)	3	Principles of Biology I	BIO 115 ⁺	4
BIOL 212 ⁺	BSE	3	Principles of Biology II	BIO 116 ⁺	4
CHEM 178/178L	ChE, CE, MatE (& AE, BSE if 177 completed)	4	General Chemistry II & Lab II	CHM 122	5
CHEM 231/231L	CE(Envr)	4	Elementary Organic Chemistry	CHM 201	4
CHEM 331/333L	BSE(BR, Pre), ChE	5	Organic Chemistry I	CHEM 204	5
CHEM 332/334L	BSE(BR, Pre), ChE	5	Organic Chemistry II	CHEM 205	5
ECON 101 or 102	ConE, ME (also accepted as an elective by all engineering majors)	3	Intro to Microeconomics (101) or Intro to Macroeconomics (102)	ECO 211 or 212	3
ENGR 170	AE, BSE, CE, ConE, ME	3	Engr. Graphics & Intro. to Design	EGR 120	4
EM 274	All <i>except</i> ChE, CprE, EE, SE	3	Engineering Statics	EGR 210	3
EM 324	AerE, AE, BSE, CE, ConE, MatE, ME	3	Mechanics of Materials	EGR 212	3
EM 345	AerE, AE(PM), CE, ME	3	Dynamics	EGR 211	3
ME 231	AerE, AE, BSE, ConE(Mech), IE, ME	3	Thermodynamics	EGR 240	3
MATH 207	EE	3	Linear Algebra	MTH 203	4
MATH 265	All <i>except</i> AE, BSE, SE	4	Calculus III	MTH 202	4
MATH 267	ALL	4	Elem. Differential Equations	MTH 212	3
PHYS 222	All <i>except</i> AE, BSE, CE(Envr), SE	5	Classical Physics II	PHY 202 and 203 [^]	(9 [^])
SP CM 212	CE, IE, SE (also accepted as an elective by AE, BSE, ChE, CprE, EE, MatE, ME)	3	Fundamentals of Public Speaking	SPE 101	3

⁺HC BIO 115 & BIO 116 must **both** be completed in order to transfer as credit for ISU BIOL 211 and BIOL 212

[^]The combination of HC PHY 201, 202 and 203 together will transfer as credit for ISU PHYS 221 and 222

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 ¹); and 3 credits of course work categorized as “International Perspective” (indicated below with ²). 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		Harper Course	Cr
ANTHR 201 ²	3	Introduction to Cultural Anthropology	ANT 202	3
CL ST 273 ²	3	Greek and Roman Mythology	HUM 120	3
ECON 101	3	Principles of Microeconomics	ECO 211	3
ECON 102	3	Principles of Macroeconomics	ECO 212	3
HD FS 240 ¹	3	Children’s Literature	LIT 219	3
HD FS 276 ¹	3	Human Sexuality	HED 202	3
HIST 201 ²	3	Introduction To Western Civilization I	HST 141 or HUM 101	3
HIST 202 ²	3	Introduction To Western Civilization II	HST 142 or HUM 102	3
HIST 221	3	Survey of U.S History I	HST 111	3
HIST 222	3	Survey of U.S History II	HST 112	3
MUSIC 102 ²	3	Introduction to Music Listening	MUS 103 or 120	3
PHIL 201	3	Introduction to Philosophy	PHI 105	3
RELIG 205 ²	3	Introduction to World Religions	PHI 205	3
RELIG 210 ¹	3	Religion in America	PHI 215	3
POL S 215	3	Introduction to American Government	PSC 101	3
POL S 241	3	Comparative Politics	PSC 250	3
PSYCH 101	3	Introduction to Psychology	PSY 101	3
PSYCH 230	3	Developmental Psychology	PSY 228	3
PSYCH 280	3	Social Psychology	SOC 215	3
SOC 134	3	Introduction to Sociology	SOC 101	3
SOC 219	3	Sociology of Intimate Relationships	SOC 120	3
SOC 235 ¹	3	Social Problems and American Values	SOC 205	3
SOC 241	3	Youth and Crime	LEJ 205	3

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.
- Email questions to engrapp@iastate.edu.