

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; NIACC MAT 120 or 121) and/or college trigonometry/prep for calculus (Math 143; NIACC MAT 128 or 134).
- 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	NIACC Course	Cr	
CHEM 177 or 167	4	General Chemistry for Engineers	CHM 166	5
ENGL 150	3	Critical Thinking and Communication	ENG 105	3
ENGL 250	3	WOVE Composition	ENG 106	3
ENGR 101	R	Engineering Orientation	N/A	
ENGR 160*	3	Engineering Problems	EGR 181	3
LIB 160	1	Information Literacy	N/A	
MATH 165	4	Calculus I	MAT 210	4
MATH 166	4	Calculus II	MAT 216	4
PHYS 221	5	Classical Physics I	PHY 212	5

*May also transfer for
 ABE 160, AerE 160, CE 160,
 ChE 160, CprE/EE 185,
 IE 148, ME 160 or SE 185.

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

ISU Course	Engineering Major Requiring	Cr	NIACC	Cr	
AGRON 181	AE(LW)	3	Principles of Agronomy	AGA 114	3
AGRON 182	AE(LW,PM)	3	Soil Science	AGA 154	3
AN S 114	AE(AP)	2	Survey of Animal Industry	AGS 109	3
BIOL 211+	AE, CE(Envr)	3	Principles of Biology I	BIO 202+	4
BIOL 212+	BSE	3	Principles of Biology II	BIO 203+	4
CHEM 178/178L	ChE,CE,MatE (& AE,BSE if 177 completed)	4	General Chemistry II & Lab II	CHM 176	5
CHEM 331/333L	BSE(BR,Pre), ChE	5	Organic Chemistry I	CHM 263	5
CHEM 332/334L	BSE(BR,Pre), ChE	5	Organic Chemistry II	CHM 273	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)	ECN 130 or 120	3
ENGR 170	AE, BSE, CE, ConE, ME	3	Engr. Graphics & Intro. to Design	EGR 192	3
EM 274	All <i>except</i> ChE, CprE, EE, SE	3	Engineering Statics	EGR 274	3
EM 324	AerE, AE, BSE, CE, ConE, MatE, ME	3	Mechanics of Materials	EGR 324	3
MATH 265	All <i>except</i> AE, BSE, SE	4	Calculus III	MAT 219	4
MATH 267	ALL	4	Elem. Diff. Eq's & Laplace Trans.	MAT 226	3
PHYS 222	All <i>except</i> AE, BSE, CE(Envr), SE	5	Classical Physics II	PHY 222	5
SP CM 212	CE,IE,SE (also accepted as a communication elective by AE, BSE, ME and as a general education elective by ChE, CprE, EE, MatE; NOT accepted by AerE or ConE)	3	Fundamentals of Public Speaking	SPC 112	3

*NIACC BIO 202 & BIO 203 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 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		NIACC Course	Cr
ANTHR 201 ²	3	Introduction to Cultural Anthropology	ANT 105	3
SOC 241	3	Youth and Crime	CRJ 201	3
ECON 101	3	Principles of Microeconomics	ECN 130	3
ECON 102	3	Principles of Macroeconomics	ECN 120	3
ENGL 201	3	Introduction to Literature	LIT 101	3
HD FS 240 ¹	3	Literature for Children	EDU 235	3
HIST 201 ²	3	Introduction To Western Civilization I	HIS 112	3
HIST 202 ²	3	Introduction To Western Civilization II	HIS 113	3
HIST 221	3	Survey of U.S History I	HIS 151	3
HIST 222	3	Survey of U.S History II	HIS 152	3
MUSIC 102 ²	3	Introduction to Music Listening	MUS 100	3
PHIL 201	3	Introduction to Philosophy	PHI 101	3
POL S 215	3	Introduction to American Government	POL 111	3
POL S 251 ²	3	Introduction to International Politics	POL 121	3
PSYCH 101	3	Introduction to Psychology	PSY 111	3
PSYCH 230	3	Developmental Psychology	PSY 121	3
PSYCH 280	3	Social Psychology	PSY 251	3
SOC 134	3	Introduction to Sociology	SOC 110	3
SOC 219	3	Sociology of Intimate Relationships	SOC 120	3
SOC 235 ¹	3	Social Problems and American Values	SOC 115	3

More information and resources

- Pre-engineering students are strongly encouraged to join ISU’s free Engineering Admissions Partnership Program (E-APP) to stay connected to resources and current information; email engrapp@iastate.edu and ask for the E-APP online application.
- 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.