

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; KCC MAT 120 or 138) and/or college trigonometry/prep for calculus (Math 143; KCC MAT 136).
- 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		Kirkwood Course	Cr	
CHEM 177 (or 167)	4	General Chemistry for Engineers	CHM 165	4	
ENGL 150	3	Critical Thinking and Communication	ENG 105 [#]	3	#KCC's ENG 120 transfers with insufficient credits to meet ISU's required 6 cr ENGL 150 & 250.
ENGL 250	3	WOVE Composition	ENG 106 or 108	3	
ENGR 101	R	Engineering Orientation	EGR 100	1	
ENGR 160*	3	Engineering Problems	EGR 160 <u>and</u> EGR 167	7	
LIB 160	1	Information Literacy	SDV 119	1	*May also transfer for ABE 160, AerE 160, CE 160, ChE 160, CprE/EE 185, IE 148, ME 160 or SE 185.
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	

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

ISU Course	Engineering Major Requiring	Cr		Kirkwood Course	Cr
AGRON 181	AE(LW)	3	Principles of Agronomy	AGA 114	3
AGRON 182	AE(PM,LW)	3	Fundamentals of Soil Science	AGA 154	3
ANS 114 & 101	AE(AP)	3	Survey of the Animal Industry	AGS 113	3
BIOL 211 ⁺	AE, CE(Envr)	3	Principles of Biology I	BIO 112 ⁺	4
BIOL 212 ⁺	BSE	3	Principles of Biology II	BIO 113 ⁺	4
MICRO 201/201L	AE(LW)	4	Intro to Microbiology	BIO 186	4
CHEM 178/178L	ChE,CE,MatE (& AE,BSE if 177 completed)	4	General Chemistry II & Lab II	CHM 175	4
CHEM 231/231L	BSE, CE(Envr)	4	Elementary Organic Chemistry	CHM 132	4
CHEM 331/333L	BSE, ChE	3	Organic Chemistry I	CHM 262	3
CHEM 332/334L	BSE, ChE	3	Organic Chemistry II	CHM 272	3
COM S 227 ⁺⁺	CprE, CybE, SE	4	Computer Science	CSC 142 <u>and</u>	4
COM S 228 ⁺⁺		3	Data Structures	CSC 153 <u>and</u>	4
			Software Design/Development	CSC 160 ⁺⁺	4
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	Engineering Graphics & Design	EGR 400	3
EM 274	All <i>except</i> ChE, CprE, CybE, EE, SE	3	Engineering Statics	EGR 180	3
EM 345	AerE, AE(PM), CE, ME	3	Dynamics	EGR 280	3
MAT E 273	AerE, AE(PM), IE, ME	3	Principles of Materials Science/Engr	EGR 170	3
MATH 207	EE	3	Linear Algebra	MAT 149	3
MATH 265	All <i>except</i> AE, BSE (also accepted as a math elective by CybE, SE)	4	Calculus III	MAT 219	4
MATH 267	All	4	Elem. Diff. Eq's & Laplace Trans.	MAT 227	4
M E 231	AerE, AE, BSE, ConE(Mech), IE, ME	3	Thermodynamics	EGR 290	3
PHYS 222	All <i>except</i> AE, BSE, CE(Envr), CybE, SE	5	Classical Physics II	PHY 222	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	SPC 101 or 112	3

*Kirkwood BIO 112 and BIO 113 must both be completed in order to transfer as credit for ISU Biol 211 and Biol 212.

**Kirkwood CSC 142, CSC 153 and CSC 160 must all be completed in order to transfer as credit for ISU COM S 227 and 228.

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	CybE	Cyber Security Engineering
BSE	Biological Systems Engineering	EE	Electrical Engineering
BE; FE	Bioenvironmental option; Food Engineering option;	IE	Industrial Engineering
BR; Op	Biorenewable Resources option; Open option	MatE	Materials Engineering
ChE	Chemical Engineering	ME	Mechanical Engineering
CE	Civil Engineering	SE	Software Engineering
Envr	Environmental option		

Social Science/Humanities (SS/H) General Education 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 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		Kirkwood Course	Cr
AM IN 210 ¹	3	Introduction to American Indian Studies	HIS 254	3
ANTHR 201 ²	3	Introduction to Cultural Anthropology	ANT 105	3
ECON 101	3	Principles of Microeconomics	ECN 130	3
ECON 102	3	Principles of Macroeconomics	ECN 120	3
HD FS 240 ¹	3	Literature for Children	LIT 105	3
HIST 201 ²	3	Introduction To Western Civilization I	HIS 121 & 122	6
HIST 202 ²	3	Introduction To Western Civilization II	HIS 123 & 124	6
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 241 ²	3	Comparative Governments and Politics	POL 125	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
HD FS 276 ¹	3	Human Sexuality	PSY 261	3
RELIG 205 ²	3	Introduction to World Religions	REL 101	3
RELIG 210 ¹	3	Religion in America	REL 140	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
SOC 241	3	Youth & Crime	CRJ 201	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. Members of E-APP have access to ISU Engineering Career Services resources as well.
- 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.