

# IOWA STATE UNIVERSITY

## College of Engineering

### Southwestern Community College (SWCC) 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](mailto:engineering@iastate.edu)

<b>Courses required in all engineering degree programs at ISU</b> <i>&gt;&gt; focus on these courses first &lt;&lt;</i>				
<b>Iowa State</b>	<b>Cr</b>	<b>Iowa State Course Name</b>	<b>SWCC</b>	<b>Cr</b>
CHEM 177 (or 167)	4	General Chemistry I (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	N/A	
LIB 160	1	Information Literacy	N/A	
MATH 165	4	Calculus I	MAT 210	4
MATH 166	4	Calculus II	MAT 216	4
PHYS 231/231L	5	Classical Physics I and Lab	PHY 212	5

<b>Additional courses required in specific engineering degree programs at ISU</b>					
<b>Iowa State</b>	<b>Engineering Major(s) Requiring Course</b> (see abbreviation key below)	<b>Cr</b>	<b>Iowa State Course Name</b>	<b>SWCC</b>	<b>Cr</b>
AGRON 181	AE(LW)	3	Intro to Crop Science	AGA 181 or 114	3
AGRON 182	AE(LW,PM)	3	Intro to Soil Science	AGA 182	3
BIOL 211+	AE	3	Principles of Biology I	BIO 112	4
BIOL 212*	BSE	3	Principles of Biology II	BIO 113	4
CHEM 178/178L	ChE,CE,EnvE,MatE (possibly AE,BSE)	4	General Chemistry II and Lab	CHM 176	5
CHEM 331/333L	ChE (possibly BSE)	5	Organic Chemistry I and Lab	CHM 261	4
CHEM 332/334L	ChE (possibly BSE)	5	Organic Chemistry II and Lab	CHM 271	4
ECON 101 or ECON 102	ME, SE (also accepted as an elective by all other engineering majors)	3	Principles of Microeconomics (101) or Principles of Macroeconomics (102)	ECN 130 or ECN 120	3
MATH 265	Required (or accepted as math elective) in all majors except AE(LW), BSE	4	Calculus III	MAT 219	4
MATH 267 or 266	All	4	Differential Equations	MAT 227	4
MICRO 201/201L	AE(LW), CE(Envr), EnvE	3	Intro to Microbiology and Lab	BIO 186	4
PHYS 232/232L	AerE,ChE,ConE,EE,IE,MatE,ME	5	Classical Physics II and Lab	PHY 222	5
SP CM 212	AE,BSE,CE,EnvE,IE,ME,SE (also accepted as an elective by ChE,CprE,CyBE,EE,MatE)	3	Fundamentals of Public Speaking	SPC 101 or SPC 112	3

\*SWCC BIO 112 & BIO 113 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 <i>LW;AP; PM</i>	Agricultural Engineering Land&Water Resources option; Animal Production Systems option; Power&Machinery option	ConE <i>BE; EL; HH; MCH</i>	Construction Engineering Building Emphasis; Electrical Emphasis; Heavy/Highway; Mechanical Emphasis
BSE <i>EC; FB; OP</i>	Biological Systems Engineering Ecological option; Food & Bioprocess option; Open option	CybE	Cyber Security Engineering
		EE	Electrical Engineering
		EnvE	Environmental Engineering
ChE	Chemical Engineering	IE	Industrial Engineering
CE <i>Envr</i>	Civil Engineering Environmental Specialization	MatE	Materials Engineering
		ME	Mechanical Engineering
		SE	Software Engineering

### 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 <sup>1</sup>); and three credits of course work categorized as “International Perspective” (indicated below with <sup>2</sup>). These can be included within the SS/H requirements.

Social science/humanities (SS/H) courses widely accepted in ISU engineering degree programs				
Iowa State	Cr	Iowa State Course Name	SWCC	Cr
ANTHRO 201 <sup>2</sup>	3	Intro to Cultural Anthropology	ANT 105	3
ECON 101 or ECON 102	3	Principles of Microeconomics or Macroeconomics	ECN 130 or 120	3
HD FS 240 <sup>1</sup>	3	Literature for Children	EDU 235 or LIT 105	3
HIST 201 <sup>2</sup>	3	Intro to Western Civilization I	HIS 110	3
HIST 202 <sup>2</sup>	3	Intro to Western Civilization II	HIS 111	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 <sup>2</sup>	3	Intro to Music Listening	MUS 100	3
PHIL 201	3	Intro to Philosophy	PHI 101	3
POL S 111	3	Intro to American Government	POL 111	3
PSYCH 101	3	Intro to Psychology	PSY 111	3
PSYCH 230	3	Developmental Psychology	PSY 121	3
PSYCH 280	3	Social Psychology	PSY 251	3
RELIG 205 <sup>2</sup>	3	World Religions	REL 101	3
SOC 134	3	Intro to Sociology	SOC 110	3
SOC 219	3	Sociology of Intimate Relationships	SOC 120	3
SOC 235 <sup>1</sup>	3	Social Problems and American Values	SOC 115	3

### 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](mailto: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](http://www.engineering.iastate.edu/transfer-students).
- Email questions to [engineering@iastate.edu](mailto:engineering@iastate.edu).

**Sample SWCC course plan – Year One**

*(Shown as an example only – please personalize when working with your academic advisor)*

**SEMESTER 1**

<b>SWCC Course Number</b>	<b>Credits</b>	<b>Course Name/Topic</b>	<b>Equivalent course at Iowa State</b>
ENG 105	3	English/Composition I	ENGL 150
MAT 210	4	Calculus I	MATH 165
HIS 110	3	Western Civ I (Humanities Elective)	HIST 201 <sup>2</sup>
CHM 166	5	General Chemistry I	CHEM 177 (or CHEM 167)
	= 15 cr		

**SEMESTER 2**

<b>SWCC Course Number</b>	<b>Credits</b>	<b>Course Name/Topic</b>	<b>Equivalent course at Iowa State</b>
ENG 106	3	English/Composition II	ENGL 250
MAT 216	4	Calculus II	MATH 166
PHY 212	5	Classical Physics I	PHYS 231/231L
ECN 130	3	Microeconomics (Social Science Elective)	ECON 101
	= 15 cr		