

IOWA STATE UNIVERSITY

College of Engineering

Harper College 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

Courses required in all engineering degree programs at ISU				
>> focus on these courses first <<				
Iowa State	Cr	Iowa State Course Name	Harper	Cr
CHEM 177 (or 167)	4	General Chemistry I (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	N/A	
ENGR 160	3	Engineering Problems	N/A	
LIB 160	1	Information Literacy	N/A	
MATH 165	4	Calculus I	MTH 200	5
MATH 166	4	Calculus II	MTH 201	5
PHYS 231/231L	5	Classical Physics I and Lab	PHY 201 & 203	10

Additional courses required in specific engineering degree programs at ISU					
Iowa State	Engineering Major(s) Requiring Course (see abbreviation key below)	Cr	Iowa State Course Name	Harper	Cr
BIOL 211+	AE	3	Principles of Biology I	BIO 115	4
BIOL 212+	BSE	3	Principles of Biology II	BIO 116	4
CE 274	All except ChE, CprE, CybE, EE, MatE, SE	3	Engineering Statics	EGR 210	3
CHEM 178/178L	ChE, CE, EnvE, MatE (possibly AE, BSE)	4	General Chemistry II and Lab	CHM 122	5
CHEM 231/231L	BSE, CE(Envr), EnvE	4	Elementary Organic Chemistry and Lab	CHM 201	4
CHEM 331/333L	ChE (possibly BSE)	5	Organic Chemistry I and Lab	CHM 204	5
CHEM 332/334L	ChE (possibly BSE)	5	Organic Chemistry II and Lab	CHM 205	5
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)	ECO 211 or ECO 212	3
EM 324	AerE, AE, BSE, CE, ConE, EnvE, ME	3	Mechanics of Materials	EGR 212	3
ENGR 170	AE, BSE, CE, ConE, MatE, ME	3	Engineering Graphics & Intro to Design	EGR 120	4
MATH 207	EE, CprE	3	Matrices and Linear Algebra	MTH 203	4
MATH 265	Required (or accepted as math elective) in all majors except AE(LW), BSE	4	Calculus III	MTH 202	5
MATH 267 or 266	All	4	Differential Equations	MTH 212	3
ME 231	AerE, AE, BSE, ConE(MCH), EnvE, IE, ME	3	Engineering Thermodynamics I	EGR 240	3
ME 345	AerE, AE(PM), CE, ME	3	Engineering Dynamics	EGR 211	3
PHYS 232/232L	AerE, ChE, ConE, EE, IE, MatE, ME	5	Classical Physics II and Lab	PHY 202	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	SPE 101	3

*Harper BIO 115 & BIO 116 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
<i>LW; AP; PM</i>	Land&Water Resources option; Animal Production Systems option; Power&Machinery option	<i>BE; EL; HH; MCH</i>	Building Emphasis; Electrical Emphasis; Heavy/Highway; Mechanical Emphasis
BSE	Biological Systems Engineering	CybE	Cyber Security Engineering
<i>EC; FB; OP</i>	Ecological option; Food & Bioprocess option; Open option	EE	Electrical Engineering
ChE	Chemical Engineering	EnvE	Environmental Engineering
CE	Civil Engineering	IE	Industrial Engineering
<i>Envr</i>	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 ¹); and three credits of course work categorized as “International Perspective” (indicated below with ²). 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	Harper	Cr
ANTHRO 201 ²	3	Intro to Cultural Anthropology	ANT 202	3
CL ST 273 ²	3	Greek and Roman Mythology	HUM 120	3
ECON 101 or ECON 102	3	Principles of Microeconomics or Macroeconomics	ECO 211 or 212	3
HD FS 240 ¹	3	Literature for Children	LIT 219	3
HD FS 276 ¹	3	Human Sexuality	HED 202	3
HIST 201 ²	3	Intro to Western Civilization I	HUM 101	3
HIST 202 ²	3	Intro to Western Civilization II	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	Intro to Music Listening	MUS 103 or 120	3
PHIL 201	3	Intro to Philosophy	PHI 105	3
POL S 111	3	Intro to American Government	PSC 101	3
POL S 125 ²	3	Democracy and Dictatorship: Intro to Comparative Politics	PSC 250	3
PSYCH 101	3	Intro to Psychology	PSY 101	3
PSYCH 230	3	Developmental Psychology	PSY 228	3
PSYCH 280	3	Social Psychology	SOC 215	3
RELIG 205 ²	3	World Religions	PHI 205	3
RELIG 210 ¹	3	Religion in America	PHI 215	3
SOC 134	3	Intro 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 advisor in your major of interest.
- Additional transfer student resources are available at www.engineering.iastate.edu/transfer-students.
- Email questions to engineering@iastate.edu.

Sample Harper College course plan – Year One

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

SEMESTER 1

Harper Course Number	Credits	Course Name/Topic	Equivalent course at Iowa State
ENG 101	3	English/Composition I	ENGL 150
MTH 200	5	Calculus I	MATH 165
HUM 101	3	Western Civilization I	HIST 201 ²
CHM 121	5	General Chemistry I	CHEM 177 (or CHEM 167)
	= 16 cr		

SEMESTER 2

Harper Course Number	Credits	Course Name/Topic	Equivalent course at Iowa State
ENG 102	3	English/Composition II	ENGL 250
MTH 201	5	Calculus II	MATH 166
PHY 201*	5	Classical Physics I	PHYS 231*/231L
ECO 211	3	Microeconomics	ECON 101
	= 16 cr		

SUMMER 1

Harper Course Number	Credits	Course Name/Topic	Equivalent course at Iowa State
PHY 203*	5	Classical Physics I	PHYS 231*/231L
	= 5 cr		

*both PHY 201 and 203 must be completed to transfer credit to meet ISU's Classical Physics I requirement