

# Eastern Iowa Community College District — Missouri S&T

## General Engineering Transfer Guide

Effective as of Fall 2017

Complete Group 1 - Core Requirements and Group 2 - Major Requirements for major of choice.

### Group 1 - Core Requirements: All Majors Take All Courses

Engineering students take all Group 1 - Core Requirements and Group 2 - Major Requirements for major of choice. Math prerequisites: While they are not part of Missouri S&T engineering degree requirements, algebra and trigonometry skills are critical to success in calculus. To prepare for entry into calculus, students should follow math placement testing and advising recommendations at their college.

<u>Eastern Iowa Community College District</u>			<u>Semester</u>	<u>Missouri S&amp;T</u>		
MAT 210	Calculus I	4	MATH 1214	Calculus for Engineers I	Grade of C or better is required.	4
MAT 216	Calculus II	4	MATH 1215	Calculus for Engineers II	Grade of C or better is required.	4
MAT 219	Calculus III	4	MATH 2222	Calculus with Analytic Geometry III	Grade of C or better is required.	4
MAT 227	Differential Equations	3	MATH 3304	Elementary Differential Equations		3
PHY 212	Classical Physics I	5	PHYSICS 1135	Engineering Physics I	Grade of C or better is required.	4
PHY 222	Classical Physics II	5	PHYSICS 2135	Engineering Physics II	Grade of C or better is required.	4
CHM 165	General Chemistry I	4	CHEM 1310, 1319	General Chemistry I and Lab		5
EGR 160	Engineering I	3	MECH ENG 1720	Engineering Design with Computer Appl		3
ENG 105	Composition I	3	ENGLISH 1120	Exposition and Argumentation		3
ECN 120	Principles of Macroeconomics	3	ECON 1200	Principles of Macroeconomics		3
<b>Total Hours</b>		<b>38</b>	<b>Total Hours</b>			<b>37</b>

### Group 2 - Major Requirements: Take All Courses for Major of Choice

Engineering students take all Group 1 - Core Requirements (above) and Group 2 - Major Requirements for chosen major from list below. See course requirements on following pages.

**Aerospace Engineering**  
**Architectural Engineering**  
**Ceramic Engineering**  
**Chemical Engineering**  
**Chemical Engineering/Biochemistry Emphasis**  
**Civil Engineering**  
**Computer Engineering**  
**Electrical Engineering**

**Engineering Management**  
**Environmental Engineering**  
**Geological Engineering**  
**Mechanical Engineering**  
**Metallurgical Engineering**  
**Mining Engineering**  
**Nuclear Engineering**  
**Petroleum Engineering**

Engineering Major Requirements are detailed on the following pages.

**Free Electives:** Some programs allow Free Electives as indicated within each major. Free Electives should be selected in consultation with your advisor and may not include remedial/deficiency courses, algebra, trigonometry, pre-calculus, or extra credits in required courses.

**Humanities/Social Science (HSS) Electives:** HSS electives may include any history, economics, political science, sociology, psychology, philosophy, fine art, literature, or foreign language. Missouri S&T approved HSS courses are listed at [ugs.mst.edu](http://ugs.mst.edu). Your campus may have additional acceptable options. Consult with your advisor or email [transfer@mst.edu](mailto:transfer@mst.edu) with questions.

## Aerospace Engineering Group 2 Major Requirements

Eastern Iowa Community College District		Semester	Missouri S&T	
HIS 151 or	US History to 1877 or	US	HISTORY 1300 or	American History to 1877 or
HIS 152	History since 1877	3	HISTORY 1310	American History since 1877
ENG 106 or	Composition II or		ENGLISH 1160 or	Writing and Research or
SPC 112 or	Public Speaking or	3	SPMS 1185 or	Principles of Speech or
ENG 108	Composition II: Technical Writing		ENGLISH 3560	Technical Writing
EGR 285	Introduction to Electrical Science	4	EE 2800	Circuit Analysis I
EGR 180	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics
EGR 290	Thermodynamics	3	MECH ENG 2519	Thermodynamics
EGR 170	Material Science	3	CIV ENG 2210	Mechanics of Materials
	<i>See your advisor for course options.</i>			Literature Elective
	<i>See your advisor for course options.</i>			Ethics Elective
	<i>No free electives applied to the degree.</i>			Maximum Free Electives
	Group 2 Major Requirements	19		Group 2 Major Requirements
	Group 1 Core Requirements	38		Group 1 Core Requirements
	Total Hours	57		Total Hours*
				61

\*S&T advisor permission is required to transfer more than 66 credits toward the S&T Aerospace Engineering degree.

## Architectural Engineering Group 2 Major Requirements

Eastern Iowa Community College District		Semester	Missouri S&T	
HIS 151 or	US History to 1877 or	US	HISTORY 1300 or	American History to 1877 or
HIS 152	History since 1877	3	HISTORY 1310	American History since 1877
EGR 180	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics
EGR 280	Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics
EGR 170	Material Science	3	CIV ENG 2210	Mechanics of Materials
			ENGLISH 1160 or	Writing and Research or
			SPMS 1185 or	Public Speaking or
ENG 106 or	Composition II or	3	HSS Elective	Humanities/Social Science Elective: history, economics,
SPC 112	Public Speaking			political science, sociology, psychology, philosophy, fine art, literature, foreign language
	<i>No free electives applied to the degree.</i>			Maximum Free Electives
	Group 2 Major Requirements	15		Group 2 Major Requirements
	Group 1 Core Requirements	38		Group 1 Core Requirements
	Total Hours	53		Total Hours*
				52

\*S&T advisor permission is required to transfer more than 66 credits toward the S&T Architectural Engineering degree.

## Ceramic Engineering Group 2 Major Requirements

<u>Eastern Iowa Community College District</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
HIS 151 or HIS 152	US History to 1877 or History since 1877	US 3	HISTORY 1300 or HISTORY 1310	American History to 1877 or American History since 1877	3
EGR 180	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 170	Material Science	3	CIV ENG 2210	Mechanics of Materials	3
CHM 175	General Chemistry II	4	CHEM 1320	General Chemistry II	3
ENG 106 or SPC 112	Composition II or Public Speaking	3	ENGLISH 1160 or SPMS 1185 or HSS Elective	Writing and Research or Public Speaking or Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine Humanities/Social Science Elective	3
<i>See your advisor for course options.</i>			Maximum Free Electives		0
<i>No free electives applied to the degree.</i>			Group 2 Major Requirements		18
Group 2 Major Requirements			Group 1 Core Requirements		37
Group 1 Core Requirements			Total Hours*		55
Total Hours					54

\*S&T advisor permission is required to transfer more than 68 credits toward the S&T Ceramic Engineering degree.

## Chemical Engineering Group 2 Major Requirements

<u>Eastern Iowa Community College District</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENG 106 or ENG 108	Composition II or Composition II: Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIS 151 or HIS 152	US History to 1877 or History since 1877	US 3	HISTORY 1300 or HISTORY 1310	American History to 1877 or American History since 1877	3
CHM 175	General Chemistry II	4	CHEM 1320	General Chemistry II	5
<i>See your advisor for course options.</i>			Humanities/Social Science Elective		3
<i>See your advisor for course options.</i>			Humanities/Social Science Elective		3
<i>No free electives applied to the degree.</i>			Maximum Free Electives		0
Group 2 Major Requirements			Group 2 Major Requirements		17
Group 1 Core Requirements			Group 1 Core Requirements		37
Total Hours			Total Hours*		54
Total Hours					48

\*S&T advisor permission is required to transfer more than 69 credits toward the S&T Chemical Engineering degree.

## Chemical Engineering - Biochemical Engineering Emphasis Group 2 Major Requirements

<u>Eastern Iowa Community College District</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENG 106 or ENG 108	Composition II or Composition II: Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIS 151 or HIS 152	US History to 1877 or History since 1877	US 3	HISTORY 1300 or HISTORY 1310	American History to 1877 or American History since 1877	3
CHM 175	General Chemistry II	4	CHEM 1320	General Chemistry II	5
<i>See your advisor for course options.</i>			Humanities/Social Science Elective		3
<i>See your advisor for course options.</i>			Humanities/Social Science Elective		3
<i>No free electives applied to the degree.</i>			Maximum Free Electives		0
Group 2 Major Requirements			Group 2 Major Requirements		17
Group 1 Core Requirements			Group 1 Core Requirements		37
Total Hours			Total Hours*		54
Total Hours					48

\*S&T advisor permission is required to transfer more than 71 credits toward the S&T Chemical/Biochemical Engineering degree.

## Civil Engineering Group 2 Major Requirements

Eastern Iowa Community College District		Semester	Missouri S&T	
ENG 106 or SPC 112 or ENG 108 HIS 151 or HIS 152	Composition II or Public Speaking or Composition II: Technical Writing US History to 1877 or History since 1877	3   3 3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560 HISTORY 1300 or HISTORY 1310	Writing and Research or Public Speaking or Technical Writing American History to 1877 or American History since 1877
EGR 180 EGR 280 EGR 170	Statics Dynamics Material Science	3 3 3	CIV ENG 2200 MECH ENG 2350 CIV ENG 2210	Engineering Mechanics-Statics Engineering Mechanics-Dynamics Mechanics of Materials
<i>See your advisor for course options.</i>				Humanities/Social Science Elective
<i>No free electives applied to the degree.</i>				Maximum Free Electives
		15		
Group 2 Major Requirements		38	Group 2 Major Requirements	
Group 1 Core Requirements		53	Group 1 Core Requirements	
			Total Hours* 55	

\*S&T advisor permission is required to transfer more than 69 credits toward the S&T Civil Engineering degree.

## Computer Engineering Group 2 Major Requirements

Eastern Iowa Community College District		Semester	Missouri S&T	
SPC 112 ENG 106 or ENG 108 HIS 151 or HIS 152	Public Speaking Composition II or Composition II: Technical Writing US History to 1877 or History since 1877	3   3 3	SPMS 1185 ENGLISH 1160 or ENGLISH 3560 HISTORY 1300 or HISTORY 1310	Public Speaking Writing and Research or Technical Writing American History to 1877 or American History since 1877
EGR 180 and EGR 280	Statics and Dynamics	3	CIV ENG 2200 and MECH ENG 2350	Engineering Mechanics-Statics and Engineering Mechanics-Dynamics (Both courses combined will satisfy a required engineering science elective.)
EGR 285	Introduction to Electrical Science	4	EE 2100**	Circuits I **A passing grade on the Missouri S&T EE Advancement Exam I is required to receive credit for EE 2100.
<i>See your advisor for course options.</i>				Humanities/Social Science Elective
<i>See your advisor for course options.</i>				Maximum Free Electives
		16		
Group 2 Major Requirements		38	Group 2 Major Requirements	
Group 1 Core Requirements		54	Group 1 Core Requirements	
			Total Hours* 61	

\*S&T advisor permission is required to transfer more than 68 credits toward the S&T Computer Engineering degree.

## Electrical Engineering Group 2 Major Requirements

Eastern Iowa Community College District		Semester	Missouri S&T	
SPC 112 ENG 106 or ENG 108 HIS 151 or HIS 152	Public Speaking Composition II or Composition II: Technical Writing US History to 1877 or History since 1877	3   3 3	SPMS 1185 ENGLISH 1160 or ENGLISH 3560 HISTORY 1300 or HISTORY 1310	Public Speaking Writing and Research or Technical Writing American History to 1877 or American History since 1877
EGR 180 and EGR 280	Statics and Dynamics	3	CIV ENG 2200 and MECH ENG 2350	Engineering Mechanics-Statics and Engineering Mechanics-Dynamics (Both courses combined will satisfy a required engineering science elective.)
EGR 285	Introduction to Electrical Science	4	EE 2100**	Circuits I **A passing grade on the Missouri S&T EE Advancement Exam I is required to receive credit for EE 2100.
<i>See your advisor for course options.</i>				Humanities/Social Science Elective
<i>See your advisor for course options.</i>				Maximum Free Electives
		16		
Group 2 Major Requirements		38	Group 2 Major Requirements	
Group 1 Core Requirements		54	Group 1 Core Requirements	
			Total Hours* 61	

\*S&T advisor permission is required to transfer more than 68 credits toward the S&T Electrical Engineering degree.

## Engineering Management Group 2 Major Requirements

<u>Eastern Iowa Community College District</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
PSY 111	Intro to Psychology	3	PSYCH 1101	General Psychology	3
HIS 151 or	US History to 1877 or	US	HISTORY 1300 or	American History to 1877 or	
HIS 152	History since 1877	3	HISTORY 1310	American History since 1877	3
ENG 106 or	Composition II or		ENGLISH 1160 or	Writing and Research or	
SPC 112 or	Public Speaking or	3	SPMS 1185 or	Principles of Speech or	3
ENG 108	Composition II: Technical Writing		ENGLISH 3560	Technical Writing	
EGR 285	Introduction to Electrical Science	4	EE 2800	Circuit Analysis I	3
EGR 180	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 280	Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	3
EGR 170	Material Science	3	CIV ENG 2210	Mechanics of Materials	3
<i>See your advisor for course options.</i>				Humanities/Social Science Elective	3
<i>See your advisor for course options.</i>				Maximum Free Electives	3
		22			27
		38			37
Total Hours		60	Total Hours*		64

\*S&T advisor permission is required to transfer more than 68 credits toward the S&T Engineering Management degree.

## Environmental Engineering Group 2 Major Requirements

<u>Eastern Iowa Community College District</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENG 106 or	Composition II or		ENGLISH 1160 or	Writing and Research or	
SPC 112 or	Public Speaking or	3	SPMS 1185 or	Public Speaking or	3
ENG 108	Composition II: Technical Writing		ENGLISH 3560	Technical Writing	
HIS 151 or	US History to 1877 or	US	HISTORY 1300 or	American History to 1877 or	
HIS 152	History since 1877	3	HISTORY 1310	American History since 1877	3
CHM 175	General Chemistry II	4	CHEM 1320	General Chemistry II	3
BIO 114	General Biology I	4	BIO SCI 1113	General Biology	4
EGR 180	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 280	Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	3
EGR 170	Material Science	3	CIV ENG 2210	Mechanics of Materials	3
<i>See your advisor for course options.</i>				Humanities/Social Science Elective	3
<i>No free electives applied to the degree.</i>				Maximum Free Electives	0
		23			25
		38			37
Total Hours		61	Total Hours*		62

\*S&T advisor permission is required to transfer more than 68 credits toward the S&T Environmental Engineering degree.

## Geological Engineering Group 2 Major Requirements

<u>Eastern Iowa Community College District</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENG 106 or	Composition II or		ENGLISH 1160 or	Writing and Research or	
SPC 112 or	Public Speaking or	3	SPMS 1185 or	Public Speaking or	3
ENG 108	Composition II: Technical Writing		ENGLISH 3560	Technical Writing	
HIS 151 or	US History to 1877 or	US	HISTORY 1300 or	American History to 1877 or	
HIS 152	History since 1877	3	HISTORY 1310	American History since 1877	3
EGR 180	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 280	Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	3
EGR 170	Material Science	3	CIV ENG 2210	Mechanics of Materials	3
BIO 114 or	General Biology I or		BIO SCI 1113 or	General Biology or	
CHM 175	General Chemistry II	4	CHEM 1320	General Chemistry II	
<i>See your advisor for course options.</i>				<small>or any 3-hour course in chemistrv, geochemistrv, or biologv</small>	
<i>See your advisor for course options.</i>				Humanities/Social Science Elective	3
<i>No free electives applied to the degree.</i>				Humanities/Social Science Elective	3
<i>No free electives applied to the degree.</i>				Maximum Free Electives	0
		19			21
		38			37
Total Hours		57	Total Hours*		58

\*S&T advisor permission is required to transfer more than 68 credits toward the S&T Geological Engineering degree.

## Mechanical Engineering Group 2 Major Requirements

<u>Eastern Iowa Community College District</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
HIS 151 or HIS 152	US History to 1877 or History since 1877	US 3	HISTORY 1300 or HISTORY 1310	American History to 1877 or American History since 1877	3
ENG 106 or SPC 112 or ENG 108	Composition II or Public Speaking or Composition II: Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
EGR 285	Introduction to Electrical Science	4	EE 2800	Circuit Analysis I	3
EGR 180	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 290	Thermodynamics	3	MECH ENG 2519	Thermodynamics	3
EGR 170	Material Science	3	CIV ENG 2210	Mechanics of Materials	3
				Literature Elective	3
				Humanities/Social Science Elective	3
				Maximum Free Electives	0
				Group 2 Major Requirements	18
				Group 1 Core Requirements	37
Total Hours			51	Total Hours*	55

*See your advisor for course options.*  
*No free electives applied to the degree.*

\*S&T advisor permission is required to transfer more than 68 credits toward the S&T Mechanical Engineering degree.

## Metallurgical Engineering Group 2 Major Requirements

<u>Eastern Iowa Community College District</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENG 106 or SPC 112 or ENG 108	Composition II or Public Speaking or Composition II: Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Public Speaking or Technical Writing	3
HIS 151 or HIS 152	US History to 1877 or History since 1877	US 3	HISTORY 1300 or HISTORY 1310	American History to 1877 or American History since 1877	3
EGR 180	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 170	Material Science	3	CIV ENG 2210	Mechanics of Materials	3
CHM 175	General Chemistry II	4	CHEM 1320	General Chemistry II	3
EGR 285	Introduction to Electrical Science	4	EE 2800	Electrical Circuits	3
				<i>Not specifically required for the degree but will satisfy Out-of-Department Technical Elective Requirement</i>	3
				Humanities/Social Science Elective	3
				Humanities/Social Science Elective	3
				Maximum Free Electives	5
				Group 2 Major Requirements	29
				Group 1 Core Requirements	37
Total Hours			58	Total Hours*	66

\*S&T advisor permission is required to transfer more than 68 credits toward the S&T Metallurgical Engineering degree.

## Mining Engineering Group 2 Major Requirements

<u>Eastern Iowa Community College District</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENG 106 or ENG 108	Composition II or Composition II: Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIS 151 or HIS 152	US History to 1877 or History since 1877	3	HISTORY 1300 or HISTORY 1310	American History to 1877 or American History since 1877	3
EGR 180	Statics	3	CIV ENG 2200*	Engineering Mechanics-Statics	3
EGR 280	Dynamics	3	MECH ENG 2350*	Engineering Mechanics-Dynamics	3
EGR 170	Material Science	3	CIV ENG 2210*	Mechanics of Materials	3
			*The combination of CIV ENG 2200 and MECH ENG 2350 will be substituted for MECH ENG 2340. The Combination of CIV ENG 22000 and 2210 and MECH ENG 2350 will be substituted for MI ENG 3812		
			Humanities/Social Science Elective		3
			Humanities/Social Science Elective		3
			Maximum Free Electives		0
		15	Group 2 Major Requirements		21
		38	Group 1 Core Requirements		37
Total Hours		53	Total Hours*		58

\*S&T advisor permission is required to transfer more than 68 credits toward the S&T Mining Engineering degree.

## Nuclear Engineering Group 2 Major Requirements

<u>Eastern Iowa Community College District</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENG 106 or ENG 108	Composition II or Composition II: Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIS 151 or HIS 152	US History to 1877 or History since 1877	3	HISTORY 1300 or HISTORY 1310	American History to 1877 or American History since 1877	3
EGR 180	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 170	Material Science	3	CIV ENG 2210	Mechanics of Materials	3
			Humanities/Social Science Elective		3
			Humanities/Social Science Elective		3
			Maximum Free Electives		6
		12	Group 2 Major Requirements		24
		38	Group 1 Core Requirements		37
Total Hours		50	Total Hours*		61

\*S&T advisor permission is required to transfer more than 68 credits toward the S&T Nuclear Engineering degree.

## Petroleum Engineering Group 2 Major Requirements

<u>Eastern Iowa Community College District</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENG 106 or ENG 108	Composition II or Composition II: Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIS 151 or HIS 152	US History to 1877 or History since 1877	3	HISTORY 1300 or HISTORY 1310	American History to 1877 or American History since 1877	3
EGR 180	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 280	Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	3
EGR 170	Material Science	3	CIV ENG 2210	Mechanics of Materials	3
			Humanities/Social Science Elective		3
			Humanities/Social Science Elective		3
			Maximum Free Electives		0
		9	Group 2 Major Requirements		15
		38	Group 1 Core Requirements		37
Total Hours		47	Total Hours*		52

\*S&T advisor permission is required to transfer more than 68 credits toward the S&T Petroleum Engineering degree.