

# Illinois Central College — 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>Illinois Central College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
MATH 222	Calculus and Analytical Geometry I	5	MATH 1214	Calculus for Engineers I	Grade of C or better is required. 4
MATH 223	Calculus and Analytical Geometry II	4	MATH 1215	Calculus for Engineers II	Grade of C or better is required. 4
MATH 224	Calculus and Analytical Geometry III	4	MATH 2222	Calculus with Analytic Geometry III	Grade of C or better is required. 4
MATH 250	Differential Equations	3	MATH 3304	Elementary Differential Equations	3
PHYS 211 and	Engineering Physics: Mechanics and	4			
PHYS 212 and	Engineering Physics: Electricity and Magnetism	4			
PHYS 213***	and Engineering Physics: Thermodynamics	2	PHYSICS 1135 and		8
CHEM 130	General Chemistry	4	PHYSICS 2135	Engineering Physics I & II	Grade of C or better is required. 5
ENGR 110 and	Intro to Engineering and	1	CHEM 1310, 1319	General Chemistry I and Lab	
ENGR 113****	Engineering Graphics	3	FR ENG 1100 and	Study and Careers in Engineering and	4
ENGL 110	Composition I	3	MECH ENG 1720	Design with Computer Application	
ECON 111 or	Principles of Microeconomics or	3	ENGLISH 1120	Exposition and Argumentation	3
ECON 110	Principles of Macroeconomics		ECON 1100 or	Principles of Microeconomics or	
			ECON 1200	Principles of Macroeconomics	3

\*\*\*The combination of ICC PHYS 211, 212, and 213 is equivalent to Missouri S&T PHYSICS 1135 and 2135.  
 combination of ICC ENGR 110 and ENGR 113 is equivalent to Missouri S&T FR ENG 1100 and MECH ENG 1720

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Total Hours 26

Total Hours 38

### 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

<u>Illinois Central College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>	
HIST 201 or HIST 202 or HIST 118 or POLSC 115 ENGL 111 or COMM 110 or GENTK 201	American History to 1877 or American History Since 1877 or Modern Western Civilization or American National Government Composition II or Communication: Process and Practice or Technical Writing	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200 ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	American History to 1877 or American History since 1877 or Modern Western Civilization or American Government Writing and Research or Principles of Speech or Technical Writing
ENGR 230 or CMPSC 125 or CMPSC 232 ENGR 240 ENGR 251 ENGR 253 MATH 230	Programming Engineering Applications or Computer Science I: Programming in C++ or Object Oriented Programming in C++ Engineering Circuit Analysis Statics Mechanics of Materials Linear Algebra	3 3 4 4 3 3 3	CS 1971, 1981 or CS 1971, 1981 or CS 1570 EE 2800 CIV ENG 2200 CIV ENG 2210 MATH 3108	Intro to Programming Method and Lab (C++) or Programming Method and Lab (C++) or Intro to Programming (C++) Circuit Analysis I Engineering Mechanics-Statics Mechanics of Materials Linear Algebra I (Will satisfy the Advanced Math/Comp Sci elective requirement.)
<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		26	Group 1 Core Requirements	
Total Hours		45	Total Hours*	
			65	

\*S&T advisor permission is required to transfer more than 65 credits toward the S&T Aerospace Engineering degree.

## Architectural Engineering Group 2 Major Requirements

<u>Illinois Central College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>	
HIST 118 or HIST 201 or HIST 202	Modern Western Civilization or American History to 1877 or American History Since 1877	3	HISTORY 1200* (or HISTORY 1300 or HISTORY 1310)	Modern Western Civilization* (or American History to 1877 or American History since 1877) <small>*HISTORY 1200 is preferred; 1300 or 1310 will also be accepted.</small>
ENGR 251 ENGR 252 ENGR 253	Statics Dynamics Mechanics of Materials	3 3 3	CIV ENG 2200 MECH ENG 2350 CIV ENG 2210	Engineering Mechanics-Statics Engineering Mechanics-Dynamics Mechanics of Materials
ARCTK 114	Surveying	2	CIV ENG 2401	Fundamentals of Surveying
ENGL 111 or COMM 110	Composition II or Communication: Process and Practice	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 art, literature, foreign language
EASC 116 or PHYSC 114	Intro to Geology or to Astronomy	Intro 4	GEOLOGY 1111 or PHYSICS 1505	Intro to Physical Geology or Introductory Astronomy (or other chemistry, geology, biology, physics, or astronomy course that is not otherwise required for the degree)
<i>No free electives applied to the degree.</i>				Applies to the degree as a basic science elective
Group 2 Major Requirements		21	Maximum Free Electives	
Group 1 Core Requirements		26	Group 2 Major Requirements	
Total Hours		47	Group 1 Core Requirements	
			Total Hours*	
			59	

\*S&T advisor permission is required to transfer more than 65 credits toward the S&T Architectural Engineering degree.

## Ceramic Engineering Group 2 Major Requirements

<u>Illinois Central College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>	
HIST 201 or HIST 202 or HIST 118 or POLSC 115	American History to 1877 or American History Since 1877 or Modern Western Civilization or American National Government	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200	American History to 1877 or American History since 1877 or Modern Western Civilization or American Government
ENGR 251	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics
ENGR 253	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials
CHEM 220	Organic Chemistry	5	CHEM 2210/2219	Organic Chemistry I and Lab (Not a specific requirement. Will satisfy technical elective requirement.)
CHEM 132	General Chemistry	4	CHEM 1320	General Chemistry II
ENGL 111 or COMM 110	Composition II or Communication: Process and Practice	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
<i>See your advisor for course options.</i>			Humanities/Social Science Elective	
<i>No free electives applied to the degree.</i>			Maximum Free Electives	
Group 2 Major Requirements		21	Group 2 Major Requirements	
Group 1 Core Requirements		26	Group 1 Core Requirements	
Total Hours		47	Total Hours*	
			61	

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

## Chemical Engineering Group 2 Major Requirements

<u>Illinois Central College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>	
ENGL 111 or GENTK 201	Composition II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing
HIST 201 or HIST 202 or HIST 118 or POLSC 115	American History to 1877 or American History Since 1877 or Modern Western Civilization or American National Government	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200	American History to 1877 or American History since 1877 or Modern Western Civilization or American Government
CHEM 132	General Chemistry	4	CHEM 1320	General Chemistry II
CHEM 220	Organic Chemistry	5	CHEM 2210	Organic Chemistry I
CHEM 230	Organic Chemistry	4	CHEM 2220	Organic Chemistry II (Will satisfy science elective requirement.)
ENGR 230 or CMPSC 125 or CMPSC 232	Programming Engineering Applications or Computer Science I: Programming in C++ or Object Oriented Programming in C++	3 4	CS 1971, 1981 or CS 1971, 1981 or CS 1570	Intro to Programming Method and Lab (C++) or Intro to Programming Method and Lab (C++) or Intro to Programming (C++)
<i>See your advisor for course options.</i>			Humanities/Social Science Elective	
<i>See your advisor for course options.</i>			Humanities/Social Science 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		26	Group 1 Core Requirements	
Total Hours		45	Total Hours*	
			64	

\*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>Illinois Central College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>	
ENGL 111 or GENTK 201	Composition II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing
HIST 201 or HIST 202 or HIST 118 or POLSC 115	American History to 1877 or American History Since 1877 or Modern Western Civilization or American National Government	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200	American History to 1877 or American History since 1877 or Modern Western Civilization or American Government
CHEM 132	General Chemistry	4	CHEM 1320	General Chemistry II
CHEM 220	Organic Chemistry	5	CHEM 2210	Organic Chemistry I
CHEM 230	Organic Chemistry	4	CHEM 2220	Organic Chemistry II (Will satisfy science elective requirement.)
ENGR 230 or CMPSC 125 or CMPSC 232	Programming Engineering Applications or Computer Science I: Programming in C++ or Object Oriented Programming in C++	3 4	CS 1971, 1981 or CS 1971, 1981 or CS 1570	Intro to Programming Method and Lab (C++) or Intro to Programming Method and Lab (C++) or Intro to Programming (C++)
<i>See your advisor for course options.</i>			Humanities/Social Science Elective	
<i>See your advisor for course options.</i>			Humanities/Social Science 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		26	Group 1 Core Requirements	
Total Hours		45	Total Hours*	
			64	

\*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

<u>Illinois Central College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>	
ENGL 111 or COMM 110 or GENTK 201	Composition II or Communication: Process and Practice or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Public Speaking or Technical Writing
HIST 201 or HIST 202 or HIST 118 or POLSC 115	American History to 1877 or American History Since 1877 or Modern Western Civilization or American National Government	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200	American History to 1877 or American History since 1877 or Modern Western Civilization or American Government
EASC 116	Intro to Geology	4	GEO 1110/GE 1150	Intro to Physical Geology
ENGR 251	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics
ENGR 252	Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics
ENGR 253	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials
ARCTK 114	Surveying	2	CIV ENG 2401	Fundamentals of Surveying
<i>See your advisor for course options.</i>				Humanities/Social Science Elective
<i>No free electives applied to the degree.</i>				Maximum Free Electives
Group 2 Major Requirements		21	Group 2 Major Requirements	
Group 1 Core Requirements		26	Group 1 Core Requirements	
Total Hours		47	Total Hours*	
			62	

\*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

<u>Illinois Central College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>	
COMM 110	Communication: Process and Practice	3	SPMS 1185	Public Speaking
ENGL 111 or GENTK 201	Composition II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing
HIST 201 or HIST 202 or HIST 118 or POLSC 115	American History to 1877 or American History Since 1877 or Modern Western Civilization or American National Government	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200	American History to 1877 or American History since 1877 or Modern Western Civilization or American Government
MATH 122	Discrete Mathematics	3	CS 1200	Discrete Math for Computer Science
CMPCSC 232	Object Oriented Programming in C++	3	CS 1570	Intro to Programming (C++)
CMPCSC 212	Computer Science II: Data Structures	3	CS 1575	Data Structures
ENGR 251 and ENGR 252	Statics and Dynamics	3	CIV ENG 2200 and MECH ENG 2350	Engineering Mechanics-Statics and Engineering Mechanics-Dynamics <small>(Both courses combined will satisfy a required engineering science elective.)</small>
ENGR 240	Engineering Circuit Analysis	4	EE 2100**	Circuits I <small>**A passing grade on the Missouri S&amp;T EE Advancement Exam I is required to receive credit for EE 2100.</small>
MATH 230	Linear Algebra	3	MATH 3108	Linear Algebra <small>(Will satisfy a required math elective.)</small>
<i>See your advisor for course options.</i>				Humanities/Social Science Elective
<i>See your advisor for course options.</i>				Maximum Free Electives
Group 2 Major Requirements		28	Group 2 Major Requirements	
Group 1 Core Requirements		26	Group 1 Core Requirements	
Total Hours		54	Total Hours*	
			75	

\*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

<u>Illinois Central College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>	
COMM 110	Communication: Process and Practice	3	SPMS 1185	Public Speaking
ENGL 111 or GENTK 201	Composition II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing
HIST 201 or HIST 202 or HIST 118 or POLSC 115	American History to 1877 or American History Since 1877 or Modern Western Civilization or American National Government	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200	American History to 1877 or American History since 1877 or Modern Western Civilization or American Government
CMPCSC 232	Object Oriented Programming in C++	3	CS 1570	Intro to Programming (C++)
ENGR 251 and ENGR 252	Statics and Dynamics	3	CIV ENG 2200 and MECH ENG 2350	Engineering Mechanics-Statics and Engineering Mechanics-Dynamics <small>(Both courses combined will satisfy a required engineering science elective.)</small>
ENGR 240	Engineering Circuit Analysis	4	EE 2100**	Circuits I <small>**A passing grade on the Missouri S&amp;T EE Advancement Exam I is required to receive credit for EE 2100.</small>
MATH 230	Linear Algebra	3	MATH 3108	Linear Algebra
<i>See your advisor for course options.</i>				Humanities/Social Science Elective
<i>See your advisor for course options.</i>				Maximum Free Electives
Group 2 Major Requirements		22	Group 2 Major Requirements	
Group 1 Core Requirements		26	Group 1 Core Requirements	
Total Hours		48	Total Hours*	
			69	

\*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>Illinois Central College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
PSY 110	Intro to Psychology	3	PSYCH 1101	General Psychology	3
HIST 201 or	American History to 1877 or		HISTORY 1300 or	American History to 1877 or	
HIST 202 or	American History Since 1877 or	3	HISTORY 1310 or	American History since 1877 or	3
HIST 118 or	Modern Western Civilization or		HISTORY 1200 or	Modern Western Civilization or	
POLSC 115	American National Government		POL SCI 1200	American Government	
ENGL 111 or	Composition II or		ENGLISH 1160 or	Writing and Research or	
COMM 110 or	Communication: Process and Practice or	3	SPMS 1185 or	Principles of Speech or	3
GENTK 201	Technical Writing		ENGLISH 3560	Technical Writing	
ENGR 240	Engineering Circuit Analysis	4	EE 2800	Circuit Analysis I	3
ENGR 251	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
ENGR 252	Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	3
ENGR 253	Mechanics of Materials	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
Group 2 Major Requirements		22	Group 2 Major Requirements		27
Group 1 Core Requirements		26	Group 1 Core Requirements		38
Total Hours		48	Total Hours*		65

\*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>Illinois Central College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENGL 111 or	Composition II or		ENGLISH 1160 or	Writing and Research or	
COMM 110 or	Communication: Process and Practice or	3	SPMS 1185 or	Public Speaking or	3
GENTK 201	Technical Writing		ENGLISH 3560	Technical Writing	
HIST 201 or	American History to 1877 or		HISTORY 1300 or	American History to 1877 (preferred) or	
HIST 202 or	American History Since 1877 or	3	HISTORY 1310 or	American History since 1877 (preferred) or	3
HIST 118	Modern Western Civilization		HISTORY 1200	Modern Western Civilization	
EASC 116	Intro to Geology	4	GEO 1110/GE 1150	Intro to Physical Geology	3
CHEM 132	General Chemistry	4	CHEM 1320	General Chemistry II	3
BIOL 110	Life Science	4	BIO SCI 1113	General Biology	4
ENGR 251	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
ENGR 252	Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	3
ENGR 253	Mechanics of Materials	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
Group 2 Major Requirements		27	Group 2 Major Requirements		28
Group 1 Core Requirements		26	Group 1 Core Requirements		38
Total Hours		53	Total Hours*		66

\*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>Illinois Central College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENGL 111 or	Composition II or		ENGLISH 1160 or	Writing and Research or	
COMM 110 or	Communication: Process and Practice or	3	SPMS 1185 or	Public Speaking or	3
GENTK 201	Technical Writing		ENGLISH 3560	Technical Writing	
HIST 201 or	American History to 1877 or		HISTORY 1300 or	American History to 1877 or	
HIST 202 or	American History Since 1877 or	3	HISTORY 1310 or	American History since 1877 or	3
HIST 118 or	Modern Western Civilization or		HISTORY 1200 or	Modern Western Civilization or	
POLSC 115	American National Government		POL SCI 1200	American Government	
EASC 116	Intro to Geology	4	GEO 1110/GE 1150	Physical and Environmental Geology	3
ENGR 251	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
ENGR 252	Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	3
BIOL 110 or	Life Science or		BIO SCI 1113 or	General Biology or	
CHEM 132 or	General Chemistry II or	4	CHEM 1320 or	General Chemistry II or	
CHEM 220	Organic Chemistry I		CHEM 2210	Organic Chemistry I	
<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		20	Group 2 Major Requirements		21
Group 1 Core Requirements		26	Group 1 Core Requirements		38
Total Hours		46	Total Hours*		59

\*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>Illinois Central College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
HIST 201 or HIST 202 or HIST 118 or POLSC 115 ENGL 111 or COMM 110 or GENTK 201 ENGR 230 or CMPSC 125 or CMPSC 232 ENGR 240 ENGR 251 ENGR 253 MATH 230	American History to 1877 or American History Since 1877 or Modern Western Civilization or American National Government Composition II or Communication: Process and Practice or Technical Writing Programming Engineering Applications or Computer Science I: Programming in C++ or Object Oriented Programming in C++ Engineering Circuit Analysis Statics Mechanics of Materials Linear Algebra	3     3  3 4 4 3 3 3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200 ENGLISH 1160 or SPMS 1185 or ENGLISH 3560 CS 1971, 1981 or CS 1971, 1981 or CS 1570 EE 2800 CIV ENG 2200 CIV ENG 2210 MATH 3108	American History to 1877 or American History since 1877 or Modern Western Civilization or American Government Writing and Research or Principles of Speech or Technical Writing Intro to Programming Method and Lab (C++) or Programming Method and Lab (C++) or Intro to Programming (C++) Circuit Analysis I Engineering Mechanics-Statics Mechanics of Materials Linear Algebra I (Will satisfy the Advanced Math/Comp Sci elective requirement.) Literature Elective Humanities/Social Science Elective Maximum Free Electives	3     3  3 3 4 3 3 3 3 3 3 3 3 3 3 3 0
<i>See your advisor for course options.</i>					
<i>No free electives applied to the degree.</i>					
Group 2 Major Requirements		13	Group 2 Major Requirements		18
Group 1 Core Requirements		26	Group 1 Core Requirements		38
Total Hours		39	Total Hours*		56

\*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>Illinois Central College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENGL 111 or COMM 110 or GENTK 201 HIST 201 or HIST 202 or HIST 118 or POLSC 115 ENGR 251 ENGR 253 CHEM 132 CHEM 220 or ENGR 240	Composition II or Communication: Process and Practice or Technical Writing American History to 1877 or American History Since 1877 or Modern Western Civilization or American National Government Statics Mechanics of Materials General Chemistry Organic Chemistry I or Engineering Circuit Analysis	3    3  3 3 3 4 4	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560 HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200 CIV ENG 2200 CIV ENG 2210 CHEM 1320 CHEM 2210 or EE 2800	Writing and Research or Public Speaking or Technical Writing American History to 1877 or American History since 1877 or Modern Western Civilization or American Government Engineering Mechanics-Statics Mechanics of Materials General Chemistry II Organic Chemistry I or Electrical Circuits <i>Not specifically required for the degree but will satisfy Out-of-Department Technical Elective Requirement</i> Humanities/Social Science Elective Humanities/Social Science Elective Maximum Free Electives	3    3  3 3 3 3 3 3 3 3 3 3 3 3 3 3 5
<i>See your advisor for course options.</i>					
<i>See your advisor for course options.</i>					
<i>See your advisor for course options.</i>					
Group 2 Major Requirements		20	Group 2 Major Requirements		29
Group 1 Core Requirements		26	Group 1 Core Requirements		38
Total Hours		46	Total Hours*		67

\*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>Illinois Central College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENGL 111 or GENTK 201	Composition II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIST 201 or HIST 202 or HIST 118 or POLSC 115	American History to 1877 or American History Since 1877 or Modern Western Civilization or American National Government	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200	American History to 1877 or American History since 1877 or Modern Western Civilization or American Government	3
ENGR 251	Statics	3	CIV ENG 2200*	Engineering Mechanics-Statics	3
ENGR 252	Dynamics	3	MECH ENG 2350*	Engineering Mechanics-Dynamics	3
ENGR 253	Mechanics of Materials	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		
EASC 116	Intro to Geology <i>See your advisor for course options.</i>	4	GEO 1110/GE 1150	Intro to Physical Geology	3
	<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
				Maximum Free Electives	0
	Group 2 Major Requirements	19		Group 2 Major Requirements	24
	Group 1 Core Requirements	26		Group 1 Core Requirements	38
	Total Hours	45		Total Hours*	62

\*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>Illinois Central College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENGL 111 or GENTK 201	Composition II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIST 201 or HIST 202 or HIST 118 or POLSC 115	American History to 1877 or American History Since 1877 or Modern Western Civilization or American National Government	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200	American History to 1877 or American History since 1877 or Modern Western Civilization or American Government	3
ENGR 230 or CMPSC 125 or CMPSC 232	Programming Engineering Applications or Computer Science I: Programming in C++ or Object Oriented Programming in C++	3	CS 1971, 1981 or CS 1971, 1981 or CS 1570	Intro to Programming Method and Lab (C++) or Programming Method and Lab (C++) or to Programming (C++)	3 3 4
ENGR 251	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
ENGR 253	Mechanics of Materials	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>			Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>			Maximum Free Electives	6
	Group 2 Major Requirements	12		Group 2 Major Requirements	24
	Group 1 Core Requirements	26		Group 1 Core Requirements	38
	Total Hours	38		Total Hours*	62

\*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>Illinois Central College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENGL 111 or GENTK 201	Composition II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIST 201 or HIST 202 or HIST 118 or POLSC 115	American History to 1877 or American History Since 1877 or Modern Western Civilization or American National Government	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200	American History to 1877 or American History since 1877 or Modern Western Civilization or American Government	3
EASC 116	Intro to Geology	4	GEO 1110/GE 1150	Physical and Environmental Geology	3
ENGR 251	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
ENGR 252	Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	3
ENGR 253	Mechanics of Materials	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>			Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>			Maximum Free Electives	0
	Group 2 Major Requirements	13		Group 2 Major Requirements	18
	Group 1 Core Requirements	26		Group 1 Core Requirements	38
	Total Hours	39		Total Hours*	56

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