

# Joliet Junior College — Missouri S&T

## General Engineering Transfer Guide

Effective as of Fall 2023

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>Joliet Junior College</u>			<u>Semester</u>	<u>Missouri S&amp;T</u>				
MATH 170	Calculus with Analytic Geometry I	5		MATH 1214	Calculus I	4		
MATH 171	Calculus with Analytic Geometry II	4		MATH 1215	Calculus II	4		
MATH 172	Calculus with Analytic Geometry III	4		MATH 2222	Calculus III	4		
MATH 220	Differential Equations and Orthogonal Functions	3		MATH 3304	Elementary Differential Equations	3		
PHYS 201	Engineering Physics I	5		PHYSICS 1135	Engineering Physics I	4		
PHYS 202	Engineering Physics II	5		PHYSICS 2135	Engineering Physics II	4		
CHEM 101	General Chemistry	5		CHEM 1310, 1319	General Chemistry I and Lab	5		
EGR 105	Intro to Engineering	2		FR ENG 1100	Study and Careers in Engineering and Computing	1		
ENG 101	Rhetoric	3		ENGLISH 1120	Exposition and Argumentation	3		
ECON 104 or ECON 103	Principles of Economics II (Microeconomics) or Principles of Economics I (Macroeconomics)	3		ECON 1100 or ECON 1200	Principles of Microeconomics or Principles of Macroeconomics	3		
Total Hours			39				Total Hours	35

### 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 art, English and technical communication, etymology, foreign language, music, philosophy, speech and media studies, or theatre. Your campus may have additional acceptable options. Consult with your advisor or email [transfer@mst.edu](mailto:transfer@mst.edu) with questions. See Missouri S&T online catalog at <https://catalog.mst.edu/undergraduate/degreeprogramsandcourses/> for more information.

## Aerospace Engineering Group 2 Major Requirements

<u>Joliet Junior College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>	
HIST 103 or HIST 104 or HIST 106 or PSCI 101	History of the US to 1865 or History of the US, 1865 to Present or History of Civilization II or American National Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government
ENG 102 or COMM 101 or ENG 130	Rhetoric or Principles of Communication or Technical Writing and Communication	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing
EGR 220	Electrical Circuit Analysis	4	EE 2800	Electrical Circuits
EGR 201	Analytical Mechanics - Statics	3	CIV ENG 2200	Engineering Mechanics - Statics
EGR 203	Mechanics: Strength of Materials	3	CIV ENG 2210	Mechanics of Materials
MATH 210	Linear Algebra	3	MATH 3108	Linear Algebra I <small>(Will satisfy the Advanced Math/Comp Sci elective requirement.)</small>
	Literature Elective	3		Literature Elective
	Ethics Elective	3		Ethics Elective <small>Engineering, business, bio, social or other ethics approved by advisor.</small>
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives
	Group 2 Major Requirements	25		Group 2 Major Requirements
	Group 1 Core Requirements	39		Group 1 Core Requirements
	Total Hours	64		Total Hours*
				59

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

## Architectural Engineering Group 2 Major Requirements

<u>Joliet Junior College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>	
HIST 106 (or HIST 103 or HIST 104)	History of Civilization II (History of the US to 1865 or History of the US, 1865 to Present)	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>
EGR 201	Analytical Mechanics - Statics	3	CIV ENG 2200	Engineering Mechanics - Statics
EGR 202	Analytical Mechanics - Dynamics	3	MECH ENG 2350	Engineering Mechanics - Dynamics
EGR 203	Mechanics: Strength of Materials	3	CIV ENG 2210	Mechanics of Materials
HSS Elective	Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language	3	HSS Elective	Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language
GEOL 101	Principles of Physical Geology	4	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives
	Group 2 Major Requirements	19		Group 2 Major Requirements
	Group 1 Core Requirements	39		Group 1 Core Requirements
	Total Hours	58		Total Hours*
				52

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

## Ceramic Engineering Group 2 Major Requirements

<u>Joliet Junior College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>	
HIST 103 or HIST 104 or HIST 106 or PSCI 101	History of the US to 1865 or History of the US, 1865 to Present or History of Civilization II or American National Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government
EGR 201	Analytical Mechanics - Statics	3	CIV ENG 2200	Engineering Mechanics - Statics
EGR 203	Mechanics: Strength of Materials	3	CIV ENG 2210	Mechanics of Materials
CHEM 209	Organic Chemistry I	5	CHEM 2210	Organic Chemistry I <small>(Will satisfy the advanced chemistry elective requirement.)</small>
CHEM 102	General Chemistry II	5	CHEM 1320	General Chemistry II
PHYS 203	Engineering Physics III	3	PHYS 2305	Intro to Modern Physics
ENG 102 or COMM 101 or HSS Elective	Rhetoric or Principles of Communication or Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language	3	ENGLISH 1160 or SPMS 1185 or HSS Elective	Writing and Research or Principles of Speech or Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language
	Humanities/Social Science Elective	3		Humanities/Social Science Elective
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives
	Group 2 Major Requirements	28		Group 2 Major Requirements
	Group 1 Core Requirements	39		Group 1 Core Requirements
	Total Hours	67		Total Hours*
				59

\*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>Joliet Junior College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>	
ENG 130	Technical Writing and Communication	3	ENGLISH 3560	Technical Writing
HIST 103 or HIST 104 or HIST 106 or PSCI 101	History of the US to 1865 or History of the US, 1865 to Present or History of Civilization II or American National Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government
CHEM 102	General Chemistry II	5	CHEM 1320	General Chemistry II
CHEM 209	Organic Chemistry I	5	CHEM 2210, 2219*	Organic Chemistry I and Lab* <small>*The lab is not required for the degree, will transfer as 1 of the 9 science elective credits (below).</small>
CHEM 210	Organic Chemistry II or		CHEM 2220	Organic Chemistry II <small>Will satisfy science elective requirement. Select up to 9 hours from these options or CHEM 2219 Organic Chemistry Lab.</small>
CIS 246	Advanced C Using C++	4	CS 1500	Computational Problem Solving
COMM 101	Principles of Communication	3	SP&MS 1185	Principles of Speech
	Humanities/Social Science Elective	3		Humanities/Social Science Elective
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives
	Group 2 Major Requirements	26		Group 2 Major Requirements
	Group 1 Core Requirements	39		Group 1 Core Requirements
	Total Hours	65		Total Hours*
				65

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

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

<u>Joliet Junior College</u>			<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENG 130	Technical Writing and Communication	3		ENGLISH 3560	Technical Writing	3
HIST 103 or HIST 104 or HIST 106 or PSCI 101	History of the US to 1865 or History of the US, 1865 to Present or History of Civilization II 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
CHEM 102	General Chemistry II	5		CHEM 1320	General Chemistry II	3
CHEM 209	Organic Chemistry I	5		CHEM 2210, 2219*	Organic Chemistry I and Lab* <small>*The lab is not required for the degree, will transfer as 1 of the 9 science elective credits (below).</small>	4
CHEM 210	Organic Chemistry II or	5		CHEM 2220	Organic Chemistry II <small>Will satisfy science elective requirement. Select up to 9 hours from these options or CHEM 2219 Organic Chemistry Lab.</small>	3
CIS 246	Advanced C Using C++	4		CS 1500	Computational Problem Solving	3
COMM 101	Principles of Communication	3		SP&MS 1185	Principles of Speech	3
	Humanities/Social Science Elective	3			Humanities/Social Science Elective	3
	Group 2 Major Requirements	31			Group 2 Major Requirements	25
	Group 1 Core Requirements	39			Group 1 Core Requirements	35
	Total Hours	70			Total Hours*	60

\*S&T advisor permission is required to transfer more than 70 credits toward the S&T Chemical/Biochemical Engineering degree.

## Civil Engineering Group 2 Major Requirements

<u>Joliet Junior College</u>			<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENG 102 or COMM 101 or ENG 130	Rhetoric or Principles of Communication or Technical Writing and Communication	3		ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
HIST 103 or HIST 104 or HIST 106 or PSCI 101	History of the US to 1865 or History of the US, 1865 to Present or History of Civilization II or American National Government	3		HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
GEOLOG 101	Principles of Physical Geology	4		GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
EGR 201	Analytical Mechanics - Statics	3		CIV ENG 2200	Engineering Mechanics - Statics	3
EGR 202	Analytical Mechanics - Dynamics	3		MECH ENG 2350	Engineering Mechanics - Dynamics	2
EGR 203	Mechanics: Strength of Materials	3		CIV ENG 2210	Mechanics of Materials	3
	Humanities/Social Science Elective	3			Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0			Maximum Free Electives	0
	Group 2 Major Requirements	22			Group 2 Major Requirements	20
	Group 1 Core Requirements	39			Group 1 Core Requirements	35
	Total Hours	61			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

<u>Joliet Junior College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
COMM 101	Principles of Communication	3	SPMS 1185	Principles of Speech	3
ENG 102 or ENG 130	Rhetoric or Technical Writing and Communication	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIST 103 or HIST 104 or HIST 106 or PSCI 101	History of the US to 1865 or History of the US, 1865 to Present or History of Civilization II or American National Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
CIS 246	Advanced C Using C++	4	CS 1500	Computational Problem Solving	3
EGR 201 or EGR 202 or CHEM 209	Analytical Mechanics-Statics (3) or Analytical Mechanics-Dynamics (3) or Organic Chemistry I (5)	3	CIV ENG 2200 or MECH ENG 2350 or CHEM 2210	Engineering Mechanics-Statics (3) or Engineering Mechanics-Dynamics (3) or Organic Chemistry I (4)	3
EGR 220	Electrical Circuit Analysis	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.	3
MATH 210	Linear Algebra	3	MATH 3108	Linear Algebra (Will satisfy a required math elective.)	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	Maximum Free Electives	3		Maximum Free Electives	3
	Group 2 Major Requirements	29		Group 2 Major Requirements	27
	Group 1 Core Requirements	39		Group 1 Core Requirements	35
	Total Hours	68		Total Hours*	62

\*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>Joliet Junior College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
COMM 101	Principles of Communication	3	SPMS 1185	Principles of Speech	3
ENG 102 or ENG 130	Rhetoric or Technical Writing and Communication	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIST 103 or HIST 104 or HIST 106 or PSCI 101	History of the US to 1865 or History of the US, 1865 to Present or History of Civilization II or American National Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
CIS 246	Advanced C Using C++	4	CS 1500	Computational Problem Solving	3
EGR 201 and EGR 202 (BOTH of the courses above or ONE of the courses below.)	Analytical Mechanics-Statics (3) and Analytical Mechanics-Dynamics (3) (Both courses above combined or any one of the following courses will satisfy a required engineering science elective.)	3	CIV ENG 2200 and MECH ENG 2350 (BOTH of the courses above or ONE of the courses below.)	Engineering Mechanics-Statics (3) and Engineering Mechanics-Dynamics (3) (Both courses above combined or any one of the following courses will satisfy a required engineering science elective.)	3
OR CHEM 209	OR Organic Chemistry I (5)		OR CHEM 2210	OR Organic Chemistry I (4)	
EGR 220	Electrical Circuit Analysis	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.	3
MATH 210	Linear Algebra	3	MATH 3108	Linear Algebra	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	Maximum Free Electives	3		Maximum Free Electives	3
	Group 2 Major Requirements	29		Group 2 Major Requirements	27
	Group 1 Core Requirements	39		Group 1 Core Requirements	35
	Total Hours	68		Total Hours*	62

\*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>Joliet Junior College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
PSYC 101	General Psychology	3	PSYCH 1101	General Psychology	3
HIST 103 or HIST 104 or HIST 106 or	History of the US to 1865 or History of the US, 1865 to Present or History of Civilization II or	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or	Modern Western Civilization or American History to 1877 or American History since 1877 or	3
PSCI 101	American National Government		POL SCI 1200	American Government	
COMM 101	Principles of Communication	3	SPMS 1185	Principles of Speech	3
ENG 102 or ENG 130	Rhetoric or Technical Writing and Communication	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
EGR 220	Electrical Circuit Analysis	4	EE 2800	Electrical Circuits	3
EGR 201	Analytical Mechanics - Statics	3	CIV ENG 2200	Engineering Mechanics - Statics	3
EGR 202	Analytical Mechanics - Dynamics	3	MECH ENG 2350	Engineering Mechanics - Dynamics	2
EGR 203	Mechanics: Strength of Materials	3	CIV ENG 2210	Mechanics of Materials	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	Maximum Free Electives	3		Maximum Free Electives	3
	Group 2 Major Requirements	31		Group 2 Major Requirements	29
	Group 1 Core Requirements	39		Group 1 Core Requirements	35
	Total Hours	70		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>Joliet Junior College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENG 102 or COMM 101 or ENG 130	Rhetoric or Principles of Communication or Technical Writing and Communication	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
HIST 103 or HIST 104 or HIST 106	History of the US to 1865 or History of the US, 1865 to Present or History of Civilization II	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310	Modern Western Civilization or American History to 1877 or American History since 1877	3
GEOL 101	Principles of Physical Geology	4	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
CHEM 102	General Chemistry II	5	CHEM 1320	General Chemistry II	3
BIO 151	General Biology I	5	BIO SCI 1113	General Biology	3
EGR 201	Analytical Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 202	Analytical Mechanics-Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
EGR 203	Mechanics: Strength of Materials	3	CIV ENG 2210	Mechanics of Materials	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	32		Group 2 Major Requirements	26
	Group 1 Core Requirements	39		Group 1 Core Requirements	35
	Total Hours	71		Total Hours*	61

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

## Geological Engineering Group 2 Major Requirements

<u>Joliet Junior College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENG 130	Technical Writing and Communication	3	ENGLISH 3560	Technical Writing	3
HIST 103 or HIST 104 or HIST 106 or PSCI 101	History of the US to 1865 or History of the US, 1865 to Present or History of Civilization II or American National Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
GEOL 101	Principles of Physical Geology	4	GEO ENG 1150 (GEOLOGY 1110)	Physical and Environmental Geology	3
EGR 201	Analytical Mechanics - Statics	3	CIV ENG 2200	Engineering Mechanics - Statics	3
EGR 202	Analytical Mechanics - Dynamics	3	MECH ENG 2350	Engineering Mechanics - Dynamics	2
EGR 203	Mechanics: Strength of Materials	3	CIV ENG 2210	Mechanics of Materials	3
BIO 151 or CHEM 102 or CHEM 209	General Biology I or General Chemistry II or Organic Chemistry I	5	BIO SCI 1113 or CHEM 1320 or CHEM 2210	General Biology or General Chemistry II or Organic Chemistry I <small>or any 3-hour course in chemistry, geochemistry, or biology. Satisfies chemistry/geochemistry elective requirement.</small>	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	30		Group 2 Major Requirements	26
	Group 1 Core Requirements	39		Group 1 Core Requirements	35
	Total Hours	69		Total Hours*	61

\*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>Joliet Junior College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
HIST 103 or HIST 104 or HIST 106 or PSCI 101	History of the US to 1865 or History of the US, 1865 to Present or History of Civilization II or American National Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
ENG 102 or COMM 101 or ENG 130	Rhetoric or Principles of Communication or Technical Writing and Communication	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
EGR 220	Electrical Circuit Analysis	4	EE 2800	Electrical Circuits	3
EGR 201	Analytical Mechanics - Statics	3	CIV ENG 2200	Engineering Mechanics - Statics	3
EGR 203	Mechanics: Strength of Materials	3	CIV ENG 2210	Mechanics of Materials	3
MATH 210	Linear Algebra	3	MATH 3108	Linear Algebra I	3
	Literature Elective	3		Literature Elective	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	25		Group 2 Major Requirements	24
	Group 1 Core Requirements	39		Group 1 Core Requirements	35
	Total Hours	64		Total Hours*	59

\*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>Joliet Junior College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENG 102 or COMM 101 or ENG 130	Rhetoric or Principles of Communication or Technical Writing and Communication	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
HIST 103 or HIST 104 or HIST 106 or PSCI 101	History of the US to 1865 or History of the US, 1865 to Present or History of Civilization II or American National Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
EGR 201	Analytical Mechanics - Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 203	Mechanics: Strength of Materials	3	CIV ENG 2210	Mechanics of Materials	3
CHEM 102	General Chemistry II	5	CHEM 1320	General Chemistry II	3
CHEM 209 or EGR 220 or PHYS 203	Organic Chemistry I (5) or Electrical Circuit Analysis (4) or Engineering Physics III (3)	3	CHEM 2210 or EE 2800 or PHYSICS 2305	Organic Chemistry I (4) or Electrical Circuits (3) or Intro to Modern Physics (3)	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	Maximum Free Electives	5		Maximum Free Electives	3
	Group 2 Major Requirements	31		Group 2 Major Requirements	27
	Group 1 Core Requirements	39		Group 1 Core Requirements	35
	Total Hours	70		Total Hours*	62

\*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>Joliet Junior College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENG 102 or ENG 130	Rhetoric or Technical Writing and Communication	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIST 103 or HIST 104 or HIST 106 or PSCI 101	History of the US to 1865 or History of the US, 1865 to Present or History of Civilization II or American National Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
EGR 201	Analytical Mechanics - Statics	3	CIV ENG 2200*	Engineering Mechanics - Statics	3
EGR 202	Analytical Mechanics - Dynamics	3	MECH ENG 2350	Engineering Mechanics - Dynamics	2
EGR 203	Mechanics: Strength of Materials	3	CIV ENG 2210	Mechanics of Materials	3
GEOL 101	Principles of Physical Geology	4	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	25		Group 2 Major Requirements	23
	Group 1 Core Requirements	39		Group 1 Core Requirements	35
	Total Hours	64		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>Joliet Junior College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENG 102 or COMM 101 or ENG 130	Rhetoric or Principles of Communication or Technical Writing and Communication	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
HIST 103 or HIST 104 or HIST 106 or PSCI 101	History of the US to 1865 or History of the US, 1865 to Present or History of Civilization II or American National Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
MATH 210	Linear Algebra	3	MATH 3108	Linear Algebra I	3
EGR 201	Analytical Mechanics - Statics	3	CIV ENG 2200	Engineering Mechanics - Statics	3
EGR 203	Mechanics: Strength of Materials	3	CIV ENG 2210	Mechanics of Materials	3
EGR 220	Electrical Circuit Analysis	4	EE 2800	Electrical Circuits	3
PHYS 203	Engineering Physics III	3	PHYSICS 2305	Intro to Modern Physics	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	Maximum Free Electives	6		Maximum Free Electives	6
	Group 2 Major Requirements	34		Group 2 Major Requirements	33
	Group 1 Core Requirements	39		Group 1 Core Requirements	35
	Total Hours	73		Total Hours*	68

\*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>Joliet Junior College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENG 130 or ENG 102	Technical Writing and Communication or Rhetoric	3	ENGLISH 3560 or ENGLISH 1160	Technical Writing (preferred) or Writing and Research	3
HIST 103 or HIST 104 or HIST 106 or PSCI 101	History of the US to 1865 or History of the US, 1865 to Present or History of Civilization II or American National Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
GEOL 101	Principles of Physical Geology	4	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
EGR 201	Analytical Mechanics - Statics	3	CIV ENG 2200	Engineering Mechanics - Statics	3
EGR 202	Analytical Mechanics - Dynamics	3	MECH ENG 2350	Engineering Mechanics - Dynamics	2
EGR 203	Mechanics: Strength of Materials	3	CIV ENG 2210	Mechanics of Materials	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	25		Group 2 Major Requirements	23
	Group 1 Core Requirements	39		Group 1 Core Requirements	35
	Total Hours	64		Total Hours*	58

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