

Joliet Junior College — Missouri S&T

General Engineering

Transfer Guide Effective as of Fall 2024

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&T</u>		
MATH 170	Calculus with Analytic Geometry I	5	MATH 1214	Calculus I Grade of C or better is required.	4
MATH 171	Calculus with Analytic Geometry II	4	MATH 1215	Calculus II Grade of C or better is required.	4
MATH 172	Calculus with Analytic Geometry III	4	MATH 2222	Calculus III Grade of C or better is required.	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 Grade of C or better is required.	4
PHYS 202	Engineering Physics II	5	PHYSICS 2135	Engineering Physics II Grade of C or better is required.	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	Principles of Economics II (Microeconomics) or	3	ECON 1100 or	Principles of Microeconomics or	3
ECON 103	Principles of Economics I (Macroeconomics)	3	ECON 1200	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
Biomedical Engineering/Biomufacturing or Biomaterials
Ceramic Engineering
Chemical Engineering and 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 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&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 201	Analytical Mechanics - Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
MATH 210	Linear Algebra	3	MATH 3108	Linear Algebra I <small>Will satisfy the Advanced Math/Comp Sci elective requirement.</small>	3
	Literature Elective	3		Literature Elective	3
Ethics	Ethics Elective <small>Engineering, business, bio, social or other ethics approved by advisor.</small>	3	Ethics	Ethics Elective <small>Engineering, business, bio, social or other ethics approved by advisor.</small>	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	18		Group 2 Major Requirements	18
	Group 1 Core Requirements	39		Group 1 Core Requirements	35
	Total Hours	57		Total Hours*	53

*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&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>	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
GEOL 101	Principles of Physical Geology	4	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
Humanities or Social Science or Communication	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language or one communication course from this list: ENG 102, ENG 130, COMM 101.	3	Humanities or Social Science or Communication	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language or one communication course from this list: ENGLISH 1160, 1600, 3560 or SPMS 1185.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	16		Group 2 Major Requirements	14
	Group 1 Core Requirements	39		Group 1 Core Requirements	35
	Total Hours	55		Total Hours*	49

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

Biomedical Engineering-Biomanufacturing Group 2 Major Requirements

<u>Joliet Junior College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
COMM 101	Principles of Communication	3	SP&MS 1185	Principles of Speech	3
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
CHEM 102	General Chemistry II	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&T degree requirement. Will transfer as general credit.</small>	3
CHEM 209	Organic Chemistry I	5	CHEM 2210, 2219	Organic Chemistry I and Lab	4
CHEM 210 or BIO 151	Organic Chemistry II or General Biology I	5	CHEM 2220, 2229 or BIO SCI 1113, 1219	Organic Chemistry II and Lab or General Biology and Lab <small>Applies to degree as Track Elective.</small>	4
CIS 246	Advanced C Using C++	4	CS 1500	Computational Problem Solving	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language. <i>No free electives applied to the degree.</i>	3 0	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language. Maximum Free Electives	3 0
	Group 2 Major Requirements	31		Group 2 Major Requirements	26
	Group 1 Core Requirements	39		Group 1 Core Requirements	35
	Total Hours	70		Total Hours*	61

*S&T advisor permission is required to transfer more than 68 credit hours toward the degree.

Biomedical Engineering-Biomaterials Group 2 Major Requirements

<u>Joliet Junior College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
COMM 101	Principles of Communication	3	SP&MS 1185	Principles of Speech	3
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
CHEM 102	General Chemistry II	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&T degree requirement. Will transfer as general credit.</small>	3
CHEM 209	Organic Chemistry I	5	CHEM 2210, 2219*	Organic Chemistry I and Lab* <small>*CHEM 2219 Lab applies to the degree as a Track Elective (non-engineering).</small>	4
CHEM 210	Organic Chemistry II or	5	CHEM 2220, 2229*	Organic Chemistry II and Lab* <small>CHEM 2229 Lab applies to the degree as a Track Elective (non-engineering).</small>	4
BIO 151	General Biology I	5	BIO SCI 1113*, 1219*	General General Biology* and Lab* <small>*Applies to degree as Track Elective (Non-engineering).</small>	4
CIS 246	Advanced C Using C++	4	CS 1500	Computational Problem Solving	3
EGR 201	Analytical Mechanics - Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	36		Group 2 Major Requirements	30
	Group 1 Core Requirements	39		Group 1 Core Requirements	35
	Total Hours	75		Total Hours*	65

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

Ceramic Engineering Group 2 Major Requirements

<u>Joliet Junior College</u>		<u>Semester</u>	<u>Missouri S&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
EGR 201	Analytical Mechanics - Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
CHEM 209	Organic Chemistry I	5	CHEM 2210	Organic Chemistry I <small>Will satisfy the advanced chemistry elective requirement.</small>	3
CHEM 102	General Chemistry II	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&T degree requirement. Will transfer as general credit.</small>	3
PHYS 203	Engineering Physics III	3	PHYS 2305	Intro to Modern Physics	3
ENG 102 or COMM 101 or HSS Elective	Rhetoric or Principles of Communication or Any 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 Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	28		Group 2 Major Requirements	24
	Group 1 Core Requirements	39		Group 1 Core Requirements	35
	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 or Chemical Engineering - Biochemical Engineering Emphasis Group 2 Major Requirements

<u>Joliet Junior College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
COMM 101	Principles of Communication	3	SP&MS 1185	Principles of Speech	3
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
CHEM 102	General Chemistry II	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&T degree requirement. Will transfer as general credit.</small>	3
CHEM 209	Organic Chemistry I	5	CHEM 2210, 2219*	Organic Chemistry I and Lab* <small>*The lab will apply to the degree as 1 of the 9 science elective credits (below) .</small>	4
CHEM 210	Organic Chemistry II or	5	CHEM 2220, 2229*	Organic Chemistry II (3) and Lab* (1) <small>CHEM 2220 will partially satisfy the 9-hour science elective requirement. CHEM 2229 is not an S&T degree requirement, will transfer as general elective credit.</small>	8
CIS 246	Advanced C Using C++	4	CS 1500	Computational Problem Solving	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	31		Group 2 Major Requirements	30
	Group 1 Core Requirements	39		Group 1 Core Requirements	35
	Total Hours	70		Total Hours*	65

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

Civil Engineering Group 2 Major Requirements

<u>Joliet Junior College</u>		<u>Semester</u>	<u>Missouri S&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	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	3
GEOL 101	Principles of Physical Geology	4	GEOLOGY 1110 (GEO ENG 1150)	3
EGR 201	Analytical Mechanics - Statics	3	CIV ENG 2200	3
EGR 202	Analytical Mechanics - Dynamics	3	MECH ENG 2350	2
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	3
	<i>No free electives applied to the degree.</i>	0		0
	Group 2 Major Requirements	19		17
	Group 1 Core Requirements	39		35
	Total Hours	58		Total Hours*
				52

*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&T</u>	
COMM 101	Principles of Communication	3	SPMS 1185	3
ENG 102 or ENG 130	Rhetoric or Technical Writing and Communication	3	ENGLISH 1160 or ENGLISH 3560	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	3
CIS 246	Advanced C Using C++	4	CS 1500	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	3
MATH 210	Linear Algebra	3	MATH 3108	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	3
Electives	Maximum Free Electives	3	Electives	3
	Group 2 Major Requirements	25		24
	Group 1 Core Requirements	39		35
	Total Hours	64		Total Hours*
				59

*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&T</u>	
COMM 101	Principles of Communication	3	SPMS 1185	3
ENG 102 or ENG 130	Rhetoric or Technical Writing and Communication	3	ENGLISH 1160 or ENGLISH 3560	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	3
CIS 246	Advanced C Using C++	4	CS 1500	3
EGR 201 and EGR 202	Analytical Mechanics-Statics (3) and Analytical Mechanics-Dynamics (3)	5	CIV ENG 2200 and MECH ENG 2350	3
BOTH of the courses above or ONE of the courses below.	Both courses above combined or any one of the following courses will satisfy a required engineering science elective.	5	BOTH of the courses above or ONE of the courses below.	3
OR	OR		OR	
CHEM 209	Organic Chemistry I (5)		CHEM 2210	3
MATH 210	Linear Algebra	3	MATH 3108	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	3
Electives	Maximum Free Electives	3	Electives	3
	Group 2 Major Requirements	27		24
	Group 1 Core Requirements	39		35
	Total Hours	66		Total Hours*
				59

*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&T</u>		
PSYC 101	General Psychology	3	PSYCH 1101	General Psychology	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
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 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
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	3	Electives	Maximum Free Electives	0
	Group 2 Major Requirements	24		Group 2 Major Requirements	20
	Group 1 Core Requirements	39		Group 1 Core Requirements	35
	Total Hours	63		Total Hours*	61

*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&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, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&T degree requirement. Will transfer as general credit.</small>	3
BIO 151	General Biology I	5	BIO SCI 1113, 1219*	General Biology (3) and Lab* (1) <small>*BIO SCI 1219 is not an S&T degree requirement, will transfer as general elective credit.</small>	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
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	29		Group 2 Major Requirements	23
	Group 1 Core Requirements	39		Group 1 Core Requirements	35
	Total Hours	68		Total Hours*	58

*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&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
CIS 246	Advanced C Using C++	4	CS 1500	Computational Problem Solving	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	4	MECH ENG 2350	Engineering Mechanics-Dynamics	2
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	27		Group 2 Major Requirements	23
	Group 1 Core Requirements	39		Group 1 Core Requirements	35
	Total Hours	66		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>Joliet Junior College</u>		<u>Semester</u>	<u>Missouri S&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 201	Analytical Mechanics - Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
MATH 210	Linear Algebra	3	MATH 3108	Linear Algebra I <small>Will satisfy the Advanced Math/Comp Sci elective requirement.</small>	3
	Literature Elective	3		Literature Elective	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	18		Group 2 Major Requirements	18
	Group 1 Core Requirements	39		Group 1 Core Requirements	35
	Total Hours	57		Total Hours*	53

*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&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
CHEM 102	General Chemistry II	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&T degree requirement. Will transfer as general credit.</small>	3
CHEM 209 or PHYS 203	Organic Chemistry I (5) or Engineering Physics III (3)	3	CHEM 2210 or PHYSICS 2305	Organic Chemistry I (3) or Intro to Modern Physics (3) <small>Not specifically required for the degree but will satisfy out-of-department technical elective requirement</small>	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Electives	Maximum Free Electives	3	Electives	Maximum Free Electives	3
	Group 2 Major Requirements	26		Group 2 Major Requirements	24
	Group 1 Core Requirements	39		Group 1 Core Requirements	35
	Total Hours	65		Total Hours*	59

*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&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
GEOL 101	Principles of Physical Geology	4	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	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 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&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
PHYS 203	Engineering Physics III	3	PHYSICS 2305	Intro to Modern Physics	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Electives	Maximum Free Electives	6	Electives	Maximum Free Electives	6
	Group 2 Major Requirements	27		Group 2 Major Requirements	27
	Group 1 Core Requirements	39		Group 1 Core Requirements	35
	Total Hours	66		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>Joliet Junior College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 130 or ENG 102	Technical Writing and Communication (preferred) 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
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	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 Petroleum Engineering degree.