

Lewis & Clark Community 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>Lewis & Clark Community College</u>			<u>Semester</u>	<u>Missouri S&T</u>			
MATH 171	Calculus and Analytical Geometry I	5	MATH 1214	Calculus for Engineers I	Grade of C or better is required.	4	
MATH 172	Calculus and Analytical Geometry II	5	MATH 1215	Calculus for Engineers II	Grade of C or better is required.	4	
MATH 271	Calculus and Analytical Geometry III	4	MATH 2222	Calculus with Analytic Geometry III	Grade of C or better is required.	4	
MATH 272	Differential Equations	3	MATH 3304	Elementary Differential Equations		3	
PHYS 141	General Physics I	5	PHYSICS 1135	Engineering Physics I	Grade of C or better is required.	4	
PHYS 142	General Physics II	5	PHYSICS 2135	Engineering Physics II	Grade of C or better is required.	4	
CHEM 141	General Chemistry I	5	CHEM 1310, 1319	General Chemistry I and Lab		5	
DRFT 140	Computer Aided Drafting	3	MECH ENG 1720	Engineering Design with Computer Appl		3	
ENGL 131	First Year-English I	3	ENGLISH 1120	Exposition and Argumentation		3	
ECON 152 or ECON 151	Principles of Microeconomics or Principles of Macroeconomics	3	ECON 1100 or ECON 1200	Principles of Microeconomics or Principles of Macroeconomics		3	
Total Hours			41	Total Hours			37

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. Your campus may have additional acceptable options. Consult with your advisor or email transfer@mst.edu with questions.

Aerospace Engineering Group 2 Major Requirements

<u>Lewis & Clark Community College</u>	<u>Semester</u>	<u>Missouri S&T</u>	
HIST 231 or HIST 232 or HIST 132 or POLS 131 American Republic: Beginnings-1877 or American Nation: 1877-Present or Western Civilization II or American 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
ENGL 132 or SPCH 131 or ENGL 237 First Year English II or Fundamentals of Speech or Technical Communication	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560 Writing and Research or Principles of Speech or Technical Writing	3
CIS 235 or CIS 236 C Programming or Programming Language	C++ 3	CS 1971, 1981 or CS 1570, 1580 Intro to Programming Method and Lab (C++) or Intro to Programming and Lab (C++)	3 3
PHYS 210 Engineering Circuit Analysis	3	EE 2800 Circuit Analysis I	3
PHYS 241 Applied Mechanics-Statics	3	CIV ENG 2200 Engineering Mechanics-Statics	3
PHYS 246 Thermodynamics	3	MECH ENG 2519 Thermodynamics	3
PHYS 245 Mechanics of Solids	3	CIV ENG 2210 Mechanics of Materials	3
MATH 274 Linear Algebra	3	MATH 3108 Linear Algebra I <small>(Will satisfy the Advanced Math/Comp Sci elective requirement.)</small>	3
<i>See your advisor for course options.</i>		Literature Elective	3
<i>See your advisor for course options.</i>		Ethics Elective	3
<i>No free electives applied to the degree.</i>		Maximum Free Electives	0
Group 2 Major Requirements	24	Group 2 Major Requirements	30
Group 1 Core Requirements	41	Group 1 Core Requirements	37
Total Hours	65	Total Hours*	67

*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>Lewis & Clark Community College</u>	<u>Semester</u>	<u>Missouri S&T</u>	
HIST 132 or HIST 231 or HIST 232 Western Civilization II or American Republic: Beginnings-1877 or American Nation: 1877-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
PHYS 241 Applied Mechanics-Statics	3	CIV ENG 2200 Engineering Mechanics-Statics	3
PHYS 242 Applied Mechanics-Dynamics	3	MECH ENG 2350 Engineering Mechanics-Dynamics	3
PHYS 245 Mechanics of Solids	3	CIV ENG 2210 Mechanics of Materials	3
ENGL 132 or SPCH 131 First Year English II or Fundamentals of Speech	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	3
PHSC 141 or PHYS 244 Intro to Astronomy or Intro to Modern Physics	3	PHYSICS 1505 or PHYSICS 2305 Introductory Astronomy or Intro to Modern Physics (or other chemistry, geology, biology, physics, or astronomy course that is not otherwise required for the degree) <small>Applies to the degree as a basic science elective</small>	3
<i>No free electives applied to the degree.</i>		Maximum Free Electives	0
Group 2 Major Requirements	18	Group 2 Major Requirements	18
Group 1 Core Requirements	41	Group 1 Core Requirements	37
Total Hours	59	Total Hours*	55

*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>Lewis & Clark Community College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HIST 231 or HIST 232 or HIST 132 or POLS 131	American Republic: Beginnings-1877 or American Nation: 1877-Present or Western Civilization II or American 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
PHYS 241	Applied Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PHYS 245	Mechanics of Solids	3	CIV ENG 2210	Mechanics of Materials	3
CHEM 261, 262	Organic Chemistry I and Lab	5	CHEM 2210/2219	Organic Chemistry I and Lab (Not a specific requirement. Will satisfy technical elective requirement.)	5
CHEM 142	General Chemistry II	5	CHEM 1320	General Chemistry II	3
ENGL 132 or SPCH 131	First Year English II or Fundamentals of Speech	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, 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		23
Group 2 Major Requirements			Group 1 Core Requirements		37
Group 1 Core Requirements			Total Hours*		60
Total Hours					63

*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>Lewis & Clark Community College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENGL 132 or ENGL 237	First Year English II or Technical Communication	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIST 231 or HIST 232 or HIST 132 or POLS 131	American Republic: Beginnings-1877 or American Nation: 1877-Present or Western Civilization II or American 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 142	General Chemistry II	5	CHEM 1320	General Chemistry II	5
CHEM 261, 262	Organic Chemistry I and Lab	5	CHEM 2210	Organic Chemistry I	3
CHEM 263	Organic Chemistry II	3	CHEM 2220	Organic Chemistry II (Will satisfy science elective requirement.)	3
CIS 235 or CIS 236	C Programming or Programming Language	C++ 3	CS 1971, 1981 or CS 1570, 1580	Intro to Programming Method and Lab (C++) or Intro to Programming and Lab (C++)	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			Group 2 Major Requirements		26
Group 1 Core Requirements			Group 1 Core Requirements		37
Total Hours			Total Hours*		63

*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>Lewis & Clark Community College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENGL 132 or ENGL 237	First Year English II or Technical Communication	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIST 231 or HIST 232 or HIST 132 or POLS 131	American Republic: Beginnings-1877 or American Nation: 1877-Present or Western Civilization II or American 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 142	General Chemistry II	5	CHEM 1320	General Chemistry II	5
CHEM 261, 262	Organic Chemistry I and Lab	5	CHEM 2210	Organic Chemistry I	3
CHEM 263	Organic Chemistry II	3	CHEM 2220	Organic Chemistry II (Will satisfy science elective requirement.)	3
CIS 235 or CIS 236	C Programming or Programming Language	C++ 3	CS 1971, 1981 or CS 1570, 1580	Intro to Programming Method and Lab (C++) or Intro to Programming and Lab (C++)	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			Group 2 Major Requirements		26
Group 1 Core Requirements			Group 1 Core Requirements		37
Total Hours			Total Hours*		63

*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>Lewis & Clark Community College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENGL 132 or SPCH 131 or ENGL 237	First Year English II or Fundamentals of Speech or Technical Communication	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Public Speaking or Technical Writing	3
HIST 231 or HIST 232 or HIST 132 or POLS 131	American Republic: Beginnings-1877 or American Nation: 1877-Present or Western Civilization II or American 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
PHYS 241	Applied Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PHYS 242	Applied Mechanics-Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	3
PHYS 245	Mechanics of Solids	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		15	Group 2 Major Requirements		18
Group 1 Core Requirements		41	Group 1 Core Requirements		37
Total Hours		56	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>Lewis & Clark Community College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
SPCH 131	Fundamentals of Speech	3	SPMS 1185	Public Speaking	3
ENGL 132 or ENGL 237	First Year English II or Technical Communication	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIST 231 or HIST 232 or HIST 132 or POLS 131	American Republic: Beginnings-1877 or American Nation: 1877-Present or Western Civilization II or American 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
CIS 236	C++ Programming Language	3	CS 1570, 1580	Intro to Programming and Lab (C++)	4
PHYS 241 and PHYS 242	Applied Mechanics- Statics and Applied Mechanics-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>	6
PHYS 210	Engineering Circuit Analysis	3	EE 2100**	Circuits I <small>**A passing grade on the Missouri S&T EE Advancement Exam I is required to receive credit for EE 2100.</small>	3
MATH 274	Linear Algebra	3	MATH 3108	Linear Algebra <small>(Will satisfy a required math elective.)</small>	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		21	Group 2 Major Requirements		31
Group 1 Core Requirements		41	Group 1 Core Requirements		37
Total Hours		62	Total Hours*		68

*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>Lewis & Clark Community College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
SPCH 131	Fundamentals of Speech	3	SPMS 1185	Public Speaking	3
ENGL 132 or ENGL 237	First Year English II or Technical Communication	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIST 231 or HIST 232 or HIST 132 or POLS 131	American Republic: Beginnings-1877 or American Nation: 1877-Present or Western Civilization II or American 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
CIS 236	C++ Programming Language	3	CS 1570, 1580	Intro to Programming and Lab (C++)	4
PHYS 241 and PHYS 242	Applied Mechanics- Statics and Applied Mechanics-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>	6
PHYS 210	Engineering Circuit Analysis	3	EE 2100**	Circuits I <small>**A passing grade on the Missouri S&T EE Advancement Exam I is required to receive credit for EE 2100.</small>	3
MATH 274	Linear Algebra	3	MATH 3108	Linear Algebra	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		21	Group 2 Major Requirements		31
Group 1 Core Requirements		41	Group 1 Core Requirements		37
Total Hours		62	Total Hours*		68

*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>Lewis & Clark Community College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
PSYC 131	General Psychology	3	PSYCH 1101	General Psychology	3
HIST 231 or	American Republic: Beginnings-1877 or		HISTORY 1300 or	American History to 1877 or	
HIST 232 or	American Nation: 1877-Present or	3	HISTORY 1310 or	American History since 1877 or	3
HIST 132 or	Western Civilization II or		HISTORY 1200 or	Modern Western Civilization or	
POLS 131	American Government		POL SCI 1200	American Government	
ENGL 132 or	First Year English II or		ENGLISH 1160 or	Writing and Research or	
SPCH 131 or	Fundamentals of Speech or	3	SPMS 1185 or	Principles of Speech or	3
ENGL 237	Technical Communication		ENGLISH 3560	Technical Writing	
PHYS 210	Engineering Circuit Analysis	3	EE 2800	Circuit Analysis I	3
PHYS 241	Applied Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PHYS 242	Applied Mechanics-Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	3
PHYS 245	Mechanics of Solids	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		21	Group 2 Major Requirements		27
Group 1 Core Requirements		41	Group 1 Core Requirements		37
Total Hours		62	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>Lewis & Clark Community College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENGL 132 or	First Year English II or		ENGLISH 1160 or	Writing and Research or	
SPCH 131 or	Fundamentals of Speech or	3	SPMS 1185 or	Public Speaking or	3
ENGL 237	Technical Communication		ENGLISH 3560	Technical Writing	
HIST 231 or	American Republic: Beginnings-1877 or		HISTORY 1300 or	American History to 1877 (preferred) or	
HIST 232 or	American Nation: 1877-Present or	3	HISTORY 1310 or	American History since 1877 (preferred) or	3
HIST 132	Western Civilization II		HISTORY 1200	Modern Western Civilization	
CHEM 142	General Chemistry II	5	CHEM 1320	General Chemistry II	3
BIOL 130	Fundamentals of Biological Science	4	BIO SCI 1113	General Biology	4
PHYS 241	Applied Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PHYS 242	Applied Mechanics-Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	3
PHYS 245	Mechanics of Solids	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		24	Group 2 Major Requirements		25
Group 1 Core Requirements		41	Group 1 Core Requirements		37
Total Hours		65	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>Lewis & Clark Community College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENGL 132 or	First Year English II or		ENGLISH 1160 or	Writing and Research or	
SPCH 131 or	Fundamentals of Speech or	3	SPMS 1185 or	Public Speaking or	3
ENGL 237	Technical Communication		ENGLISH 3560	Technical Writing	
HIST 231 or	American Republic: Beginnings-1877 or		HISTORY 1300 or	American History to 1877 or	
HIST 232 or	American Nation: 1877-Present or	3	HISTORY 1310 or	American History since 1877 or	3
HIST 132 or	Western Civilization II or		HISTORY 1200 or	Modern Western Civilization or	
POLS 131	American Government		POL SCI 1200	American Government	
PHYS 241	Applied Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PHYS 242	Applied Mechanics-Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	3
PHYS 245	Mechanics of Solids	3	CIV ENG 2210	Mechanics of Materials	3
BIOL 130 or	Fundamentals of Biological Science or		BIO SCI 1113 or	General Biology or	
CHEM 142 or	General Chemistry II or	4	CHEM 1320 or	General Chemistry II or	
CHEM 261, 262	Organic Chemistry and Lab		CHEM 2210	Organic Chemistry I	
	<i>See your advisor for course options.</i>			<i>or any 3-hour course in chemistry, geochemistry, or biology</i>	
	<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
Group 2 Major Requirements		19	Group 2 Major Requirements		21
Group 1 Core Requirements		41	Group 1 Core Requirements		37
Total Hours		60	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>Lewis & Clark Community College</u>		<u>Semester</u>	<u>Missouri S&T</u>	
HIST 231 or HIST 232 or HIST 132 or POLS 131	American Republic: Beginnings-1877 or American Nation: 1877-Present or Western Civilization II or American 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
ENGL 132 or SPCH 131 or ENGL 237	First Year English II or Fundamentals of Speech or Technical Communication	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing
CIS 235 or CIS 236	C Programming or Programming Language	3	CS 1971, 1981 or CS 1570, 1580	Intro to Programming Method and Lab (C++) or Intro to Programming and Lab (C++)
PHYS 210	Engineering Circuit Analysis	3	EE 2800	Circuit Analysis I
PHYS 241	Applied Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics
PHYS 246	Thermodynamics	3	MECH ENG 2519	Thermodynamics
PHYS 245	Mechanics of Solids	3	CIV ENG 2210	Mechanics of Materials
MATH 274	Linear Algebra	3	MATH 3108	Linear Algebra I <small>(Will satisfy the Advanced Math/Comp Sci elective requirement.)</small>
				Literature Elective
				Humanities/Social Science Elective
				Maximum Free Electives
		15		Group 2 Major Requirements
		41		Group 1 Core Requirements
Total Hours		56		Total Hours*
				21
				37
				58

*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>Lewis & Clark Community College</u>		<u>Semester</u>	<u>Missouri S&T</u>	
ENGL 132 or SPCH 131 or ENGL 237	First Year English II or Fundamentals of Speech or Technical Communication	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Public Speaking or Technical Writing
HIST 231 or HIST 232 or HIST 132 or POLS 131	American Republic: Beginnings-1877 or American Nation: 1877-Present or Western Civilization II or American 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
PHYS 241	Applied Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics
PHYS 245	Mechanics of Solids	3	CIV ENG 2210	Mechanics of Materials
CHEM 142	General Chemistry II	5	CHEM 1320	General Chemistry II
CHEM 261, 262 or PHYS 210	Organic Chemistry and Lab I or Engineering Circuit Analysis	3	CHEM 2210 or EE 2800	Organic Chemistry I or Electrical Circuits <small>Not specifically required for the degree but will satisfy Out-of-Department Technical Elective Requirement</small>
				Humanities/Social Science Elective
				Humanities/Social Science Elective
				Maximum Free Electives
		20		Group 2 Major Requirements
		41		Group 1 Core Requirements
Total Hours		61		Total Hours*
				29
				37
				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>Lewis & Clark Community College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENGL 132 or ENGL 237	First Year English II or Technical Communication	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIST 231 or HIST 232 or HIST 132 or POLS 131	American Republic: Beginnings-1877 or American Nation: 1877-Present or Western Civilization II or American 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
PHYS 241	Applied Mechanics-Statics	3	CIV ENG 2200*	Engineering Mechanics-Statics	3
PHYS 242	Applied Mechanics-Dynamics	3	MECH ENG 2350*	Engineering Mechanics-Dynamics	3
PHYS 245	Mechanics of Solids	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
Group 2 Major Requirements		15	Group 2 Major Requirements		21
Group 1 Core Requirements		41	Group 1 Core Requirements		37
Total Hours		56	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>Lewis & Clark Community College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENGL 132 or ENGL 237	First Year English II or Technical Communication	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIST 231 or HIST 232 or HIST 132 or POLS 131	American Republic: Beginnings-1877 or American Nation: 1877-Present or Western Civilization II or American 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
CIS 235 or CIS 236	C Programming or Programming Language	C++ 3	CS 1971, 1981 or CS 1570, 1580	Intro to Programming Method and Lab (C++) or Intro to Programming and Lab (C++)	3 4
PHYS 241	Applied Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PHYS 245	Mechanics of Solids	3	CIV ENG 2210	Mechanics of Materials	3
				Humanities/Social Science Elective	3
				Humanities/Social Science Elective	3
				Maximum Free Electives	6
Group 2 Major Requirements		15	Group 2 Major Requirements		24
Group 1 Core Requirements		41	Group 1 Core Requirements		37
Total Hours		56	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>Lewis & Clark Community College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENGL 132 or ENGL 237	First Year English II or Technical Communication	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIST 231 or HIST 232 or HIST 132 or POLS 131	American Republic: Beginnings-1877 or American Nation: 1877-Present or Western Civilization II or American 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
PHYS 241	Applied Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PHYS 242	Applied Mechanics-Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	3
PHYS 245	Mechanics of Solids	3	CIV ENG 2210	Mechanics of Materials	3
				Humanities/Social Science Elective	3
				Humanities/Social Science Elective	3
				Maximum Free Electives	0
Group 2 Major Requirements		9	Group 2 Major Requirements		15
Group 1 Core Requirements		41	Group 1 Core Requirements		37
Total Hours		50	Total Hours*		52

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