

Lewis & Clark Community 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>Lewis & Clark Community College</u>			<u>Semester</u>	<u>Missouri S&T</u>			
MATH 171	Calculus and Analytical Geometry I	5		MATH 1214	Calculus I	4	
MATH 172	Calculus and Analytical Geometry II	5		MATH 1215	Calculus II	4	
MATH 271	Calculus and Analytical Geometry III	4		MATH 2222	Calculus III	4	
MATH 272	Differential Equations	3		MATH 3304	Elementary Differential Equations	3	
PHYS 141	General Physics I	5		PHYSICS 1135	Engineering Physics I	4	
PHYS 142	General Physics II	5		PHYSICS 2135	Engineering Physics II	4	
CHEM 141	General Chemistry I	5		CHEM 1310, 1319	General Chemistry I and Lab	5	
ENGL 131	First Year-English I	3		ENGLISH 1120	Exposition and Argumentation	3	
ECON 152 or	Principles of Microeconomics or	3		ECON 1100 or	Principles of Microeconomics or	3	
ECON 151	Principles of Macroeconomics	3		ECON 1200	Principles of Macroeconomics	3	
Total Hours			38	Total Hours			34

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 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>Lewis & Clark Community College</u>		<u>Semester</u>	<u>Missouri S&T</u>	
HIST 132 or HIST 231 or HIST 232 or POL SCI 131	Western Civilization II or American Republic: Beginnings-1877 or American Nation: 1877-Present or American 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
ENGL 132 or SPCH 131 or ENGL 137	First-Year English II or Public Speaking or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing
CIS 235	C++ Programming	3	CS 1971, 1981	Intro to Programming Method 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 242	Applied Mechanics - Dynamics	3	AERO ENG 2360	Dynamics
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	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	33		Group 2 Major Requirements
	Group 1 Core Requirements	38		Group 1 Core Requirements
	Total Hours	71		Total Hours*
				67

*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>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>
PHYS 241	Applied Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics
PHYS 242	Applied Mechanics-Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics
PHYS 245	Mechanics of Solids	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
ADCG 133	Intro to Architecture	3	ART 3203	Architectural Design I
PHSC 145	Intro Geology & Physical Geography	3	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology
PHYS 246	Thermodynamics	3	MECH ENG 2527	Thermal Analysis
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives
	Group 2 Major Requirements	24		Group 2 Major Requirements
	Group 1 Core Requirements	38		Group 1 Core Requirements
	Total Hours	62		Total Hours*
				57

*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>Lewis & Clark Community College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HIST 132 or HIST 231 or HIST 232 or POL SCI 131	Western Civilization II or American Republic: Beginnings-1877 or American Nation: 1877-Present or American 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
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	Organic Chemistry I	3	CHEM 2210	Organic Chemistry I <small>(Will satisfy the advanced chemistry elective requirement.)</small>	3
CHEM 142	General Chemistry II	5	CHEM 1320	General Chemistry II	3
PHYS 244	Intro to Modern Physics	3	PHYS 2305	Intro to Modern Physics	3
ENGL 132 or SPCH 131 or HSS Elective	First-Year English II or Public Speaking 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	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	26		Group 2 Major Requirements	24
	Group 1 Core Requirements	38		Group 1 Core Requirements	34
	Total Hours	64		Total Hours*	58

*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 137	Technical Writing	3	ENGLISH 3560	Technical Writing	3
HIST 132 or HIST 231 or HIST 232 or POL SCI 131	Western Civilization II or American Republic: Beginnings-1877 or American Nation: 1877-Present or American 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 142	General Chemistry II	5	CHEM 1320	General Chemistry II	3
CHEM 261, 262	Organic Chemistry I and Lab	4	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 263	Organic Chemistry II	3	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 235	C++ Programming	3	CS 1971, 1981*	Intro to Programming Method and Lab (C++)* <small>*Will be substituted for CS 1500.</small>	3
PHYS 246	Thermodynamics	3	MECH ENG 2519*	Thermodynamics* <small>*The combination of MECH ENG 2519 AND CHEM ENG 4000 (an independent study, online S&T course) will be substituted for CHEM ENG 2110 by the chemical engineering department. Students must complete both courses to receive credit.</small>	3
SPCH 131	Public Speaking	3	SP&MS 1185	Principles of Speech	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	28
	Group 1 Core Requirements	38		Group 1 Core Requirements	34
	Total Hours	68		Total Hours*	62

*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>Lewis & Clark Community College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENGL 137	Technical Writing	3	ENGLISH 3560	Technical Writing	3
HIST 132 or HIST 231 or HIST 232 or POL SCI 131	Western Civilization II or American Republic: Beginnings-1877 or American Nation: 1877-Present or American 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 142	General Chemistry II	5	CHEM 1320	General Chemistry II	3
CHEM 261, 262	Organic Chemistry I and Lab	4	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 263	Organic Chemistry II	3	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 235	C++ Programming	3	CS 1971, 1981*	Intro to Programming Method and Lab (C++)* <small>*Will be substituted for CS 1500.</small>	3
PHYS 246	Thermodynamics	3	MECH ENG 2519*	Thermodynamics* <small>*The combination of MECH ENG 2519 AND CHEM ENG 4000 (an independent study, online S&T course) will be substituted for CHEM ENG 2110 by the chemical engineering department. Students must complete both courses to receive credit.</small>	3
SPCH 131	Public Speaking	3	SP&MS 1185	Principles of Speech	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	28
	Group 1 Core Requirements	38		Group 1 Core Requirements	34
	Total Hours	68		Total Hours*	62

*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>Lewis & Clark Community College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENGL 132 or SPCH 131 or ENGL 137	First-Year English II or Public Speaking or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
HIST 132 or HIST 231 or HIST 232 or POL SCI 131	Western Civilization II or American Republic: Beginnings-1877 or American Nation: 1877-Present or American 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
PHSC 145	Intro Geology & Physical Geography	3	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	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	2
PHYS 245	Mechanics of Solids	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	21		Group 2 Major Requirements	20
	Group 1 Core Requirements	38		Group 1 Core Requirements	34
	Total Hours	59		Total Hours*	54

*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	Public Speaking	3	SPMS 1185	Principles of Speech	3
ENGL 132 or ENGL 137	First-Year English II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIST 132 or HIST 231 or HIST 232 or POL SCI 131	Western Civilization II or American Republic: Beginnings-1877 or American Nation: 1877-Present or American 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 235	C++ Programming Language I	3	CS 1500	Computational Problem Solving	3
PHYS 241 or PHYS 242 or PHYS 246 or PHYS 244 or CHEM 261	Applied Mechanics-Statics (or Applied Mechanics-Dynamics or Thermodynamics or Intro to Modern Physics or Organic Chemistry I	3	CIV ENG 2200 or MECH ENG 2350 or MECH ENG 2519 or PHYSICS 2305 or CHEM 2210	Engineering Mechanics-Statics (3) or Engineering Mechanics-Dynamics (2) or Thermodynamics (3) or Intro to Modern Physics (3) or Organic Chemistry I (4)	3
PHYS 210	Engineering Circuit Analysis	3	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 274	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	27		Group 2 Major Requirements	27
	Group 1 Core Requirements	38		Group 1 Core Requirements	34
	Total Hours	65		Total Hours*	61

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

Electrical Engineering Group 2 Major Requirements

<u>Lewis & Clark Community College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
SPCH 131	Public Speaking	3	SPMS 1185	Principles of Speech	3
ENGL 132 or ENGL 137	First-Year English II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIST 132 or HIST 231 or HIST 232 or POL SCI 131	Western Civilization II or American Republic: Beginnings-1877 or American Nation: 1877-Present or American 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 235	C++ Programming Language I	3	CS 1500	Computational Problem Solving	3
PHYS 241 and PHYS 242 (BOTH of the courses above or ONE of the courses below.) OR	Applied Mechanics-Statics (3) and Applied Mechanics-Dynamics (3) (Both courses above combined or any one of the following courses will satisfy a required engineering science elective.) OR	3	CIV ENG 2200 and MECH ENG 2350 (BOTH of the courses above or ONE of the courses below.) OR	Engineering Mechanics-Statics (3) and Engineering Mechanics-Dynamics (2) (Both courses above combined or any one of the following courses will satisfy a required engineering science elective.) OR	3
PHYS 246 or PHYS 244 or CHEM 261	Thermodynamics (3) or Intro to Modern Physics (3) Organic Chemistry I (4)	3	MECH ENG 2519 or PHYSICS 2311 or CHEM 2210	Thermodynamics (3) or Modern Physics I (3) or Organic Chemistry I (3)	3
PHYS 210	Engineering Circuit Analysis	3	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 274	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	27		Group 2 Major Requirements	27
	Group 1 Core Requirements	38		Group 1 Core Requirements	34
	Total Hours	65		Total Hours*	61

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

Engineering Management Group 2 Major Requirements

<u>Lewis & Clark Community College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
PSYC 131	General Psychology	3	PSYCH 1101	General Psychology	3
HIST 132 or HIST 231 or HIST 232 or POL SCI 131	Western Civilization II or American Republic: Beginnings-1877 or American Nation: 1877-Present or American 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
SPCH 131	Public Speaking	3	SPMS 1185	Principles of Speech	3
ENGL 132 or ENGL 137	First-Year English II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
CIS 235	C++ Programming	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)	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 242	Applied Mechanics-Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
PHYS 245	Mechanics of Solids	3	CIV ENG 2210	Mechanics of Materials	3
PHYS 246	Thermodynamics	3	MECH ENG 2519	Thermodynamics <small>*Will be substituted for MECH ENG 2527.</small>	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	Maximum Free Electives	3		Maximum Free Electives	3
	Group 2 Major Requirements	36		Group 2 Major Requirements	35
	Group 1 Core Requirements	38		Group 1 Core Requirements	34
	Total Hours	74		Total Hours*	69

*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 SPCH 131 or ENGL 137	First-Year English II or Public Speaking or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
HIST 231 or HIST 232 or HIST 132	American Republic: Beginnings-1877 or American Nation: 1877-Present or Western Civilization II	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200	American History to 1877 or American History since 1877 or Modern Western Civilization	3
PHSC 145	Intro Geology & Physical Geography	3	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
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	2
PHYS 245	Mechanics of Solids	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	30		Group 2 Major Requirements	27
	Group 1 Core Requirements	38		Group 1 Core Requirements	34
	Total Hours	68		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>Lewis & Clark Community College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENGL 137	Technical Writing	3	ENGLISH 3560	Technical Writing	3
HIST 132 or HIST 231 or HIST 232 or POL SCI 131	Western Civilization II or American Republic: Beginnings-1877 or American Nation: 1877-Present or American 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
PHSC 145	Intro Geology & Physical Geography	3	GEO ENG 1150 (GEOLOGY 1110)	Physical and Environmental Geology	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	2
PHYS 245	Mechanics of Solids	3	CIV ENG 2210	Mechanics of Materials	3
BIOL 130 or CHEM 142 or CHEM 261	Fundamentals of Biological Science or General Chemistry II or Organic ChemistryI	3	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	27		Group 2 Major Requirements	26
	Group 1 Core Requirements	38		Group 1 Core Requirements	34
	Total Hours	65		Total Hours*	60

*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>		
ENGL 132 or SPCH 131 or ENGL 137	First-Year English II or Public Speaking or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Public Speaking or Technical Writing	3
HIST 132 or HIST 231 or HIST 232 or POL SCI 131	Western Civilization II or American Republic: Beginnings-1877 or American Nation: 1877-Present or American 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 235	C++ Programming	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)	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 242	Applied Mechanics - Dynamics	3	MECH ENG 2360	Dynamics	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 <small>(Will satisfy the Advanced Math/Computer Science elective requirement.)</small>	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	30		Group 2 Major Requirements	33
	Group 1 Core Requirements	38		Group 1 Core Requirements	34
	Total Hours	68		Total Hours*	67

*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 137	First-Year English II or Public Speaking or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
HIST 132 or HIST 231 or HIST 232 or POL SCI 131	Western Civilization II or American Republic: Beginnings-1877 or American Nation: 1877-Present or American 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
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 142	General Chemistry II	5	CHEM 1320	General Chemistry II	3
CHEM 261 or PHYS 210 or PHYS 244	Organic Chemistry or Engineering Circuit Analysis or Intro to Modern Physics	3	CHEM 2210 or EE 2800 or PHYSICS 2305	Organic Chemistry I (4) or Electrical Circuits (3) or Intro to Modern Physics (3) <i>Not specifically required for the degree but will satisfy Out-of-Department Technical Elective Requirement.</i>	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	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	38		Group 1 Core Requirements	34
	Total Hours	69		Total Hours*	61

*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 137	First-Year English II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIST 132 or HIST 231 or HIST 232 or POL SCI 131	Western Civilization II or American Republic: Beginnings-1877 or American Nation: 1877-Present or American 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
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	2
PHYS 246	Thermodynamics	3	MECH ENG 2519	Thermodynamics <i>*Will be substituted for MECH ENG 2527.</i>	3
PHYS 245	Mechanics of Solids	3	CIV ENG 2210	Mechanics of Materials	3
PHSC 145	Intro Geology & Physical Geography	3	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	27		Group 2 Major Requirements	26
	Group 1 Core Requirements	38		Group 1 Core Requirements	34
	Total Hours	65		Total Hours*	60

*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 SPCH 131 or ENGL 137	First-Year English II or Public Speaking or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
HIST 132 or HIST 231 or HIST 232 or POL SCI 131	Western Civilization II or American Republic: Beginnings-1877 or American Nation: 1877-Present or American 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 235	C++ Programming	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
MATH 274	Linear Algebra	3	MATH 3108	Linear Algebra	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
PHYS 210	Engineering Circuit Analysis	3	EE 2800	Circuit Analysis I	3
PHYS 246	Thermodynamics	3	MECH ENG 2519	Thermodynamics	3
PHYS 244	Intro to Modern Physics	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	39		Group 2 Major Requirements	39
	Group 1 Core Requirements	38		Group 1 Core Requirements	34
	Total Hours	77		Total Hours*	73

*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 137	First-Year English II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIST 132 or HIST 231 or HIST 232 or POL SCI 131	Western Civilization II or American Republic: Beginnings-1877 or American Nation: 1877-Present or American 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
PHSC 145	Intro Geology & Physical Geography	3	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	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	2
PHYS 245	Mechanics of Solids	3	CIV ENG 2210	Mechanics of Materials	3
PHYS 246	Thermodynamics	3	MECH ENG 2519	Thermodynamics	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	27		Group 2 Major Requirements	26
	Group 1 Core Requirements	38		Group 1 Core Requirements	34
	Total Hours	65		Total Hours*	60

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