

Three Rivers College — Missouri S&T

General Engineering Transfer Guide

Effective as of Fall 2020

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>Three Rivers College</u>			<u>Semester</u>	<u>Missouri S&T</u>			
MATH 171	Analytic Geometry and Calculus I	5		MATH 1214	Calculus for Engineers I	4	
MATH 271	Analytic Geometry and Calculus II	5		MATH 1215	Calculus for Engineers II	4	
MATH 272	Analytic Geometry and Calculus III	5		MATH 2222	Calculus with Analytic Geometry III	4	
PHYS 211	General Physics I	5		PHYSICS 1135	Engineering Physics I	4	
PHYS 211	General Physics II	5		PHYSICS 2135	Engineering Physics II	4	
CHEM 121	General Chemistry I	5		CHEM 1310, 1319	General Chemistry I and Lab	5	
ENGL 111	English Composition I	3		ENGLISH 1120	Exposition and Argumentation	3	
ECON 212 or	Principles of Microeconomics or	3		ECON 1100 or	Principles of Microeconomics or	3	
ECON 211	Principles of Macroeconomics			ECON 1200	Principles of Macroeconomics	3	
Total Hours			36	Total Hours			31

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>Three Rivers College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HIST 122 or HIST 111 or HIST 112 or GOVT 121	World Civilization since the Renaissance or American History to 1877 or American History since 1877 or National and State 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
ENGL 112 or SCOM 110	English Composition II or Public Speaking	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
ENGL 231 or ENGL 241 or ENGL 221	English Literature to 1798 or American Literature to 1870 or World Literature to 1600 <small>(or other literature elective)</small>	3	ENGLISH 1211 or ENGLISH 1221 or ENGLISH 1231	British Literature I: The Beginnings to 1800 or American Literature: 1600 to 1865 or World Literature I <small>(or other literature elective)</small>	3
	<i>See your advisor for course options.</i>	3		Ethics Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	12		Group 2 Major Requirements	12
	Group 1 Core Requirements	36		Group 1 Core Requirements	31
	Total Hours	48		Total Hours*	43

*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>Three Rivers College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HIST 122 (or HIST 111 or HIST 112)	World Civilization since the Renaissance (or American History to 1877 or American History since 1877)	3	HISTORY 1200* (or HISTORY 1300 or HISTORY 1310)	Modern Western Civilization* (or American History to 1877 or American History since 1877) <small>*HISTORY 1200 is preferred; 1300 or 1310 will also be accepted.</small>	3
CIVL 116, 216	Surveying I and II	6	CIV ENG 2401	Fundamentals of Surveying	3
ENGL 112 or SCOM 110 or HSS Elective	English Composition 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 Public Speaking or Humanities/Social Science Elective: 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	12		Group 2 Major Requirements	9
	Group 1 Core Requirements	36		Group 1 Core Requirements	31
	Total Hours	48		Total Hours*	40

*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

Ceramic Engineering Group 2 Major Requirements					
Three Rivers College		Semester	Missouri S&T		
HIST 122 or HIST 111 or HIST 112 or GOVT 121	World Civilization since the Renaissance or American History to 1877 or American History since 1877 or National and State 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 122	General Chemistry II	5	CHEM 1320,1510*	General Chemistry II (3) and Qualitative Analysis* (2) *Note: CHEM 1510 is not an S&T degree requirement; course transfers as elective credit.	3
ENGL 112 or SCOM 110 or HSS Elective	English Composition 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 Public Speaking or Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	14		Group 2 Major Requirements	12
	Group 1 Core Requirements	36		Group 1 Core Requirements	31
	Total Hours	50		Total Hours*	43

*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

Chemical Engineering Group 2 Major Requirements					
Three Rivers College		Semester	Missouri S&T		
ENGL 112	English Composition II	3	ENGLISH 1160	Writing and Research	3
HIST 122 or HIST 111 or HIST 112 or GOVT 121	World Civilization since the Renaissance or American History to 1877 or American History since 1877 or National and State 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 122	General Chemistry II	5	CHEM 1320,1510*	General Chemistry II (3) and Qualitative Analysis* (2) *Note: CHEM 1510 is not an S&T degree requirement; course transfers as elective credit.	3
SCOM 110	Public Speaking	3	SP&MS 1185	Principles of Speech	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	17		Group 2 Major Requirements	15
	Group 1 Core Requirements	36		Group 1 Core Requirements	31
	Total Hours	53		Total Hours*	46

*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>Three Rivers College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENGL 112	English Composition II	3	ENGLISH 1160	Writing and Research	3
HIST 122 or HIST 111 or HIST 112 or GOVT 121	World Civilization since the Renaissance or American History to 1877 or American History since 1877 or National and State 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 122	General Chemistry II	5	CHEM 1320,1510*	General Chemistry II (3) and Qualitative Analysis* (2) *Note: CHEM 1510 is not an S&T degree requirement; course transfers as elective credit.	3
SCOM 110	Public Speaking	3	SP&MS 1185	Principles of Speech	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	17		Group 2 Major Requirements	15
	Group 1 Core Requirements	36		Group 1 Core Requirements	31
	Total Hours	53		Total Hours*	46

*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>Three Rivers College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENGL 112 or SCOM 110	English Composition II or Public Speaking	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
HIST 122 or HIST 111 or HIST 112 or GOVT 121	World Civilization since the Renaissance or American History to 1877 or American History since 1877 or National and State 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
CIVL 116, 216	Surveying I and II	6	CIV ENG 2401	Fundamentals of Surveying	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	15		Group 2 Major Requirements	12
	Group 1 Core Requirements	36		Group 1 Core Requirements	31
	Total Hours	51		Total Hours*	43

*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

Computer Engineering Group 2 Major Requirements						
<u>Three Rivers College</u>			<u>Semester</u>	<u>Missouri S&T</u>		
SCOM 110	Public Speaking	3		SPMS 1185	Public Speaking	3
ENGL 112	English Composition II	3		ENGLISH 1160	Writing and Research	3
HIST 122 or	World Civilization since the Renaissance or			HISTORY 1200 or	Modern Western Civilization or	
HIST 111 or	American History to 1877 or	3		HISTORY 1300 or	American History to 1877 or	3
HIST 112 or	American History since 1877 or			HISTORY 1310 or	American History Since 1877 or	
GOVT 121	National and State Government			POL SCI 1200	American Government	
	<i>See your advisor for course options.</i>	3			Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3			Maximum Free Electives	3
	Group 2 Major Requirements	15			Group 2 Major Requirements	15
	Group 1 Core Requirements	36			Group 1 Core Requirements	31
	Total Hours	51			Total Hours*	46

*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

Electrical Engineering Group 2 Major Requirements						
<u>Three Rivers College</u>			<u>Semester</u>	<u>Missouri S&T</u>		
SCOM 110	Public Speaking	3		SPMS 1185	Public Speaking	3
ENGL 112	English Composition II	3		ENGLISH 1160	Writing and Research	3
HIST 122 or	World Civilization since the Renaissance or			HISTORY 1200 or	Modern Western Civilization or	
HIST 111 or	American History to 1877 or	3		HISTORY 1300 or	American History to 1877 or	3
HIST 112 or	American History since 1877 or			HISTORY 1310 or	American History Since 1877 or	
GOVT 121	National and State Government			POL SCI 1200	American Government	
	<i>See your advisor for course options.</i>	3			Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3			Maximum Free Electives	3
	Group 2 Major Requirements	15			Group 2 Major Requirements	15
	Group 1 Core Requirements	36			Group 1 Core Requirements	31
	Total Hours	51			Total Hours*	46

*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

Three Rivers College		Semester	Missouri S&T		
PSYC 111	General Psychology	3	PSYCH 1101	General Psychology	3
HIST 122 or HIST 111 or HIST 112 or GOVT 121	World Civilization since the Renaissance or American History to 1877 or American History since 1877 or National and State 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
ENGL 112 or SCOM 110	English Composition II or Public Speaking	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3		Maximum Free Electives	3
	Group 2 Major Requirements	15		Group 2 Major Requirements	15
	Group 1 Core Requirements	36		Group 1 Core Requirements	31
	Total Hours	51		Total Hours*	46

*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

Three Rivers College		Semester	Missouri S&T		
ENGL 112 or SCOM 110	English Composition II or Public Speaking	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
HIST 122 or HIST 111 or HIST 112	World Civilization since the Renaissance or American History to 1877 or American History since 1877	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310	Modern Western Civilization or American History to 1877 or American History Since 1877	3
CHEM 122	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; course transfers as elective credit.</small>	3
BIOL 101	General Biology	5	BIO SCI 1113, 1219*	General Biology (3) and Lab* (2) <small>*BIO SCI 1219 is not an S&T degree requirement; course transfers as elective credit.</small>	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	3		Maximum Free Electives	0
	Group 2 Major Requirements	22		Group 2 Major Requirements	15
	Group 1 Core Requirements	36		Group 1 Core Requirements	31
	Total Hours	58		Total Hours*	46

*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>Three Rivers College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENGL 112 or SCOM 110	English Composition II or Public Speaking	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
HIST 122 or HIST 111 or HIST 112 or GOVT 121	World Civilization since the Renaissance or American History to 1877 or American History since 1877 or National and State 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
BIOL 101 or CHEM 122	General Biology or General Chemistry II	5	BIO SCI 1113 or CHEM 1320	General Biology or General Chemistry II <small>or any 3-hour course in chemistry, geochemistry, or biology</small>	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	11		Group 2 Major Requirements	15
	Group 1 Core Requirements	36		Group 1 Core Requirements	31
	Total Hours	47		Total Hours*	46

*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>Three Rivers College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HIST 122 or HIST 111 or HIST 112 or GOVT 121	World Civilization since the Renaissance or American History to 1877 or American History since 1877 or National and State 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
ENGL 112 or SCOM 110	English Composition II or Public Speaking	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
ENGL 231 or ENGL 241 or ENGL 221	English Literature to 1798 or American Literature to 1870 or World Literature to 1600 <small>(or other literature elective)</small>	3	ENGLISH 1211 or ENGLISH 1221 or ENGLISH 1231	British Literature I: The Beginnings to 1800 or American Literature: 1600 to 1865 or World Literature I <small>(or other literature elective)</small>	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	12		Group 2 Major Requirements	12
	Group 1 Core Requirements	36		Group 1 Core Requirements	31
	Total Hours	48		Total Hours*	43

*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

Metallurgical Engineering Group 2 Major Requirements					
<u>Three Rivers College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENGL 112 or SCOM 110	English Composition II or Public Speaking	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
HIST 122 or HIST 111 or HIST 112 or GOVT 121	World Civilization since the Renaissance or American History to 1877 or American History since 1877 or National and State 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 122	General Chemistry II	5	CHEM 1320,1510*	General Chemistry II (3) and Qualitative Analysis* (2) *Note: CHEM 1510 is not an S&T degree requirement; course transfers as elective credit.	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	5		Maximum Free Electives	5
	Group 2 Major Requirements	22		Group 2 Major Requirements	20
	Group 1 Core Requirements	36		Group 1 Core Requirements	31
	Total Hours	58		Total Hours*	51

*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

Mining Engineering Group 2 Major Requirements					
<u>Three Rivers College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENGL 112	English Composition II	3	ENGLISH 1160	Writing and Research	3
HIST 122 or HIST 111 or HIST 112 or GOVT 121	World Civilization since the Renaissance or American History to 1877 or American History since 1877 or National and State 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
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	12		Group 2 Major Requirements	12
	Group 1 Core Requirements	36		Group 1 Core Requirements	31
	Total Hours	48		Total Hours*	43

*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>Three Rivers College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENGL 112	English Composition II	3	ENGLISH 1160	Writing and Research	3
HIST 122 or	World Civilization since the Renaissance or		HISTORY 1200 or	Modern Western Civilization or	
HIST 111 or	American History to 1877 or		HISTORY 1300 or	American History to 1877 or	
HIST 112 or	American History since 1877 or	3	HISTORY 1310 or	American History Since 1877 or	3
GOVT 121	National and State Government		POL SCI 1200	American Government	
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	6		Maximum Free Electives	6
	Group 2 Major Requirements	18		Group 2 Major Requirements	18
	Group 1 Core Requirements	36		Group 1 Core Requirements	31
	Total Hours	54		Total Hours*	49

*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>Three Rivers College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENGL 112	English Composition II	3	ENGLISH 1160	Writing and Research	3
HIST 122 or	World Civilization since the Renaissance or		HISTORY 1200 or	Modern Western Civilization or	
HIST 111 or	American History to 1877 or		HISTORY 1300 or	American History to 1877 or	
HIST 112 or	American History since 1877 or	3	HISTORY 1310 or	American History Since 1877 or	3
GOVT 121	National and State Government		POL SCI 1200	American Government	
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	12		Group 2 Major Requirements	12
	Group 1 Core Requirements	36		Group 1 Core Requirements	31
	Total Hours	48		Total Hours*	43

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