

Missouri State University — 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>Partner School</u>		<u>Semester</u>	<u>Missouri S&T</u>	
MTH 261	Analytic Geometry and Calculus I	5	MATH 1214	Calculus for Engineers I Grade of C or better is required. 4
MTH 280	Analytic Geometry and Calculus II	5	MATH 1215	Calculus for Engineers II Grade of C or better is required. 4
MTH 302	Multivariate Calculus	3	MATH 2222	Calculus with Analytic Geometry III Grade of C or better is required. 4
MTH 303	Differential Equations	3	MATH 3304	Elementary Differential Equations 3
PHY 203	Foundations of Physics I	5	PHYSICS 1135	Engineering Physics I Grade of C or better is required. 4
PHY 204	Foundations of Physics II	5	PHYSICS 2135	Engineering Physics II Grade of C or better is required. 4
CHM 160, 161	General Chemistry I and Lab	5	CHEM 1310, 1319	General Chemistry I and Lab 5
EGR 110	Study and Careers in Engineering	1	FR ENG 1100	Study and Careers in Engineering 1
TCM 110	Industrial Design with Computer Applications	3	MECH ENG 1720	Engineering Design with Computer Appl 3
ENG 110	Writing I	3	ENGLISH 1120	Exposition and Argumentation 3
ECO 165 or ECO 155	Principles of Microeconomics or Macroeconomics	3	ECON 1100 or ECON 1200	Principles of Microeconomics or Principles of Macroeconomics 3
Total Hours		41	Total Hours 38	

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>Partner School</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HST 121 or HST 122 or HST 102 or PLS 101 ENG 210 or ENG 310 or COM 115 or ENG 221 or ENG 321 CSC 125 PHY 252 PHY 233 MTH 533 or MTH 345	History of US to 1877 or History of US 1877-Present or Western Civilization II or American Democracy & Citizenship Writing II: Academic Writing or Writing II: Writing for Graduate and Professional Schools or Fundamentals of Public Speaking or Writing II: Writing for the Professions or Beginning Technical Writing Intro to C++ Programming Intro to Circuit Analysis Statics Linear Algebra or Scientists and Engineers	3 3 4 3 3 3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200 ENGLISH 1160 or SPMS 1185 or ENGLISH 3560 COMP SCI 1570, 1580 ELEC ENG 2800 CIV ENG 2200 MATH 3108 or STAT 3115	American History to 1877 or American History since 1877 or Modern Western Civilization or American Government Writing and Research or Principles of Speech or Technical Writing Intro to Programming and Lab (C++) Circuit Analysis I Engineering Mechanics-Statics Linear Algebra I or Engineering Statistics (Will satisfy the Advanced Math/Comp Sci elective requirement.) Literature Elective Ethics Elective Maximum Free Electives	 3 3 3 3 3 3 3 0 24 38 62
<i>See your advisor for course options.</i>					3
<i>See your advisor for course options.</i>					3
<i>No free electives applied to the degree.</i>					0
Group 2 Major Requirements		19	Group 2 Major Requirements		24
Group 1 Core Requirements		41	Group 1 Core Requirements		38
Total Hours		60	Total Hours*		62

See advisor permission is required to transfer more than 60 credits toward the S&T Aerospace Engineering degree.

Architectural Engineering Group 2 Major Requirements

<u>Partner School</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HST 121 or HST 122 or HST 102 PHY 233 PHY 333 GRY 275 MTH 345 ENG 210 or ENG 310 or COM 115 GLG 332 or AST 114 or PHY 375	History of US to 1877 or History of US 1877-Present or Western Civilization II Statics Intermediate Mechanics Intro / Plane Survey Statistics for Scientists and Engineers Writing II: Academic Writing or Writing II: Writing for Graduate and Professional Schools or Fundamentals of Public Speaking or <i>See your advisor for course options.</i> Mineralogy Surv of Astronomy Modern Physics	3 3 3 3 3 3 4	HISTORY 1200* (or HISTORY 1300 or HISTORY 1310) CIV ENG 2200 MECH ENG 2350 CIV ENG 2401 STAT 3115 ENGLISH 1160 or SPMS 1185 or HSS Elective GEOLOGY 2610 or PHYSICS 1505 or PHYSICS 2305	Modern Western Civilization* (or American History to 1877 or American History since 1877) *HISTORY 1200 is preferred; 1300 or 1310 will also be accepted. Engineering Mechanics-Statics Engineering Mechanics-Dynamics Fundamentals of Surveying Engineering Statistics (Will be substituted for STAT 3113.) Writing and Research or Public Speaking or Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language mineralogy and crystallography or Introductory Astronomy or Intro to Modern Physics (or other chemistry, geology, biology, physics, or astronomy course that is not otherwise required for the degree) Applies to the degree as a basic science elective Maximum Free Electives	 3 3 3 3 3 3 0 21 38 59
<i>No free electives applied to the degree.</i>					0
Group 2 Major Requirements		22	Group 2 Major Requirements		21
Group 1 Core Requirements		41	Group 1 Core Requirements		38
Total Hours		63	Total Hours*		59

See advisor permission is required to transfer more than 60 credits toward the S&T Architectural Engineering degree.

Ceramic Engineering Group 2 Major Requirements

<u>Partner School</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HST 121 or HST 122 or HST 102 or PLS 101 PHY 233	History of US to 1877 or History of US 1877-Present or Western Civilization II or American Democracy & Citizenship Statics	3 3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200 CIV ENG 2200	American History to 1877 or American History since 1877 or Modern Western Civilization or American Government Engineering Mechanics-Statics	 3 3
CHM 342	Organic Chemistry I	5	CHEM 2210/2219	Organic Chemistry I and Lab (Not a specific requirement. Will satisfy technical elective requirement.)	5
CHM 170	General Chemistry II	3	CHEM 1320	General Chemistry II	3
MTH 345	Statistics for Scientists and Engineers	3	STAT 3115	Engineering Statistics	3
	<i>See your advisor for course options.</i>		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 Humanities/Social Science Elective	 3 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	17		Group 2 Major Requirements	23
	Group 1 Core Requirements	41		Group 1 Core Requirements	38
	Total Hours	58		Total Hours*	61

*S&T advisor permission is required to transfer more than 6 credits toward the S&T Ceramic Engineering degree.

Chemical Engineering Group 2 Major Requirements

<u>Partner School</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 210 or ENG 310 or ENG 221 or ENG 321 HST 121 or HST 122 or HST 102 or PLS 101 CHM 170 CHM 342 CHM 343 CSC 125 MTH 345	Writing II: Academic Writing or Writing II: Writing for Graduate and Professional Schools or Writing II: Writing for the Professions or Beginning Technical Writing History of US to 1877 or History of US 1877-Present or Western Civilization II or American Democracy & Citizenship General Chemistry II Organic Chemistry I Organic Chemistry II Intro to C++ Programming Statistics for Scientists and Engineers	3 3 3 3 3 4 3	ENGLISH 1160 or ENGLISH 3560 HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200 CHEM 1320 CHEM 2210 CHEM 2220 COMP SCI 1570, 1580 STAT 3115	Writing and Research or Technical Writing American History to 1877 or American History since 1877 or Modern Western Civilization or American Government General Chemistry II Organic Chemistry I Organic Chemistry II (Will satisfy science elective requirement.) Intro to Programming and Lab (C++) Engineering Statistics (Will be substituted for STAT 3113.) Humanities/Social Science Elective Humanities/Social Science Elective Maximum Free Electives	 3 3 5 3 3 3 3 3 3 0
	<i>See your advisor for course options.</i>			Group 2 Major Requirements	29
	<i>See your advisor for course options.</i>			Group 1 Core Requirements	38
	<i>No free electives applied to the degree.</i>				
	Group 2 Major Requirements	26		Group 2 Major Requirements	29
	Group 1 Core Requirements	41		Group 1 Core Requirements	38
	Total Hours	67		Total Hours*	67

*S&T advisor permission is required to transfer more than 6 credits toward the S&T Chemical Engineering degree.

Chemical Engineering - Biochemical Engineering Emphasis Group 2 Major Requirements

<u>Partner School</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 210 or ENG 310 or ENG 221 or ENG 321 HST 121 or HST 122 or HST 102 or PLS 101 CHM 170 CHM 342 CHM 343 CSC 125 MTH 345	Writing II: Academic Writing or Writing II: Writing for Graduate and Professional Schools or Writing II: Writing for the Professions or Beginning Technical Writing History of US to 1877 or History of US 1877-Present or Western Civilization II or American Democracy & Citizenship General Chemistry II Organic Chemistry I Organic Chemistry II Intro to C++ Programming Statistics for Scientists and Engineers	3 3 3 3 3 4 3	ENGLISH 1160 or ENGLISH 3560 HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200 CHEM 1320 CHEM 2210 CHEM 2220 COMP SCI 1570, 1580 STAT 3115	Writing and Research or Technical Writing American History to 1877 or American History since 1877 or Modern Western Civilization or American Government General Chemistry II Organic Chemistry I Organic Chemistry II (Will satisfy science elective requirement.) Intro to Programming and Lab (C++) Engineering Statistics (Will be substituted for STAT 3113.) Humanities/Social Science Elective Humanities/Social Science Elective Maximum Free Electives	 3 3 5 3 3 3 3 3 0
	<i>See your advisor for course options.</i>			Group 2 Major Requirements	29
	<i>See your advisor for course options.</i>			Group 1 Core Requirements	38
	<i>No free electives applied to the degree.</i>				
	Group 2 Major Requirements	26		Group 2 Major Requirements	29
	Group 1 Core Requirements	41		Group 1 Core Requirements	38
	Total Hours	67		Total Hours*	67

*S&T advisor permission is required to transfer more than 7 credits toward the S&T Chemical/Biochemical Engineering degree.

Civil Engineering Group 2 Major Requirements

Partner School		Semester	Missouri S&T		
ENG 210 or ENG 310 or COM 115 or ENG 221 or ENG 321	Writing II: Academic Writing or Writing II: Writing for Graduate and Professional Schools or Fundamentals of Public Speaking or Writing II: Writing for the Professions or Beginning Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Public Speaking or Technical Writing	3
HST 121 or HST 122 or HST 102 or PLS 101 GLG 110	History of US to 1877 or History of US 1877-Present or Western Civilization II or American Democracy & Citizenship Principles of Geology	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200 GEO 1111/GE 1150	American History to 1877 or American History since 1877 or Modern Western Civilization or American Government Intro to Physical Geology	3
PHY 233	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 333	Intermediate Mechanics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	3
GRY 275	Intro / Plane Survey	3	CIV ENG 2401	Fundamentals of Surveying	3
MTH 345	Statistics for Scientists and Engineers	3	STAT 3115	Engineering Statistics (Will be substituted for STAT 3113.)	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		22	Group 2 Major Requirements		24
Group 1 Core Requirements		41	Group 1 Core Requirements		38
Total Hours		63	Total Hours*		62

*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

Partner School		Semester	Missouri S&T		
COM 115	Fundamentals of Public Speaking	3	SPMS 1185	Public Speaking	3
ENG 210 or ENG 310 or ENG 221 or ENG 321	Writing II: Academic Writing or Writing II: Writing for Graduate and Professional Schools or Writing II: Writing for the Professions or Beginning Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HST 121 or HST 122 or HST 102 or PLS 101	History of US to 1877 or History of US 1877-Present or Western Civilization II or American Democracy & Citizenship	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
CSC 324	Discrete Structure	3	COMP SCI 1200	Discrete Math for Computer Science	3
CSC 125	Intro to C++ Programming	4	COMP SCI 1570, 1580	Intro to Programming and Lab (C++)	3
CSC 132	Intro to Computer Science II	4	COMP SCI 1575	Data Structures	3
PHY 233 or PHY 333	Statics and Intermediate Mechanics	6	CIV ENG 2200 and MECH ENG 2350	Engineering Mechanics-Statics and Engineering Mechanics-Dynamics (Both courses combined will satisfy a required engineering science elective.)	6
PHY 252	Intro to Circuit Analysis	3	ELEC ENG 2100**	Circuits I **A passing grade on the Missouri S&T EE Advancement Exam I is required to receive credit for EE 2100.	3
MTH 533	Linear Algebra	3	MATH 3108	Linear Algebra (Will satisfy a required math elective.)	3
MTH 345	Statistics for Scientists and Engineers	3	STAT 3115	Engineering Statistics (Will be substituted for STAT 3117.)	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		35	Group 2 Major Requirements		39
Group 1 Core Requirements		41	Group 1 Core Requirements		38
Total Hours		76	Total Hours*		77

*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

Partner School		Semester	Missouri S&T		
COM 115	Fundamentals of Public Speaking	3	SPMS 1185	Public Speaking	3
ENG 210 or ENG 310 or ENG 221 or ENG 321	Writing II: Academic Writing or Writing II: Writing for Graduate and Professional Schools or Writing II: Writing for the Professions or Beginning Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HST 121 or HST 122 or HST 102 or PLS 101	History of US to 1877 or History of US 1877-Present or Western Civilization II or American Democracy & Citizenship	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
CSC 125	Intro to C++ Programming	4	COMP SCI 1570, 1580	Intro to Programming and Lab (C++)	3
PHY 233 or PHY 333	Statics and Intermediate Mechanics	6	CIV ENG 2200 and MECH ENG 2350	Engineering Mechanics-Statics and Engineering Mechanics-Dynamics (Both courses combined will satisfy a required engineering science elective.)	6
PHY 252	Intro to Circuit Analysis	3	ELEC ENG 2100**	Circuits I **A passing grade on the Missouri S&T EE Advancement Exam I is required to receive credit for EE 2100.	3
MTH 533	Linear Algebra	3	MATH 3108	Linear Algebra	3
MTH 345	Statistics for Scientists and Engineers	3	STAT 3115	Engineering Statistics (Will be substituted for STAT 3117.)	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		28	Group 2 Major Requirements		33
Group 1 Core Requirements		41	Group 1 Core Requirements		38
Total Hours		69	Total Hours*		71

*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>Partner School</u>		<u>Semester</u>	<u>Missouri S&T</u>		
PYS 121	Intro Psychology	3	PSYCH 1101	General Psychology	3
HST 121 or	History of US to 1877 or		HISTORY 1300 or	American History to 1877 or	
HST 122 or	History of US 1877-Present or	3	HISTORY 1310 or	American History since 1877 or	3
HST 102 or	Western Civilization II or		HISTORY 1200 or	Modern Western Civilization or	
PLS 101	American Democracy & Citizenship		POL SCI 1200	American Government	
ENG 210 or	Writing II: Academic Writing or				
ENG 310 or	Writing II: Writing for Graduate and Professional Schools or		ENGLISH 1160 or	Writing and Research or	
COM 115 or	Fundamentals of Public Speaking or	3	SPMS 1185 or	Principles of Speech or	3
ENG 221 or	Writing II: Writing for the Professions or		ENGLISH 3560	Technical Writing	
ENG 321	Beginning Technical Writing				
PHY 252	Intro to Circuit Analysis	3	ELEC ENG 2800	Circuit Analysis I	3
PHY 233	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 333	Intermediate Mechanics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	3
MTH 345	Statistics for Scientists and Engineers	3	STAT 3115	Engineering Statistics	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	38
	Total Hours	62		Total Hours*	65

*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>Partner School</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 210 or	Writing II: Academic Writing or		ENGLISH 1160 or	Writing and Research or	
ENG 310 or	Writing II: Writing for Graduate and Professional Schools or		SPMS 1185 or	Public Speaking or	3
COM 115 or	Fundamentals of Public Speaking or	3	ENGLISH 3560	Technical Writing	
ENG 221 or	Writing II: Writing for the Professions or				
ENG 321	Beginning Technical Writing		HISTORY 1300 or	American History to 1877 (preferred) or	
HST 121 or	History of US to 1877 or		HISTORY 1310 or	American History since 1877 (preferred) or	3
HST 122 or	History of US 1877-Present or	3	HISTORY 1200	Modern Western Civilization	
HST 102	Western Civilization II		GEO 1111/GE 1150	Intro to Physical Geology	3
GLG 110	Principles of Geology	4	CHEM 1320	General Chemistry II	3
CHM 170	General Chemistry II	3	BIO SCI 1113	General Biology	4
BIO 121	General Biology I	4	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 233	Statics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	3
PHY 333	Intermediate Mechanics	3	STAT 3115	Engineering Statistics (Will be substituted for STAT 3113.)	3
MTH 345	Statistics for Scientists and Engineers	3		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	28
	Group 2 Major Requirements	26		Group 1 Core Requirements	38
	Group 1 Core Requirements	41		Total Hours*	66
	Total Hours	67			

*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>Partner School</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 210 or	Writing II: Academic Writing or		ENGLISH 1160 or	Writing and Research or	
ENG 310 or	Writing II: Writing for Graduate and Professional Schools or		SPMS 1185 or	Public Speaking or	3
COM 115 or	Fundamentals of Public Speaking or	3	ENGLISH 3560	Technical Writing	
ENG 221 or	Writing II: Writing for the Professions or				
ENG 321	Beginning Technical Writing		HISTORY 1300 or	American History to 1877 or	
HST 121 or	History of US to 1877 or		HISTORY 1310 or	American History since 1877 or	
HST 122 or	History of US 1877-Present or	3	HISTORY 1200 or	Modern Western Civilization or	3
HST 102 or	Western Civilization II or		POL SCI 1200	American Government	
PLS 101	American Democracy & Citizenship		GEO 1110/GE 1150	Physical and Environmental Geology	3
GLG 110	Principles of Geology	4	GEO 1119/GE 1119	Physical and Environmental Geology Lab	1
			CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 233	Statics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	3
PHY 333	Intermediate Mechanics	3	BIO SCI 1113 or	General Biology or	
BIO 121 or	General Biology I or		CHEM 1320 or	General Chemistry II or	
CHM 170 or	General Chemistry II or	3	CHEM 2210	Organic Chemistry I	
CHM 342	Organic Chemistry I			Humanities/Social Science Elective	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	0
	<i>No free electives applied to the degree.</i>			Group 2 Major Requirements	22
	Group 2 Major Requirements	19		Group 1 Core Requirements	38
	Group 1 Core Requirements	41		Total Hours*	60
	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>Partner School</u>		<u>Semester</u>	<u>Missouri S&T</u>	
HST 121 or HST 122 or HST 102 or PLS 101 ENG 210 or ENG 310 or COM 115 or ENG 221 or ENG 321	History of US to 1877 or History of US 1877-Present or Western Civilization II or American Democracy & Citizenship Writing II: Academic Writing or Writing II: Writing for Graduate and Professional Schools or Fundamentals of Public Speaking or Writing II: Writing for the Professions or Beginning Technical Writing	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
CSC 125 PHY 252 PHY 233 MTH 533 or MTH 345	Intro to C++ Programming Intro to Circuit Analysis Statics Linear Algebra or Statistics for Scientists and Engineers	4 3 3 3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing
			COMP SCI 1570, 1580 ELEC ENG 2800 CIV ENG 2200 MATH 3108 or STAT 3115	Intro to Programming and Lab (C++) Circuit Analysis I Engineering Mechanics-Statics Linear Algebra I or Engineering Statistics (Will satisfy the Advanced Math/Comp Sci elective requirement.)
	<i>See your advisor for course options. No free electives applied to the degree.</i>			Literature Elective Humanities/Social Science Elective Maximum Free Electives
	Group 2 Major Requirements Group 1 Core Requirements	9 41		Group 2 Major Requirements Group 1 Core Requirements
	Total Hours	50		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>Partner School</u>		<u>Semester</u>	<u>Missouri S&T</u>	
ENG 210 or ENG 310 or COM 115 or ENG 221 or ENG 321	Writing II: Academic Writing or Writing II: Writing for Graduate and Professional Schools or Fundamentals of Public Speaking or Writing II: Writing for the Professions or Beginning Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Public Speaking or Technical Writing
HST 121 or HST 122 or HST 102 or PLS 101 PHY 233 MTH 345 CHM 170 CHM 342 or PHY 252	History of US to 1877 or History of US 1877-Present or Western Civilization II or American Democracy & Citizenship Statics Statistics for Scientists and Engineers General Chemistry II Organic Chemistry I or Intro to Circuit Analysis	3 3 3 3 3 3 3 3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200 CIV ENG 2200 STAT 3115 CHEM 1320 CHEM 2210 or ELEC ENG 2800	American History to 1877 or American History since 1877 or Modern Western Civilization or American Government Engineering Mechanics-Statics Engineering Statistics General Chemistry II Organic Chemistry I or Electrical Circuits
	<i>See your advisor for course options.</i>			Not specifically required for the degree but will satisfy Out-of-Department Technical Elective Requirement Humanities/Social Science Elective
	<i>See your advisor for course options.</i>			Humanities/Social Science Elective
	<i>See your advisor for course options.</i>			Maximum Free Electives
	Group 2 Major Requirements Group 1 Core Requirements	18 41		Group 2 Major Requirements Group 1 Core Requirements
	Total Hours	59		Total Hours* 67

*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>Partner School</u>	<u>Semester</u>	<u>Missouri S&T</u>		
ENG 210 or ENG 310 or ENG 221 or ENG 321 HST 121 or HST 122 or HST 102 or PLS 101	Writing II: Academic Writing or Writing II: Writing for Graduate and Professional Schools or Writing II: Writing for the Professions or Beginning Technical Writing History of US to 1877 or History of US 1877-Present or Western Civilization II or American Democracy & Citizenship	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
MTH 345 PHY 233 PHY 333	Statistics for Scientists and Engineers Statics Intermediate Mechanics	3 3 3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200 STAT 3115 CIV ENG 2200*	American History to 1877 or American History since 1877 or Modern Western Civilization or American Government Engineering Statistics Engineering Mechanics-Statics	3 3 3
GLG 110	Principles of Geology <i>See your advisor for course options.</i> <i>See your advisor for course options.</i> <i>No free electives applied to the degree.</i>	4	MECH ENG 2350* GEO 1111/GE 1150	Engineering Mechanics-Dynamics Intro to Physical Geology	3 3
				Humanities/Social Science Elective Humanities/Social Science Elective Maximum Free Electives	3 3 0
	Group 2 Major Requirements Group 1 Core Requirements	19 41		Group 2 Major Requirements Group 1 Core Requirements	24 38
	Total Hours	60		Total Hours*	62

*The combination of CIV ENG 2200 and MECH ENG 2350 will be substituted for MECH ENG 2340.
*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>Partner School</u>	<u>Semester</u>	<u>Missouri S&T</u>		
ENG 210 or ENG 310 or ENG 221 or ENG 321 HST 121 or HST 122 or HST 102 or PLS 101	Writing II: Academic Writing or Writing II: Writing for Graduate and Professional Schools or Writing II: Writing for the Professions or Beginning Technical Writing History of US to 1877 or History of US 1877-Present or Western Civilization II or American Democracy & Citizenship	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
CSC 125 PHY 233 MTH 345	Intro to C++ Programming Statics Statistics for Scientists and Engineers <i>See your advisor for course options.</i> <i>See your advisor for course options.</i> <i>See your advisor for course options.</i>	4 3 3	COMP SCI 1570, 1580 CIV ENG 2200 STAT 3115	Intro to Programming and Lab (C++) Engineering Mechanics-Statics Engineering Statistics	3 3 3
				Humanities/Social Science Elective Humanities/Social Science Elective Maximum Free Electives	3 3 6
	Group 2 Major Requirements Group 1 Core Requirements	16 41		Group 2 Major Requirements Group 1 Core Requirements	27 38
	Total Hours	57		Total Hours*	65

*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>Partner School</u>	<u>Semester</u>	<u>Missouri S&T</u>		
ENG 210 or ENG 310 or ENG 221 or ENG 321 HST 121 or HST 122 or HST 102 or PLS 101	Writing II: Academic Writing or Writing II: Writing for Graduate and Professional Schools or Writing II: Writing for the Professions or Beginning Technical Writing History of US to 1877 or History of US 1877-Present or Western Civilization II or American Democracy & Citizenship	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
GLG 110 PHY 233 PHY 333 MTH 345	Principles of Geology Statics Intermediate Mechanics Statistics for Scientists and Engineers <i>See your advisor for course options.</i> <i>See your advisor for course options.</i> <i>No free electives applied to the degree.</i>	4 3 3 3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200 GEO 1110/GE 1150 GEO ENG 1119 CIV ENG 2200 MECH ENG 2350 STAT 3115	American History to 1877 or American History since 1877 or Modern Western Civilization or American Government Physical and Environmental Geology Physical and Environmental Geology Lab Engineering Mechanics-Statics Engineering Mechanics-Dynamics Engineering Statistics	3 1 3 3 3 3
				Humanities/Social Science Elective Humanities/Social Science Elective Maximum Free Electives	3 3 0
	Group 2 Major Requirements Group 1 Core Requirements	13 41		Group 2 Major Requirements Group 1 Core Requirements	19 38
	Total Hours	54		Total Hours*	57

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