

Southeast Missouri State University — Missouri S&T

General Engineering

Transfer Guide Effective as of Fall 2024

Complete Group 1 - Core Requirements and Group 2 - Major Requirements for major of choice.

Group 1 - Core Requirements: All Majors Take All Courses

Engineering students take all Group 1 - Core Requirements and Group 2 - Major Requirements for major of choice. Math prerequisites: While they are not part of Missouri S&T engineering degree requirements, algebra and trigonometry skills are critical to success in calculus. To prepare for entry into calculus, students should follow math placement testing and advising recommendations at their college.

<u>Southeast Missouri State University</u>		<u>Semester</u>	<u>Missouri S&T</u>	
MA 140	Analytic Geometry & Calculus I	5	MATH 1214	Calculus I Grade of C or better is required.
MA 145	Analytic Geometry & Calculus II	5	MATH 1215	Calculus II Grade of C or better is required.
MA 244	Analytic Geometry & Calculus III	4	MATH 2222	Calculus III Grade of C or better is required.
MA 350	Differential Equations I	3	MATH 3304	Elementary Differential Equations
PH 230	General Physics I	5	PHYSICS 1135	Engineering Physics I Grade of C or better is required.
PH 231	General Physics II	5	PHYSICS 2135	Engineering Physics II Grade of C or better is required.
CH 185	General Chemistry	5	CHEM 1310, 1319	General Chemistry I and Lab
EP 100	Intro to Engineering	3	FR ENG 1100	Study and Careers in Engineering and Computing
EN 100	English Composition	3	ENGLISH 1120	Exposition and Argumentation
EC 215 or	Principles of Microeconomics or		ECON 1100 or	Principles of Microeconomics or
EC 225	Principles of Macroeconomics	3	ECON 1200	Principles of Macroeconomics
Total Hours		41	Total Hours	
			35	

Group 2 - Major Requirements: Take All Courses for Major of Choice

Engineering students take all Group 1 - Core Requirements (above) and Group 2 - Major Requirements for chosen major from list below. See course requirements on following pages.

Aerospace Engineering
Architectural Engineering
Biomedical Engineering/Biomaterials or Biomaterials
Ceramic Engineering
Chemical Engineering and Biochemistry Emphasis
Civil Engineering
Computer Engineering
Electrical Engineering

Engineering Management
Environmental Engineering
Geological Engineering
Mechanical Engineering
Metallurgical Engineering
Mining Engineering
Nuclear Engineering
Petroleum Engineering

Engineering Major Requirements are detailed on the following pages.

Free Electives: Some programs allow Free Electives as indicated within each major. Free Electives should be selected in consultation with your advisor and may not include remedial/deficiency courses, algebra, trigonometry, pre-calculus, or extra credits in required courses.

Humanities/Social Science (HSS) Electives: HSS electives may include any art, English and technical communication, etymology, foreign language, music, philosophy, speech and media studies, or theatre. Your campus may have additional acceptable options. Consult with your advisor or email transfer@mst.edu with questions. See Missouri S&T online catalog at <https://catalog.mst.edu/undergraduate/degreeprogramsandcourses/> for more information.

Aerospace Engineering Group 2 Major Requirements

<u>Southeast Missouri State University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
MN 120	Fundamentals of Engineering Design Processes	3	MECH ENG 1720	Intro to Engineering Design	3
EH 103 or US 105 or US 107 or PS 103	Modern European Civilization or American History I or American History II or US Political Systems	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
EN 140 or SC 105 or EN 309 or IM 300	Rhetoric and Critical Thinking or Fundamentals of Oral Communication or Writing for Science and Technology or Technical Communication	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
CS 155	Computer Science I	4	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
EP 240	Circuit Analysis I	3	EE 2800	Electrical Circuits	3
EP 261	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EP 263	Mechanics of Materials	4	CIV ENG 2210	Mechanics of Materials	3
MA 345	Linear Algebra	3	MATH 3108	Linear Algebra I <small>Will satisfy the Advanced Math/Comp Sci elective requirement.</small>	3
	Literature Elective	3		Literature Elective	3
PL 204	Ethical Theory <small>or other engineering, business, bio, social ethics approved by advisor</small>	3	PHILOS 1130	How Should I Live? An Introduction to Ethics <small>or other engineering, business, bio, social ethics approved by advisor</small>	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	32		Group 2 Major Requirements	30
	Group 1 Core Requirements	41		Group 1 Core Requirements	35
	Total Hours	73		Total Hours*	65

*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>Southeast Missouri State University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
MN 120	Fundamentals of Engineering Design Processes	3	MECH ENG 1720	Intro to Engineering Design	3
EH 103 (or US 105 or US 107)	Modern European Civilization (or American History I or American History II) <small>*EH 103 is preferred; US 105 or 107 will also be accepted.</small>	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
EP 261	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EP 262	Engineering Mechanics Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
EP 263	Mechanics of Materials	4	CIV ENG 2210,2211	Mechanics of Materials and Materials Testing	4
CM 226	Residential Architectural Drafting and Design	3	ART 3203	Architectural Design I	3
GO 110	Physical Geology	3	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
Humanities or Social Science or Communication	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language or one communication course from this list: EN 140, EN 309, IM 300, or SC 105	3	Humanities or Social Science or Communication	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language or one communication course from this list: ENGLISH 1160, 1600, 3560 or SPMS 1185.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	25		Group 2 Major Requirements	24
	Group 1 Core Requirements	41		Group 1 Core Requirements	35
	Total Hours	66		Total Hours*	59

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

Biomedical Engineering-Biomanufacturing Group 2 Major Requirements

<u>Southeast Missouri State University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
SC 105	Fundamentals of Oral Communication	3	SP&MS 1185	Principles of Speech	3
EN 309 or IM 300	Writing for Science and Technology or Technical Communication	3	ENGLISH 3560	Technical Writing	3
EH 103 or US 105 or US 107 or PS 103	Modern European Civilization or American History I or American History II or US Political Systems	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
CH 186	General Chemistry II	3	CHEM 1320	General Chemistry II	3
CH 341, 342	Foundations of Organic Chemistry (4) and Lab (1)	5	CHEM 2210, 2219	Organic Chemistry I and Lab	4
CH 343, 344 or BS 218 or BI 283	Advanced Organic Chemistry (3) and Lab (2) or Biological Science: A Process Approach MOTR BIOL 100L OR Genetics (4)	5	CHEM 2220, 2229 or BIO SCI 1113, 1219 or BIO SCI 2223	Organic Chemistry II and Lab or General Biology and Lab MOTR BIOL 100L OR General Genetics	4
BS 113	Anatomy and Physiology I	4	BIO SCI 3333, 3339	Anatomy and Physiology I and Lab	4
CS 101 or CS 265 or CS 300 or CS 351 or CS 155*	Intro to Computer Programming or Computer Science II or Computer Science III or or C and the Posix Environment or Computer Science I*	3	CS 1500 or CS 1971,1981*	Computational Problem Solving or Intro to Programming Methodology and Lab* C++ <small>*Will be substituted for CS 1500.</small>	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	32		Group 2 Major Requirements	30
	Group 1 Core Requirements	41		Group 1 Core Requirements	35
	Total Hours	73		Total Hours*	65

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

Biomedical Engineering-Biomaterials Group 2 Major Requirements

<u>Southeast Missouri State University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
SC 105	Fundamentals of Oral Communication	3	SP&MS 1185	Principles of Speech	3
EN 309 or IM 300	Writing for Science and Technology or Technical Communication	3	ENGLISH 3560	Technical Writing	3
EH 103 or US 105 or US 107 or PS 103	Modern European Civilization or American History I or American History II or US Political Systems	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
CH 186	General Chemistry II	3	CHEM 1320	General Chemistry II	3
CH 341, 342	Foundations of Organic Chemistry (4) and Lab (1)	5	CHEM 2210, 2219*	Organic Chemistry I and Lab* <small>*CHEM 2219 Lab applies to the degree as a Track Elective (non-engineering).</small>	4
CH 343, 344	Advanced Organic Chemistry (3) and Lab (2) or	5	CHEM 2220, 2229*	Organic Chemistry II and Lab* <small>CHEM 2229 Lab applies to the degree as a Track Elective (non-engineering).</small>	4
BS 218	Biological Science: A Process Approach MOTR BIOL 100L	4	BIO SCI 1113*, 1219*	General General Biology* and Lab* MOTR BIOL 100L <small>*Applies to degree as Track Elective (Non-engineering).</small>	4
BS 113	Anatomy and Physiology I	4	BIO SCI 3333, 3339	Human Anatomy and Physiology I and Lab	4
CS 101 or CS 265 or CS 300 or CS 351 or CS 155*	Intro to Computer Programming or Computer Science II or Computer Science III or or C and the Posix Environment or Computer Science I*	3	CS 1500 or CS 1971,1981*	Computational Problem Solving or Intro to Programming Methodology and Lab* C++ <small>*Will be substituted for CS 1500.</small>	3
EP 261	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EP 240	Circuit Analysis I	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. Applies to the degree as a Track Elective (Engineering).</small>	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	35		Group 2 Major Requirements	37
	Group 1 Core Requirements	41		Group 1 Core Requirements	35
	Total Hours	76		Total Hours*	72

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

Ceramic Engineering Group 2 Major Requirements

<u>Southeast Missouri State University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
MN 120	Fundamentals of Engineering Design Processes	3	MECH ENG 1720	Intro to Engineering Design	3
EH 103 or US 105 or US 107 or PS 103	Modern European Civilization or American History I or American History II or US Political Systems	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
EP 261	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EP 263	Mechanics of Materials	4	CIV ENG 2210	Mechanics of Materials	3
CH 341	Foundations of Organic Chemistry	4	CHEM 2210	Organic Chemistry I (3) <small>Will satisfy the advanced chemistry elective requirement.</small>	3
CH 186	General Chemistry II	3	CHEM 1320	General Chemistry II	3
EN 140 or SC 105 or HSS Elective	Rhetoric and Critical Thinking or Fundamentals of Oral Communication 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 Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	29		Group 2 Major Requirements	27
	Group 1 Core Requirements	41		Group 1 Core Requirements	35
	Total Hours	70		Total Hours*	62

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

Chemical Engineering or Chemical Engineering - Biochemical Engineering Emphasis Group 2 Major Requirements

<u>Southeast Missouri State University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
MN 120	Fundamentals of Engineering Design Processes	3	MECH ENG 1720	Intro to Engineering Design	3
SC 105	Fundamentals of Oral Communication	3	SP&MS 1185	Principles of Speech	3
EN 309 or IM 300	Writing for Science and Technology or Technical Communication	3	ENGLISH 3560	Technical Writing	3
EH 103 or US 105 or US 107 or PS 103	Modern European Civilization or American History I or American History II or US Political Systems	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
CH 186	General Chemistry II	3	CHEM 1320	General Chemistry II	3
CH 341, 342	Fundamentals of Organic Chemistry and Lab	5	CHEM 2210, 2219*	Organic Chemistry I and Lab* <small>*The lab will apply to the degree as 1 of 9 required science elective credits .</small>	4
CH 343 or BI 200	Advanced Organic Chemistry (3) or General Microbiology (3) <small>Select up to 6 credits.</small>	6	CHEM 2220 or BIO SCI 3313	Organic Chemistry II (3) or Microbiology and Lab (3) <small>Select up to 6 credits. Will apply to the degree as 6 of 9 required science elective credits.</small>	6
CS 101 or CS 265 or CS 300 or CS 351 or CS 155*	Intro to Computer Programming or Computer Science II or Computer Science III or or C and the Posix Environment or Computer Science I*	3	CS 1500 or CS 1971,1981*	Computational Problem Solving or Intro to Programming Methodology and Lab* C++ <small>*Will be substituted for CS 1500.</small>	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	32		Group 2 Major Requirements	31
	Group 1 Core Requirements	41		Group 1 Core Requirements	35
	Total Hours	73		Total Hours*	66

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

Civil Engineering Group 2 Major Requirements

<u>Southeast Missouri State University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
MN 120	Fundamentals of Engineering Design Processes	3	MECH ENG 1720	Intro to Engineering Design	3
EN 140 or SC 105 or EN 309 or IM 300	Rhetoric and Critical Thinking or Fundamentals of Oral Communication or Writing for Science and Technology or Technical Communication	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
EH 103 or US 105 or US 107 or PS 103	Modern European Civilization or American History I or American History II or US Political Systems	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
GO 110	Physical Geology	3	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
EP 261	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EP 262	Engineering Mechanics-Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
EP 263	Mechanics of Materials	4	CIV ENG 2210, 2211	Mechanics of Materials and Materials Testing	4
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	25		Group 2 Major Requirements	24
	Group 1 Core Requirements	41		Group 1 Core Requirements	35
	Total Hours	66		Total Hours*	59

*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>Southeast Missouri State University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
SC 105	Fundamentals of Oral Communication	3	SPMS 1185	Principles of Speech	3
EN 140 or EN 309 or IM 300	Rhetoric and Critical Thinking or Writing for Science and Technology or Technical Communication	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
EH 103 or US 105 or US 107 or PS 103	Modern European Civilization or American History I or American History II or US Political Systems	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
CS 101 or CS 155 or CS 265 or CS 300 or CS 351	Intro to Computer Programming or Computer Science I or Computer Science II or Computer Science III or or C and the Posix Environment	3	CS 1500	Computational Problem Solving	3
EP 261 or EP 262 or CH 341 or BI 283	Engineering Mechanics-Statics (3) or Engineering Mechanics-Dynamics (3) or Fundamentals of Organic Chemistry (4) or Genetics (4)	4	CIV ENG 2200 or MECH ENG 2350 or CHEM 2210 or BIO SCI 2223	Engineering Mechanics-Statics (3) or Engineering Mechanics-Dynamics (2) or Organic Chemistry I (3) or General Genetics (3) <small>Satisfies a required engineering/science elective.</small>	3
EP 240	Circuit Analysis I	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
MA 345	Linear Algebra	3	MATH 3108	Linear Algebra <small>Will satisfy a required math elective.</small>	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Electives	Maximum Free Electives	3	Electives	Maximum Free Electives	3
	Group 2 Major Requirements	28		Group 2 Major Requirements	27
	Group 1 Core Requirements	41		Group 1 Core Requirements	35
	Total Hours	69		Total Hours*	62

*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>Southeast Missouri State University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
MN 120	Fundamentals of Engineering Design Processes	3	MECH ENG 1720	Intro to Engineering Design	3
SC 105	Fundamentals of Oral Communication	3	SPMS 1185	Principles of Speech	3
EN 140 or EN 309 or IM 300	Rhetoric and Critical Thinking or Writing for Science and Technology or Technical Communication	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
EH 103 or US 105 or US 107 or PS 103	Modern European Civilization or American History I or American History II or US Political Systems	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
CS 101 or CS 155 or CS 265 or CS 300 or CS 351	Intro to Computer Programming or Computer Science I or Computer Science II or Computer Science III or or C and the Posix Environment	3	CS 1500	Computational Problem Solving	3
EP 261 and EP 262 <small>BOTH of the courses above or ONE of the courses below.</small> OR CH 341 or BI 283	Engineering Mechanics-Statics (3) and Engineering Mechanics-Dynamics (3) <small>Both courses above combined or any one of the following courses will satisfy a required engineering science elective.</small> OR Fundamentals of Organic Chemistry (4) or Genetics (4)	4	CIV ENG 2200 and MECH ENG 2350 <small>BOTH of the courses above or ONE of the courses below.</small> OR CHEM 2210 or BIO SCI 2223	Engineering Mechanics-Statics (3) and Engineering Mechanics-Dynamics (3) <small>Both courses above combined or any one of the following courses will satisfy a required engineering science elective.</small> OR Organic Chemistry I (4) or General Genetics (3)	3
EP 240	Circuit Analysis I	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
MA 345	Linear Algebra	3	MATH 3108	Linear Algebra	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Electives	Maximum Free Electives	3	Electives	Maximum Free Electives	3
	Group 2 Major Requirements	31		Group 2 Major Requirements	30
	Group 1 Core Requirements	41		Group 1 Core Requirements	35
	Total Hours	72		Total Hours*	65

*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>Southeast Missouri State University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
MN 120	Fundamentals of Engineering Design Processes	3	MECH ENG 1720	Intro to Engineering Design	3
PY 101	Intro to Psychology	3	PSYCH 1101	General Psychology	3
EH 103 or US 105 or US 107 or PS 103	Modern European Civilization or American History I or American History II or US Political Systems	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
SC 105	Fundamentals of Oral Communication	3	SPMS 1185	Principles of Speech	3
EN 140 or EN 309 or IM 300	Rhetoric and Critical Thinking or Writing for Science and Technology or Technical Communication	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
CS 155	Computer Science I	5	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
EP 240	Circuit Analysis I	3	EE 2800	Electrical Circuits	3
EP 261	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EP 262	Engineering Mechanics-Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
EP 263	Mechanics of Materials	4	CIV ENG 2210	Mechanics of Materials	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	3	Electives	Maximum Free Electives	0
	Group 2 Major Requirements	39		Group 2 Major Requirements	32
	Group 1 Core Requirements	41		Group 1 Core Requirements	35
	Total Hours	80		Total Hours*	61

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

Environmental Engineering Group 2 Major Requirements

<u>Southeast Missouri State University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
MN 120	Fundamentals of Engineering Design Processes	3	MECH ENG 1720	Intro to Engineering Design	3
EN 140 or SC 105 or EN 309 or IM 300	Rhetoric and Critical Thinking or Fundamentals of Oral Communication or Writing for Science and Technology or Technical Communication	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
EH 103 or US 105 or US 107	Modern European Civilization or American History I or American History II	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310	Modern Western Civilization or American History to 1877 or American History since 1877	3
GO 110	Physical Geology	3	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
CH 186	General Chemistry II	3	CHEM 1320	General Chemistry II	3
BS 108 or BS 151 or BS 218	Biology for Living MOTR BIOL 100 OR Biological Reasoning MOTR BIOL 100 OR Biological Science: A Process Approach MOTR BIOL 100L	3	BIO SCI 1113 or BIO SCI 1113, 1219	General Biology (3) MOTR BIOL 100 OR General Biology (3) and Lab (1) MOTR BIOL 100L	3
EP 261	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EP 262	Engineering Mechanics-Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
EP 263	Mechanics of Materials	4	CIV ENG 2210, 2211	Mechanics of Materials and Materials Testing	4
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	31		Group 2 Major Requirements	30
	Group 1 Core Requirements	41		Group 1 Core Requirements	35
	Total Hours	72		Total Hours*	65

*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>Southeast Missouri State University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
MN 120	Fundamentals of Engineering Design Processes	3	MECH ENG 1720	Intro to Engineering Design	3
EN 309 or IM 300	Writing for Science and Technology or Technical Communication	3	ENGLISH 3560	Technical Writing	3
EH 103 or US 105 or US 107 or PS 103	Modern European Civilization or American History I or American History II or US Political Systems	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
CS 101 or CS 265 or CS 300 or CS 351 or CS 155	Intro to Computer Programming or Computer Science II or Computer Science III or C and the Posix Environment or Computer Science I	3	CS 1500 or CS 1971, 1981	Computational Problem Solving or Intro to Programming Methodology and Lab	3
GO 110	Physical Geology	3	GEO ENG 1150 (GEOLOGY 1110)	Physical and Environmental Geology	3
EP 261	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EP 262	Engineering Mechanics-Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
EP 263	Mechanics of Materials	4	CIV ENG 2210	Mechanics of Materials	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	31		Group 2 Major Requirements	29
	Group 1 Core Requirements	41		Group 1 Core Requirements	35
	Total Hours	72		Total Hours*	64

*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>Southeast Missouri State University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
MN 120	Fundamentals of Engineering Design Processes	3	MECH ENG 1720	Intro to Engineering Design	3
EH 103 or US 105 or US 107 or PS 103	Modern European Civilization or American History I or American History II or US Political Systems	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
EN 140 or SC 105 or EN 309 or IM 300	Rhetoric and Critical Thinking or Fundamentals of Oral Communication or Writing for Science and Technology or Technical Communication	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
CS 155	Computer Science I	5	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
EP 240	Circuit Analysis I	3	EE 2800	Electrical Circuits	3
EP 261	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EP 263	Mechanics of Materials	4	CIV ENG 2210, 2211	Mechanics of Materials and Materials Testing	4
	Literature Elective	3		Literature Elective	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	30		Group 2 Major Requirements	28
	Group 1 Core Requirements	41		Group 1 Core Requirements	35
	Total Hours	71		Total Hours*	63

*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>Southeast Missouri State University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
MN 120	Fundamentals of Engineering Design Processes	3	MECH ENG 1720	Intro to Engineering Design	3
EN 140 or SC 105 or EN 309 or IM 300	Rhetoric and Critical Thinking or Fundamentals of Oral Communication or Writing for Science and Technology or Technical Communication	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
EH 103 or US 105 or US 107 or PS 103	Modern European Civilization or American History I or American History II or US Political Systems	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
EP 261	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EP 263	Mechanics of Materials	4	CIV ENG 2210	Mechanics of Materials	3
CH 186	General Chemistry II	3	CHEM 1320	General Chemistry II	3
CH 341 or EP 240 or	Foundations of Organic Chemistry (4) or Circuit Analysis I (3) or	3	CHEM 2210 or EE 2800	Organic Chemistry I (3) or Electrical Circuits (3) <small>Not specifically required for the degree but will satisfy out-of-department technical elective requirement</small>	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Electives	Maximum Free Electives	5	Electives	Maximum Free Electives	3
	Group 2 Major Requirements	33		Group 2 Major Requirements	30
	Group 1 Core Requirements	41		Group 1 Core Requirements	35
	Total Hours	74		Total Hours*	65

*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>Southeast Missouri State University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
MN 120	Fundamentals of Engineering Design Processes	3	MECH ENG 1720	Intro to Engineering Design	3
EN 140 or EN 309 or IM 300	Rhetoric and Critical Thinking or Writing for Science and Technology or Technical Communication	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
EH 103 or US 105 or US 107 or PS 103	Modern European Civilization or American History I or American History II or US Political Systems	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
EP 261	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EP 262	Engineering Mechanics-Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
EP 263	Mechanics of Materials	4	CIV ENG 2210	Mechanics of Materials	3
GO 110	Physical Geology	3	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	28		Group 2 Major Requirements	26
	Group 1 Core Requirements	41		Group 1 Core Requirements	35
	Total Hours	69		Total Hours*	61

*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>Southeast Missouri State University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
MN 120	Fundamentals of Engineering Design Processes	3	MECH ENG 1720	Intro to Engineering Design	3
EN 140 or SC 105 or EN 309 or IM 300	Rhetoric and Critical Thinking or Fundamentals of Oral Communication or Writing for Science and Technology or Technical Communication	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
EH 103 or US 105 or US 107 or PS 103	Modern European Civilization or American History I or American History II or US Political Systems	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
CS 155	Computer Science I	5	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
MA 345	Linear Algebra	3	MATH 3108	Linear Algebra I	3
EP 261	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EP 263	Mechanics of Materials	4	CIV ENG 2210	Mechanics of Materials	3
EP 240	Circuit Analysis I	3	EE 2800	Electrical Circuits	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Electives	Maximum Free Electives	6	Electives	Maximum Free Electives	6
	Group 2 Major Requirements	39		Group 2 Major Requirements	36
	Group 1 Core Requirements	41		Group 1 Core Requirements	35
	Total Hours	80		Total Hours*	71

*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>Southeast Missouri State University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
MN 120	Fundamentals of Engineering Design Processes	3	MECH ENG 1720	Intro to Engineering Design	3
EN 309 or IM 300 or EN 140	Writing for Science and Technology or Technical Communication or Rhetoric and Critical Thinking	3	ENGLISH 3560 or ENGLISH 1160	Technical Writing (preferred) or Writing and Research	3
EH 103 or US 105 or US 107 or PS 103	Modern European Civilization or American History I or American History II or US Political Systems	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
GO 110	Physical Geology	3	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
EP 261	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EP 262	Engineering Mechanics-Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
EP 263	Mechanics of Materials	4	CIV ENG 2210	Mechanics of Materials	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	28		Group 2 Major Requirements	26
	Group 1 Core Requirements	41		Group 1 Core Requirements	35
	Total Hours	69		Total Hours*	61

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