

East Central College — 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>East Central College</u>			<u>Semester</u>	<u>Missouri S&T</u>		
MTH 190	Analytic Geometry & Calculus I	5	MATH 1214	Calculus I	Grade of C or better is required.	4
MTH 210	Analytic Geometry & Calculus II	5	MATH 1215	Calculus II	Grade of C or better is required.	4
MTH 220	Analytic Geometry & Calculus III	5	MATH 2222	Calculus III	Grade of C or better is required.	4
MTH 245	Differential Equations	3	MATH 3304	Elementary Differential Equations		3
PHY 211, 212	General Physics I and Lab	5	PHYSICS 1135	Engineering Physics I	Grade of C or better is required.	4
PHY 221, 222	General Physics II and Lab	5	PHYSICS 2135	Engineering Physics II	Grade of C or better is required.	4
CHM 111	General Chemistry I and Lab	5	CHEM 1310, 1319	General Chemistry I and Lab		5
COL 101	Falcon Seminar	1	FR ENG 1100	Study and Careers in Engineering and Computing		1
ENG 101	English Composition I	3	ENGLISH 1120	Exposition and Argumentation		3
ECO 102 or	Principles of Microeconomics or	3	ECON 1100 or	Principles of Microeconomics or		3
ECO 101	Principles of Macroeconomics	3	ECON 1200	Principles of Macroeconomics		3
Total Hours			40	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
Ceramic Engineering
Chemical Engineering
Chemical Engineering/Biochemistry Emphasis
Civil Engineering
Computer Engineering
Electrical Engineering

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

Engineering Major Requirements are detailed on the following pages.

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

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

Aerospace Engineering Group 2 Major Requirements

<u>East Central College</u>	<u>Semester</u>	<u>Missouri S&T</u>	
EGR 103	Intro to Engineering Design	MECH ENG 1720	Intro to Engineering Design
CIV 202 or	European Civilization II or	HISTORY 1200 or	Modern Western Civilization or
HST 101 or	US History to 1877 or	HISTORY 1300 or	American History to 1877 or
HST 102 or	US History Since 1877 or	HISTORY 1310 or	American History since 1877 or
PSC 102	US Government I: National and State	POL SCI 1200	American Government
ENG 102 or	English Composition II or	ENGLISH 1160 or	Writing and Research or
COM 110 or	Public Speaking or	SPMS 1185 or	Principles of Speech or
ENG 104	Technical Writing	ENGLISH 3560	Technical Writing
EGR 221, 222	C++ Program Engineers and Lab	CS 1971, 1981	Intro to Programming Method and Lab (C++)
EGR 231	Intro to Circuit Theory	EE 2800	Electrical Circuits
EGR 203	Engineering Mechanics-Statics	CIV ENG 2200	Engineering Mechanics-Statics
EGR 214	Engineering Mechanics-Dynamics	AERO ENG 2360	Dynamics
MTH 241 or	Linear Algebra or	MATH 3108 or	Linear Algebra I or
MTH 242	Engineering Statistics	STAT 3115	Engineering Statistics
ENG 210 or	Survey British Lit: Beginnings - 1784 or	ENGLISH 1211 or	British Literature I: The Beginnings to 1800 or
ENG 221 or	Survey American Lit: Beginnings - 1865 or	ENGLISH 1221 or	American Literature: 1600 to 1865 or
ENG 124 or	World Literature I or	ENGLISH 1231 or	World Literature I or
ENG 214 or	Women's Literature or	ENGLISH 2242 or	Literature by Women or
ENG 215	African-American Literature or other literature elective	ENGLISH 2245 or	African American Literature or other literature elective
PHL 203	Ethics or other engineering, business, bio, social ethics approved by advisor	PHILOS 1130	How Should I Live? An Introduction to Ethics or other engineering, business, bio, social ethics approved by advisor
	<i>No free electives applied to the degree.</i>		Maximum Free Electives
	Group 2 Major Requirements		Group 2 Major Requirements
	Group 1 Core Requirements		Group 1 Core Requirements
	Total Hours		Total Hours*
	71		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>East Central College</u>	<u>Semester</u>	<u>Missouri S&T</u>	
EGR 103	Intro to Engineering Design	MECH ENG 1720	Intro to Engineering Design
CIV 202*	European Civilization II*	HISTORY 1200*	Modern Western Civilization*
(or HST 101 or	(or US History to 1877 or	(or HISTORY 1300 or	(or American History to 1877 or
HST 102)	US History Since 1877)	HISTORY 1310)	American History since 1877)
	<small>*CIV 202 is preferred; HST 101 or 102 will also be accepted.</small>		<small>*HISTORY 1200 is preferred; 1300 or 1310 will also be accepted.</small>
EGR 203	Engineering Mechanics-Statics	CIV ENG 2200	Engineering Mechanics-Statics
EGR 214	Engineering Mechanics-Dynamics	MECH ENG 2350	Engineering Mechanics-Dynamics
MTH 242	Engineering Statistics	STAT 3115	Engineering Statistics
GEO 101	Intro to Physical Geology	STAT 3115	Engineering Statistics
		GEOLOGY 1110	Physical and Environmental Geology
		(GEO ENG 1150)	
Humanities or	Any Humanities or Social Science: history, economics,	Humanities or	Any Humanities or Social Science: history, economics,
Social Science or	political science, sociology, psychology, philosophy, fine art,	Social Science or	political science, sociology, psychology, philosophy, fine art,
Communication	literature, foreign language OR one communication course	Communication	literature, foreign language OR one communication course
	from this list: ENGLISH 1160, 1600, 3560 or SPMS 1185.		from this list: ENGLISH 1160, 1600, 3560 or SPMS 1185.
	<i>No free electives applied to the degree.</i>		Maximum Free Electives
	Group 2 Major Requirements		Group 2 Major Requirements
	Group 1 Core Requirements		Group 1 Core Requirements
	Total Hours		Total Hours*
	61		55

*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>East Central College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
COM 110	Public Speaking	3	SP&MS 1185	Principles of Speech	3
ENG 104	Technical Writing	3	ENGLISH 3560	Technical Writing	3
CIV 202 or HST 101 or HST 102 or PSC 102	European Civilization II or US History to 1877 or US History Since 1877 or US Government I: National and State	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
CHM 112	General Chemistry II and Lab	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2)* *CHEM 1510 is not an S&T degree requirement; course transfers as elective credit.	3
CHM 205	Organic Chemistry I and Lab	5	CHEM 2210, 2219	Organic Chemistry I and Lab	4
CHM 206 or BIO 111 or	Organic Chemistry II and Lab or General Biology and Lab	5	CHEM 2220, 2229 or BIO SCI 1113, 1219	Organic Chemistry II and Lab or General Biology and Lab <i>Applies to degree as Track Elective.</i>	4
EGR 221, 222	C++ Programming for Engineers	4	CS 1971,1981*	Intro to Programming Methodology and Lab* C++ <i>*Will be substituted for CS 1500.</i>	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	40		Group 1 Core Requirements	35
	Total Hours	68		Total Hours*	61

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

Biomedical Engineering-Biomaterials Group 2 Major Requirements

<u>East Central College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
COM 110	Public Speaking	3	SP&MS 1185	Principles of Speech	3
ENG 104	Technical Writing	3	ENGLISH 3560	Technical Writing	3
CIV 202 or HST 101 or HST 102 or PSC 102	European Civilization II or US History to 1877 or US History Since 1877 or US Government I: National and State	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
CHM 112	General Chemistry II and Lab	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2)* *CHEM 1510 is not an S&T degree requirement; course transfers as elective credit.	3
CHM 205	Organic Chemistry I and Lab	5	CHEM 2210, 2219*	Organic Chemistry I and Lab* <i>*CHEM 2219 Lab applies to the degree as a Track Elective (Non-engineering).</i>	4
CHM 206	Organic Chemistry II and Lab	5	CHEM 2220, 2229*	Organic Chemistry I and Lab* <i>CHEM 2229 Lab applies to the degree as a Track Elective (Non-engineering).</i>	4
BIO 111	General Biology and Lab	5	BIO SCI 1113*, 1219*	General General Biology* and Lab* <i>*Applies to degree as Track Elective (Non-engineering).</i>	4
EGR 221, 222	C++ Programming for Engineers	4	CS 1971,1981*	Intro to Programming Methodology and Lab* C++ <i>*Will be substituted for CS 1500.</i>	3
EGR 203	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 231	Intro to Circuit Theory	3	EE 2100*	Circuits I *A passing grade on the Missouri S&T EE Advancement Exam I is required to receive credit for EE 2100. Applies to the degree as a Track Elective (Engineering).	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	39		Group 2 Major Requirements	33
	Group 1 Core Requirements	40		Group 1 Core Requirements	35
	Total Hours	79		Total Hours*	68

*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>East Central College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 103	Intro to Engineering Design	3	MECH ENG 1720	Intro to Engineering Design	3
CIV 202 or HST 101 or HST 102 or PSC 102	European Civilization II or US History to 1877 or US History Since 1877 or US Government I: National and State	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
EGR 203	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
CHM 205	Organic Chemistry I Lecture and Lab	5	CHEM 2210, 2219*	Organic Chemistry I and Lab* (1) <small>CHEM 2210 will satisfy the advanced chemistry elective requirement. *CHEM 2219 is not an S&T degree requirement; will transfer as general elective credit.</small>	3
CHM 112	General Chemistry II Lecutre and Lab	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
MTH 242	Engineering Statistics	3	STAT 3115	Engineering Statistics <small>or any statistics course 3000-level or higher. Satisfies statistics elective requirement.</small>	3
ENG 102 or COM 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 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	28		Group 2 Major Requirements	27
	Group 1 Core Requirements	40		Group 1 Core Requirements	35
	Total Hours	68		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>East Central College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 103	Intro to Engineering Design	3	MECH ENG 1720	Intro to Engineering Design	3
ENG 104	Technical Writing	3	ENGLISH 3560	Technical Writing	3
COM 110	Public Speaking	3	SP&MS 1185	Principles of Speech	3
CIV 202 or HST 101 or HST 102 or PSC 102	European Civilization II or US History to 1877 or US History Since 1877 or US Government I: National and State	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
CHM 112	General Chemistry II Lecutre and Lab	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
CHM 205	Organic Chemistry I Lecture and Lab	5	CHEM 2210, 2219*	Organic Chemistry I and Lab* <small>*The lab will apply to the degree as 1 of the 9 science elective credits (below) .</small>	4
CHM 206 or BIO 208	Organic Chemistry II Lecture and Lab or General Microbiology Lecture and Lab <small>Will satisfy science elective requirement. Select up to 9 hours from these options.</small>	9	CHEM 2220, 2229* or BIO SCI 3313, 3319	Organic Chemistry II (3) and Lab* or Microbiology and Lab (5) <small>Will satisfy science elective requirement. Select up to 9 hours from these options or CHEM 2219 Organic Chemistry Lab. *CHEM 2229 is not an S&T degree requirement; will transfer as general elective credit.</small>	8
EGR 221, 222	C++ Programming for Engineers	4	CS 1971, 1981*	Intro to Programming Methodology and Lab* C++) <small>*Will be substituted for CS 1500.</small>	3
MTH 242	Engineering Statistics	3	STAT 3115*	Engineering Statistics* <small>*Will be substituted for STAT 3113.</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	41		Group 2 Major Requirements	36
	Group 1 Core Requirements	40		Group 1 Core Requirements	35
	Total Hours	81		Total Hours*	71

*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>East Central College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 103	Intro to Engineering Design	3	MECH ENG 1720	Intro to Engineering Design	3
ENG 102 or COM 110 or ENG 104	English Composition II or Public Speaking or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
CIV 202 or HST 101 or HST 102 or PSC 102	European Civilization II or US History to 1877 or US History Since 1877 or US Government I: National and State	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
GEO 101	Intro to Physical Geology	3	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
EGR 203	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 214	Engineering Mechanics-Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
MTH 242	Engineering Statistics	3	STAT 3115*	Engineering Statistics*	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	24		Group 2 Major Requirements	23
	Group 1 Core Requirements	40		Group 1 Core Requirements	35
	Total Hours	64		Total Hours*	58

*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>East Central College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
COM 110	Public Speaking	3	SPMS 1185	Principles of Speech	3
ENG 102 or ENG 104	English Composition II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
CIV 202 or HST 101 or HST 102 or PSC 102	European Civilization II or US History to 1877 or US History Since 1877 or US Government I: National and State	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
EGR 251 or EGR 221,222	Data Structures or C++ Program Engineers and Lab	3	CS 1500	Computational Problem Solving	3
EGR 213 and EGR 214 or CHEM 205	Engineering Mechanics-Statics (3) and Engineering Mechanics- Dynamics (3) or Organic Chemistry I and Lab (5)	3	CIV ENG 2200 or MECH ENG 2350 or CHEM 2210, 2219*	Engineering Mechanics-Statics (3) or Engineering Mechanics-Dynamics (2) or Organic Chemistry I and Lab* (4)	3
				<small>Satisfies a required engineering/science elective. *CHEM 2219 is not an S&T degree requirement; transfers as general elective credit.</small>	
EGR 231	Intro to Circuit Theory	3	EE 2100**	Circuits I **A passing grade on the Missouri S&T EE Advancement Exam I is required to receive credit for EE 2100.	3
MTH 241	Linear Algebra	3	MATH 3108	Linear Algebra <small>Will satisfy a required math elective.</small>	3
MTH 242	Engineering Statistics	3	STAT 3115*	Engineering Statistics* <small>*Will be substituted for STAT 3117.</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	30		Group 2 Major Requirements	30
	Group 1 Core Requirements	40		Group 1 Core Requirements	35
	Total Hours	70		Total Hours*	65

*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

East Central College		Semester	Missouri S&T		
EGR 103	Intro to Engineering Design	3	MECH ENG 1720	Intro to Engineering Design	3
COM 110	Public Speaking	3	SPMS 1185	Principles of Speech	3
ENG 102 or ENG 104	English Composition II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
CIV 202 or HST 101 or HST 102 or PSC 102	European Civilization II or US History to 1877 or US History Since 1877or US Government I: National and State	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
EGR 251 or EGR 221,222	Data Structures or C++ Program Engineers and Lab	3	CS 1500	Computational Problem Solving	3
EGR 213 and EGR 214 (BOTH of the courses above or ONE course below.) OR CHEM 205	Engineering Mechanics-Statics (3) and Engineering Mechanics- Dynamics (3) (Both courses above combined or the one course below will satisfy a required engineering science elective.) OR Organic Chemistry I and Lab (5) *A maximum of 3 credit hours applies to the engineering science elective. Any additional credit hours apply to degree totals as general elective credit.	3	CIV ENG 2200 and MECH ENG 2350 (BOTH of the courses above or ONE course below.) OR CHEM 2210	Engineering Mechanics-Statics (3) and Engineering Mechanics-Dynamics (3) (Both courses above combined or the one course below will satisfy a required engineering science elective.) OR Organic Chemistry I (4) *A maximum of 3 credit hours applies to the engineering science elective. Any additional credit hours apply to degree totals as general elective credit.	3
EGR 231	Intro to Circuit Theory	3	EE 2100**	Circuits I **A passing grade on the Missouri S&T EE Advancement Exam I is required to receive credit for EE 2100.	3
MTH 241	Linear Algebra	3	MATH 3108	Linear Algebra	3
MTH 242	Engineering Statistics	3	STAT 3115*	Engineering Statistics* *Will be substituted for STAT 3117.	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	33		Group 2 Major Requirements	33
	Group 1 Core Requirements	40		Group 1 Core Requirements	35
	Total Hours	73		Total Hours*	68

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

Engineering Management Group 2 Major Requirements

East Central College		Semester	Missouri S&T		
EGR 103	Intro to Engineering Design	3	MECH ENG 1720	Intro to Engineering Design	3
PSY 101	General Psychology	3	PSYCH 1101	General Psychology	3
CIV 202 or HST 101 or HST 102 or PSC 102	European Civilization II or US History to 1877 or US History Since 1877or US Government I: National and State	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
COM 110	Public Speaking	3	SPMS 1185	Principles of Speech	3
ENG 102 or ENG 104	English Composition II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
EGR 221, 222	C++ Programming for Engineers	4	CS 1971,1981*	Intro to Programming Methodology and Lab* C++) *Will be substituted for CS 1500.	3
EGR 231	Intro to Circuit Theory	3	EE 2800	Electrical Circuits	3
EGR 203	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 214	Engineering Mechanics-Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
MTH 242	Engineering Statistics	3	STAT 3115	Engineering Statistics	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	37		Group 2 Major Requirements	32
	Group 1 Core Requirements	40		Group 1 Core Requirements	35
	Total Hours	77		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>East Central College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 103	Intro to Engineering Design	3	MECH ENG 1720	Intro to Engineering Design	3
ENG 102 or COM 110 or ENG 104	English Composition II or Public Speaking or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
CIV 202 or HST 101 or HST 102	European Civilization II or US History to 1877 or US 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
GEO 101	Intro to Physical Geology	3	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
CHM 112	General Chemistry II Lecture and Lab	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
BIO 111	General Biology Lecture and Lab	5	BIO SCI 1113	General Biology	3
EGR 203	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 214	Engineering Mechanics-Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
MTH 242	Engineering Statistics	3	STAT 3115	Engineering Statistics <small>Will be substituted for STAT 3113.</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	34		Group 2 Major Requirements	29
	Group 1 Core Requirements	40		Group 1 Core Requirements	35
	Total Hours	74		Total Hours*	64

*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>East Central College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 103	Intro to Engineering Design	3	MECH ENG 1720	Intro to Engineering Design	3
ENG 104	Technical Writing	3	ENGLISH 3560	Technical Writing	3
CIV 202 or HST 101 or HST 102 or PSC 102	European Civilization II or US History to 1877 or US History Since 1877 or US Government I: National and State	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
EGR 221, 222	C++ Programming for Engineers	4	CS 1971, 1981*	Intro to Programming Methodology and Lab* C++) <small>*Will be substituted for CS 1500.</small>	3
GEO 101	Intro to Physical Geology	3	GEO ENG 1150 (GEOLOGY 1110)	Physical and Environmental Geology	3
EGR 203	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 214	Engineering Mechanics-Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
MTH 242	Engineering Statistics	3	STAT 3115	Engineering Statistics <small>Will be substituted for STAT 3113.</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
	<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	40		Group 1 Core Requirements	35
	Total Hours	71		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

East Central College		Semester	Missouri S&T		
EGR 103	Intro to Engineering Design	3	MECH ENG 1720	Intro to Engineering Design	3
CIV 202 or HST 101 or HST 102 or PSC 102	European Civilization II or US History to 1877 or US History Since 1877 or US Government I: National and State	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
ENG 102 or COM 110 or ENG 104	English Composition II or Public Speaking or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
EGR 221, 222	C++ Program Engineers and Lab	4	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
EGR 231	Intro to Circuit Theory	3	EE 2800	Electrical Circuits	3
EGR 203	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 214	Engineering Mechanics-Dynamics	3	MECH ENG 2360	Dynamics	3
MTH 241 or MTH 242	Linear Algebra or Engineering Statistics	3	MATH 3108 or STAT 3115	Linear Algebra I or Engineering Statistics <small>Will satisfy the Advanced Math/Comp Sci elective requirement.</small>	3
ENG 210 or ENG 221 or ENG 124 or ENG 214 or ENG 215	Survey British Lit: Beginnings - 1784 or Survey American Lit: Beginnings - 1865 or World Literature I or Women's Literature or African-American Literature <small>or other literature elective</small>	3	ENGLISH 1211 or ENGLISH 1221 or ENGLISH 1231 or ENGLISH 2242 or ENGLISH 2245 or	British Literature I: The Beginnings to 1800 or American Literature: 1600 to 1865 or World Literature I or Literature by Women or African American Literature <small>or other literature 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
	<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	40		Group 1 Core Requirements	35
	Total Hours	71		Total Hours*	65

*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

East Central College		Semester	Missouri S&T		
EGR 103	Intro to Engineering Design	3	MECH ENG 1720	Intro to Engineering Design	3
ENG 102 or COM 110 or ENG 104	English Composition II or Public Speaking or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
CIV 202 or HST 101 or HST 102 or PSC 102	European Civilization II or US History to 1877 or US History Since 1877 or US Government I: National and State	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
EGR 203	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
MTH 242	Engineering Statistics	3	STAT 3115	Engineering Statistics	3
CHM 112	General Chemistry II Lecutre and Lab	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
CHEM 205 or EGR 231	Organic Chemistry I and Lab or Intro to Circuit Theory	3	CHEM 2210, 2219* or EE 2800	Organic Chemistry I (4) or Electrical Circuits (3) <small>Not specifically required for the degree but will satisfy Out-of-Department Technical Elective Requirement. *CHEM 2219 is not an S&T degree requirement; will transfer as general elective credit.</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	34		Group 2 Major Requirements	30
	Group 1 Core Requirements	40		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>East Central College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 103	Intro to Engineering Design	3	MECH ENG 1720	Intro to Engineering Design	3
ENG 102 or ENG 104	English Composition II or Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
CIV 202 or HST 101 or HST 102 or PSC 102	European Civilization II or US History to 1877 or US History Since 1877or US Government I: National and State	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
MTH 242	Engineering Statistics	3	STAT 3115	Engineering Statistics	3
EGR 203	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 214	Engineering Mechanics-Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
GEO 101	Intro to 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	27		Group 2 Major Requirements	26
	Group 1 Core Requirements	40		Group 1 Core Requirements	35
	Total Hours	67		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>East Central College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 103	Intro to Engineering Design	3	MECH ENG 1720	Intro to Engineering Design	3
ENG 102 or COM 110 or ENG 104	English Composition II or Public Speaking or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
CIV 202 or HST 101 or HST 102 or PSC 102	European Civilization II or US History to 1877 or US History Since 1877or US Government I: National and State	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
EGR 221,222	C++ Program Engineers and Lab	4	CS 1971,1981	Intro to Programming Method and Lab (C++)	3
MTH 241	Linear Algebra	3	MATH 3108	Linear Algebra	3
EGR 203	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
MTH 242	Engineering Statistics	3	STAT 3115	Engineering Statistics	3
EGR 231	Intro to Circuit Theory	3	EE 2800	Electrical Circuits	3
EGR 213	Metallurgy for Engineers	3	MET ENG 2110	Metallurgy for Engineers	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	40		Group 2 Major Requirements	39
	Group 1 Core Requirements	40		Group 1 Core Requirements	35
	Total Hours	80		Total Hours*	74

*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>East Central College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 103	Intro to Engineering Design	3	MECH ENG 1720	Intro to Engineering Design	3
ENG 104 or ENG 102	Technical Writing (preferred) or English Composition II	3	ENGLISH 3560 or ENGLISH 1160	Technical Writing (preferred) or Writing and Research	3
CIV 202 or HST 101 or HST 102 or PSC 102	European Civilization II or US History to 1877 or US History Since 1877or US Government I: National and State	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
GEO 101	Intro to Physical Geology	3	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
EGR 203	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 214	Engineering Mechanics-Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
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	24		Group 2 Major Requirements	23
	Group 1 Core Requirements	40		Group 1 Core Requirements	35
	Total Hours	64		Total Hours*	58

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