

East Central College — Missouri S&T

General Engineering Transfer Guide

Effective as of Fall 2023

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

Group 1 - Core Requirements: All Majors Take All Courses

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

<u>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	Foundation 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			ECON 1200	Principles of Macroeconomics	
		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	3	MECH ENG 1720	Engineering Design with Computer Appl	3	
HST 101 or	US History to 1877 or		HISTORY 1300 or	American History to 1877 or		
HST 102 or	US History Since 1877 or	3	HISTORY 1310 or	American History since 1877 or	3	
CIV 202 or	European Civilization II or		HISTORY 1200 or	Modern Western Civilization 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	3	SPMS 1185 or	Principles of Speech or	3	
ENG 104	Technical Writing		ENGLISH 3560	Technical Writing		
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	Circuit Analysis I	3	
EGR 203	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3	
EGR 214	Engineering Mechanics-Dynamics	3	AERO ENG 2360	Dynamics	3	
MTH 241 or	Linear Algebra or		MATH 3108 or	Linear Algebra I or		
MTH 242	Engineering Statistics	3	STAT 3115	Engineering Statistics	3	
			(Will satisfy the Advanced Math/Comp Sci elective requirement.)			
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	3	ENGLISH 1231 or	World Literature I or	3	
ENG 214 or	Women's Literature or		ENGLISH 2242 or	Literature by Women or		
ENG 215	African-American Literature		ENGLISH 2245 or	African American Literature		
	(or other literature elective)			(or other literature elective)		
PHL 203	Ethics (or other ethics elective)	3		Ethics Elective	3	
				Engineering, business, bio, social or other ethics approved by advisor.		
	<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 Aerospace Engineering degree.			

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Architectural Engineering Group 2 Major Requirements

East Central College			Semester	Missouri S&T		
EGR 103	Intro to Engineering Design	3	MECH ENG 1720	Engineering Design with Computer Appl	3	
CIV 202* (or HST 101 or HST 102)	European Civilization II* (or US History to 1877 or US History Since 1877) <small>*CIV 202 is preferred; HST 101 or 102 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	
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 (Will be substituted for STAT 3113.)	3	
HSS Elective	Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language	3	HSS Elective	Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language	3	
GEO 101	Intro to Physical Geology	3	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3	
	No free electives applied to the degree.	0		Maximum Free Electives	0	
	Group 2 Major Requirements	21		Group 2 Major Requirements	20	
	Group 1 Core Requirements	40		Group 1 Core Requirements	35	
	Total Hours	61		Total Hours*	55	
			<small>*S&T advisor permission is required to transfer more than 69 credits toward the S&T Architectural Engineering degree.</small>			

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

Ceramic Engineering Group 2 Major Requirements

East Central College			Semester	Missouri S&T		
EGR 103	Intro to Engineering Design	3	MECH ENG 1720	Engineering Design with Computer Appl	3	
HST 101 or	US History to 1877 or		HISTORY 1300 or	American History to 1877 or		
HST 102 or	US History Since 1877 or	3	HISTORY 1310 or	American History since 1877 or	3	
CIV 202 or	European Civilization II or		HISTORY 1200 or	Modern Western Civilization or		
PSC 102	US Government I: National and State		POL SCI 1200	American Government		
EGR 203	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3	
CHM 205	Organic Chemistry I Lecture and Lab	5	CHEM 2210	Organic Chemistry I (Will satisfy the advanced chemistry elective requirement.)	4	
CHM 112	General Chemistry II Lecutre and Lab	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2)* *Note: CHEM 1510 is not an S&T degree requirement; course transfers as elective credit.	3	
MTH 242	Engineering Statistics	3	STAT 3115	Engineering Statistics (or any statistics course 3000-level or higher. Satisfies statistics elective requirement.)	3	
ENG 102 or	English Composition II or		ENGLISH 1160 or	Writing and Research or		
COM 110 or	Public Speaking or		SPMS 1185 or	Public Speaking or		
HSS Elective	Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language	3	HSS Elective	Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language	3	
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3	
	No free electives applied to the degree.	0		Maximum Free Electives	0	
	Group 2 Major Requirements	28		Group 2 Major Requirements	25	
	Group 1 Core Requirements	40		Group 1 Core Requirements	35	
	Total Hours	68		Total Hours*	60	
			*S&T advisor permission is required to transfer more than 68 credits toward the S&T Ceramic Engineering degree.			

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

Chemical Engineering Group 2 Major Requirements

East Central College			Semester	Missouri S&T		
EGR 103	Intro to Engineering Design	3	MECH ENG 1720	Engineering Design with Computer Appl	3	
ENG 104	Technical Writing	3	ENGLISH 3560	Technical Writing	3	
HST 101 or	US History to 1877 or	3	HISTORY 1300 or	American History to 1877 or	3	
HST 102 or	US History Since 1877 or		HISTORY 1310 or	American History since 1877 or		
CIV 202 or	European Civilization II or		HISTORY 1200 or	Modern Western Civilization or		
PSC 102	US Government I: National and State		POL SCI 1200	American Government		
CHM 112	General Chemistry II Lecutre and Lab	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2)* *Note: CHEM 1510 is not an S&T degree requirement; course transfers as elective credit.	3	
CHM 205	Organic Chemistry I Lecture and Lab	5	CHEM 2210, 2219*	Organic Chemistry I (4) and Lab* (1) *Note: CHEM 1510 is not an S&T degree requirement; course transfers as elective credit.	4	
CHM 206 or BIO 208	Organic Chemistry II Lecture and Lab or General Microbiology Lecture and Lab (Will satisfy science elective requirement. Select up to 9 hours from these options.)	9	CHEM 2220, 2229 or BIO SCI 3313, 3319	Organic Chemistry II (4) and Lab (1) or Microbiology and Lab (5) (Will satisfy science elective requirement. Select up to 9 hours from these options.)	9	
EGR 251 or EGR 221,222	Data Structures (3) or C++ Program Engineers and Lab (4)	3	CS 1500 or CS 1971, 1981*	Computational Problem Solving or Intro to Programming Methodology and Lab* (C++) *Course will be substituted for CS 1500.	3	
MTH 242	Engineering Statistics	3	STAT 3115	Engineering Statistics (Will be substituted for STAT 3113.)	3	
COM 110	Public Speaking	3	SP&MS 1185	Principles of Speech	3	
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3	
	No free electives applied to the degree.	0		Maximum Free Electives	0	
	Group 2 Major Requirements	40		Group 2 Major Requirements	37	
	Group 1 Core Requirements	40		Group 1 Core Requirements	35	
	Total Hours	80		Total Hours*	72	
			*S&T advisor permission is required to transfer more than 68 credits toward the S&T Chemical Engineering degree.			

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

Chemical Engineering - Biochemical Engineering Emphasis Group 2 Major Requirements

East Central College			Semester	Missouri S&T		
EGR 103	Intro to Engineering Design	3	MECH ENG 1720	Engineering Design with Computer Appl	3	
ENG 104	Technical Writing	3	ENGLISH 3560	Technical Writing	3	
HST 101 or	US History to 1877 or	3	HISTORY 1300 or	American History to 1877 or	3	
HST 102 or	US History Since 1877 or		HISTORY 1310 or	American History since 1877 or		
CIV 202 or	European Civilization II or		HISTORY 1200 or	Modern Western Civilization or		
PSC 102	US Government I: National and State		POL SCI 1200	American Government		
CHM 112	General Chemistry II Lecutre and Lab	5	CHEM 1320	General Chemistry II	3	
CHM 205	Organic Chemistry I Lecture and Lab	5	CHEM 2210	Organic Chemistry I	4	
CHM 206 or	Organic Chemistry II Lecture and Lab or	9	CHEM 2220, 2229 or	Organic Chemistry II (4) and Lab (1) or	9	
BIO 208	General Microbiology Lecture and Lab (Will satisfy science elective requirement. Select up to 9 hours from these options.)		BIO SCI 3313, 3319	Microbiology and Lab (5) (Will satisfy science elective requirement. Select up to 9 hours from these options.)		
EGR 251 or	Data Structures (3) or	3	CS 1500 or	Computational Problem Solving or	3	
EGR 221,222	C++ Program Engineers and Lab (4)		CS 1971, 1981*	Intro to Programming Methodology and Lab* (C++) *Course will be substituted for CS 1500.		
MTH 242	Engineering Statistics	3	STAT 3115	Engineering Statistics (Will be substituted for STAT 3113.)	3	
COM 110	Public Speaking	3	SP&MS 1185	Principles of Speech	3	
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3	
	No free electives applied to the degree.	0		Maximum Free Electives	0	
	Group 2 Major Requirements	40		Group 2 Major Requirements	37	
	Group 1 Core Requirements	40		Group 1 Core Requirements	35	
	Total Hours	80		Total Hours*	72	
			*S&T advisor permission is required to transfer more than 70 credits toward the S&T Chemical/Biochemical Engineering degree.			

*S&T advisor permission is required to transfer more than 70 credits toward the S&T Chemical/Biochemical Engineering degree.

Civil Engineering Group 2 Major Requirements

East Central College			Semester	Missouri S&T		
EGR 103	Intro to Engineering Design	3	MECH ENG 1720	Engineering Design with Computer Appl	3	
ENG 102 or	English Composition II or	3	ENGLISH 1160 or	Writing and Research or	3	
COM 110 or	Public Speaking or		SPMS 1185 or	Public Speaking or		
ENG 104	Technical Writing		ENGLISH 3560	Technical Writing		
HST 101 or	US History to 1877 or	3	HISTORY 1300 or	American History to 1877 or	3	
HST 102 or	US History Since 1877 or		HISTORY 1310 or	American History since 1877 or		
CIV 202 or	European Civilization II or		HISTORY 1200 or	Modern Western Civilization or		
PSC 102	US Government I: National and State		POL SCI 1200	American Government		
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 (Will be substituted for STAT 3113.)	3	
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3	
	No free electives applied to the degree.	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.			

*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	Public Speaking	3
ENG 102 or	English Composition II or	3		ENGLISH 1160 or	Writing and Research or	3
ENG 104	Technical Writing			ENGLISH 3560	Technical Writing	
HST 101 or	US History to 1877 or	3		HISTORY 1300 or	American History to 1877 or	3
HST 102 or	US History Since 1877 or			HISTORY 1310 or	American History since 1877 or	
CIV 202 or	European Civilization II or			HISTORY 1200 or	Modern Western Civilization or	
PSC 102	US Government I: National and State			POL SCI 1200	American Government	
EGR 251 or	Data Structures or	3-4		CS 1500	Computational Problem Solving	3
EGR 221,222	C++ Program Engineers and Lab					
EGR 213 and	Engineering Mechanics-Statics (3) and	3-5		CIV ENG 2200 or	Engineering Mechanics-Statics (3) or	3
EGR 214 or	Engineering Mechanics- Dynamics (3) or			MECH ENG 2350 or	Engineering Mechanics-Dynamics (2) or	
CHEM 205	Organic Chemistry I and Lab (5)			CHEM 2210	Organic Chemistry I (4)	
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 (Will satisfy a required math elective.)	3
MTH 242	Engineering Statistics	3		STAT 3115	Engineering Statistics (Will be substituted for STAT 3117.)	3
	Humanities/Social Science Elective	3			Humanities/Social Science Elective	3
	See your advisor for course options.	0			Maximum Free Electives	3
	Group 2 Major Requirements	21			Group 2 Major Requirements	30
	Group 1 Core Requirements	40			Group 1 Core Requirements	35
	Total Hours	61			Total Hours*	65
				*S&T advisor permission is required to transfer more than 68 credits toward the S&T Computer Engineering degree.		

*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>East Central College</u>			<u>Semester</u>	<u>Missouri S&T</u>		
EGR 103	Intro to Engineering Design	3		MECH ENG 1720	Engineering Design with Computer Appl	3
COM 110	Public Speaking	3		SPMS 1185	Public Speaking	3
ENG 102 or	English Composition II or	3		ENGLISH 1160 or	Writing and Research or	3
ENG 104	Technical Writing			ENGLISH 3560	Technical Writing	
HST 101 or	US History to 1877 or	3		HISTORY 1300 or	American History to 1877 or	3
HST 102 or	US History Since 1877 or			HISTORY 1310 or	American History since 1877 or	
CIV 202 or	European Civilization II or			HISTORY 1200 or	Modern Western Civilization or	
PSC 102	US Government I: National and State			POL SCI 1200	American Government	
EGR 251 or	Data Structures or	3-4		CS 1500	Computational Problem Solving	3
EGR 221,222	C++ Program Engineers and Lab					
EGR 213 and	Engineering Mechanics-Statics (3) and	5-6		CIV ENG 2200 and	Engineering Mechanics-Statics (3) and	4-6
EGR 214	Engineering Mechanics- Dynamics (3)			MECH ENG 2350	Engineering Mechanics-Dynamics (3)	
(BOTH of the courses above or	(Both courses above combined or the one course below will satisfy a			(BOTH of the courses above or	(Both courses above combined or the one course below will satisfy a required	
ONE course below.)	required engineering science elective.)			ONE course below.)	engineering science elective.)	
OR	OR			OR	OR	
CHEM 205	Organic Chemistry I and Lab (5)			CHEM 2210	Organic Chemistry I (4)	
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/Social Science Elective	3			Humanities/Social Science Elective	3
	See your advisor for course options.	3			Maximum Free Electives	3
	Group 2 Major Requirements	27			Group 2 Major Requirements	30
	Group 1 Core Requirements	40			Group 1 Core Requirements	35
	Total Hours	67			Total Hours*	65
*S&T advisor permission is required to transfer more than 68 credits toward the S&T Electrical Engineering degree.						

*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>East Central College</u>			<u>Semester</u>	<u>Missouri S&T</u>		
EGR 103	Intro to Engineering Design	3		MECH ENG 1720	Engineering Design with Computer Appl	3
PSY 101	General Psychology	3		PSYCH 1101	General Psychology	3
HST 101 or	US History to 1877 or			HISTORY 1300 or	American History to 1877 or	
HST 102 or	US History Since 1877 or	3		HISTORY 1310 or	American History since 1877 or	3
CIV 202 or	European Civilization II or			HISTORY 1200 or	Modern Western Civilization or	
PSC 102	US Government I: National and State			POL SCI 1200	American Government	
COM 110	Public Speaking	3		SPMS 1185	Principles of Speech	3
ENG 102 or	English Composition II or	3		ENGLISH 1160 or	Writing and Research or	3
ENG 104	Technical Writing			ENGLISH 3560	Technical Writing	
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	Circuit Analysis I	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/Social Science Elective	3			Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3			Maximum Free Electives	3
	Group 2 Major Requirements	37			Group 2 Major Requirements	35
	Group 1 Core Requirements	40			Group 1 Core Requirements	35
	Total Hours	77			Total Hours*	70

*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	Engineering Design with Computer Appl	3
ENG 102 or	English Composition II or			ENGLISH 1160 or	Writing and Research or	
COM 110 or	Public Speaking or	3		SPMS 1185 or	Public Speaking or	3
ENG 104	Technical Writing			ENGLISH 3560	Technical Writing	
HST 101 or	US History to 1877 or			HISTORY 1300 or	American History to 1877 or	
HST 102 or	US History Since 1877 or	3		HISTORY 1310 or	American History since 1877 or	3
CIV 202	European Civilization II			HISTORY 1200	Modern Western Civilization	
GEO 101	Intro to Physical Geology	3		GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
CHM 112	General Chemistry II Lecutre and Lab	5		CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2)* *Note: CHEM 1510 is not an S&T degree requirement; course transfers as elective credit.	3
BIO 111	General Biology Lecture and Lab	5		BIO SCI 1113	General Biology	4
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 (Will be substituted for STAT 3113.)	3
	Humanities/Social Science Elective	3			Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0			Maximum Free Electives	0
	Group 2 Major Requirements	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 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	Engineering Design with Computer Appl	3
ENG 104	Technical Writing	3		ENGLISH 3560	Technical Writing	3
HST 101 or	US History to 1877 or			HISTORY 1300 or	American History to 1877 or	
HST 102 or	US History Since 1877 or	3		HISTORY 1310 or	American History since 1877 or	3
CIV 202 or	European Civilization II or			HISTORY 1200 or	Modern Western Civilization or	
PSC 102	US Government I: National and State			POL SCI 1200	American Government	
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>Applies to the degree as a required statistics elective.</small>	3
BIO 111 or	General Biology Lecture and Lab or			BIO SCI 1113 or	General Biology or	
CHM 112 or	General Chemistry II and Lab or			CHEM 1320 or	General Chemistry II or	
CHM 205	Organic Chemistry I and Lab <small>or any 3-hour course in chemistry, geochemistry, or biology. Satisfies chemistry/geochemistry elective requirement.</small>	5		CHEM 2210	Organic Chemistry I <small>or any 3-hour course in chemistry, geochemistry, or biology. Satisfies chemistry/geochemistry elective requirement.</small>	3
	Humanities/Social Science Elective	3			Humanities/Social Science Elective	3
	Humanities/Social Science Elective	3			Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0			Maximum Free Electives	0
	Group 2 Major Requirements	32			Group 2 Major Requirements	29
	Group 1 Core Requirements	40			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>East Central College</u>			<u>Semester</u>	<u>Missouri S&T</u>		
EGR 103	Intro to Engineering Design	3		MECH ENG 1720	Engineering Design with Computer Appl	3
HST 101 or	US History to 1877 or			HISTORY 1300 or	American History to 1877 or	
HST 102 or	US History Since 1877 or	3		HISTORY 1310 or	American History since 1877 or	3
CIV 202 or	European Civilization II or			HISTORY 1200 or	Modern Western Civilization 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	3		SPMS 1185 or	Principles of Speech or	3
ENG 104	Technical Writing			ENGLISH 3560	Technical Writing	
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	Circuit Analysis I	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	Linear Algebra or			MATH 3108 or	Linear Algebra I or	
MTH 242	Engineering Statistics	3		STAT 3115	Engineering Statistics <small>(Will satisfy the Advanced Math/Computer Science elective requirement.)</small>	3
EGR 213	Metallurgy for Engineers	3		MET ENG 2110	Metallurgy for Engineers	3
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	3		ENGLISH 1231 or	World Literature I or	3
ENG 214 or	Women's Literature or			ENGLISH 2242 or	Literature by Women or	
ENG 215	African-American Literature <small>(or other literature elective)</small>			ENGLISH 2245 or	African American Literature <small>(or other literature elective)</small>	
	Humanities/Social Science Elective	3			Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0			Maximum Free Electives	0
	Group 2 Major Requirements	34			Group 2 Major Requirements	33
	Group 1 Core Requirements	40			Group 1 Core Requirements	35
	Total Hours	74			Total Hours*	68

*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>East Central College</u>			<u>Semester</u>	<u>Missouri S&T</u>		
EGR 103	Intro to Engineering Design	3		MECH ENG 1720	Engineering Design with Computer Appl	3
ENG 102 or	English Composition II or			ENGLISH 1160 or	Writing and Research or	
COM 110 or	Public Speaking or	3		SPMS 1185 or	Public Speaking or	3
ENG 104	Technical Writing			ENGLISH 3560	Technical Writing	
HST 101 or	US History to 1877 or			HISTORY 1300 or	American History to 1877 or	
HST 102 or	US History Since 1877 or	3		HISTORY 1310 or	American History since 1877 or	3
CIV 202 or	European Civilization II or			HISTORY 1200 or	Modern Western Civilization or	
PSC 102	US Government I: National and State			POL SCI 1200	American Government	
EGR 203	Engineering Mechanics-Statics	3		CIV ENG 2200	Engineering Mechanics-Statics	3
MTH 242	Engineering Statistics	3		STAT 3115	Engineering Statistics	3
EGR 213	Metallurgy for Engineers	3		MET ENG 2110	Metallurgy for Engineers	3
CHM 112	General Chemistry II and Lab	5		CHEM 1320	General Chemistry II	3
CHEM 205 or	Organic Chemistry I Lec & Lab or			CHEM 2210 or	Organic Chemistry I (4) or	
EGR 231	Intro to Circuit Theory	3		EE 2800	Electrical Circuits (3)	3-4
					Not specifically required for the degree but will satisfy Out-of-Department Technical Elective Requirement.	
	Humanities/Social Science Elective	3			Humanities/Social Science Elective	3
	Humanities/Social Science Elective	3			Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	5			Maximum Free Electives	3
	Group 2 Major Requirements	37			Group 2 Major Requirements	30
	Group 1 Core Requirements	40			Group 1 Core Requirements	35
	Total Hours	77			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	Engineering Design with Computer Appl	3
ENG 102 or	English Composition II or			ENGLISH 1160 or	Writing and Research or	
ENG 104	Technical Writing	3		ENGLISH 3560 or	Technical Writing or	3
				ENGLISH 1600	Intro to Technical Communications	
HST 101 or	US History to 1877 or			HISTORY 1300 or	American History to 1877 or	
HST 102 or	US History Since 1877 or	3		HISTORY 1310 or	American History since 1877 or	3
CIV 202 or	European Civilization II or			HISTORY 1200 or	Modern Western Civilization or	
PSC 102	US Government I: National and State			POL SCI 1200	American Government	
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	Physical and Environmental Geology	3
				(GEO ENG 1150)		
	Humanities/Social Science Elective	3			Humanities/Social Science Elective	3
	Humanities/Social Science Elective	3			Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0			Maximum Free Electives	0
	Group 2 Major Requirements	27			Group 2 Major Requirements	26
	Group 1 Core Requirements	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	Engineering Design with Computer Appl	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 Public Speaking or Technical Writing	3	
HST 101 or HST 102 or CIV 202 or PSC 102	US History to 1877 or US History Since 1877 or European Civilization II or US Government I: National and State	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	
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	Circuit Analysis I	3	
EGR 213	Metallurgy for Engineers	3	MET ENG 2110	Metallurgy for Engineers	3	
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3	
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3	
	See your advisor for course options.	6		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			Total Hours*	
		80			74	
*S&T advisor permission is required to transfer more than 68 credits toward the S&T Nuclear Engineering degree.						

*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	Engineering Design with Computer Appl	3
ENG 102 or ENG 104	English Composition II or Technical Writing	3		ENGLISH 3560 or ENGLISH 1160 or ENGLISH 1600	Technical Writing (preferred) or Writing and Research or Intro to Technical Communications	3
HST 101 or HST 102 or CIV 202 or PSC 102	US History to 1877 or US History Since 1877 or European Civilization II or US Government I: National and State	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
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/Social Science Elective	3			Humanities/Social Science Elective	3
	Humanities/Social Science Elective	3			Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0			Maximum Free Electives	0
	Group 2 Major Requirements	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.		

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