

East Central College — Missouri S&T General Engineering

Transfer Guide Effective as of Fall 2026

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

Students are not required to complete all courses on this guide before transferring to Missouri S&T.

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.
MTH 210	Analytic Geometry & Calculus II	5	MATH 1215	Calculus II Grade of C or better is required.
MTH 220	Analytic Geometry & Calculus III	5	MATH 2222	Calculus III Grade of C or better is required.
MTH 245	Differential Equations	3	MATH 3304	Elementary Differential Equations
PHY 211, 212	General Physics I and Lab	5	PHYSICS 1135	Engineering Physics I Grade of C or better is required.
PHY 221, 222	General Physics II and Lab	5	PHYSICS 2135	Engineering Physics II Grade of C or better is required.
COL 101	Falcon Seminar	1	FR ENG 1100	Study and Careers in Engineering and Computing
ENG 101	English Composition I	3	ENGLISH 1120	Exposition and Argumentation
Total Hours		32	Total Hours	
			27	

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 - Biomanufacturing
Biomedical Engineering - 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
Semiconductor 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.

Aerospace Engineering Group 2 Major Requirements

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	Intro to Engineering Design	3
ENG 102 or ENG 104 or COM 110	English Composition II or Technical Writing or Public Speaking	3	ENGLISH 1160 or ENGLISH 3560 or SPMS 1185	Writing and Research or Technical Writing or Principles of Speech <small>Applies to degree as Gen Ed Communication requirement.</small>	3
CHM 111	General Chemistry I and Lab	5	CHEM 1310*, 1319	General Chemistry I and Lab <small>*CHEM 1310 will be substituted for CHEM 1305.</small>	5
EGR 221, 222	C++ Program Engineers and Lab	4	COMP SCI 1971, 1981	Intro to Programming Method and Lab (C++)	3
EGR 231	Introductory Circuit Theory	3	ELEC ENG 2800	Electrical Circuits	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 MTH 242	Linear Algebra or Engineering Statistics	3	MATH 3108 or STAT 3115*	Linear Algebra I or Engineering Statistics* pending approval for substitution <small>Satisfies the Advanced Math/Stat elective requirement. *STAT 3115 will be substituted for STAT 3113, pending approval.</small>	3
PHL 203	Ethics <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
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. *At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
ENG 210 or ENG 211 or ENG 221 or ENG 222 or ENG 124 or HST 101* or HST 102* or ART 101 or MUS 101 or THE 101 or Literature	Survey British Lit: Beginnings - 1784 or Survey British Lit: Romantic-Present or Survey American Lit: Beginnings - 1865 or Survey American Lit: 1865-Present or World Literature I or US History to 1877* or US History Since 1877* or Art Appreciation or Music Appreciation or Theatre Appreciation or Any literature with prerequisite of no more than English Composition I. <small>*Satisfies the State of Missouri government requirement.</small>	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. <small>*Satisfies the State of Missouri government requirement.</small>	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
CIV 201 or CIV 202* or GRY 101 or PHL 101 or PHL 111 or PSC 102* or PSY 101 or ECO 102 or ECO 101 or Foreign Language	Western Civilization I or Western Civilization II* or World Geography or Intro to Philosophy or Intro to Logic or US Government I: National and State* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	6	HISTORY 1100 or HISTORY 1200* or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or Modern Western Civilization* or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	6
Humanities, Arts, and Social Sciences Select 3 hours.					
HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3	HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3
No free electives applied to the degree.					
		0		Maximum Free Electives	0
		45		Group 2 Major Requirements	44
		32		Group 1 Core Requirements	27
	Total Hours	77		Total Hours*	71

*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	3	MECH ENG 1720 Intro to Engineering Design	3	
ENG 102 or ENG 104 or COM 110	English Composition II or Technical Writing or Public Speaking	3	ENGLISH 1160 or ENGLISH 3560 or SPMS 1185 Writing and Research or Technical Writing or Principles of Speech	3	
CHM 111	General Chemistry I and Lab	5	CHEM 1310*, 1319 General Chemistry I and Lab	5	
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	
GEO 101	Intro to Physical Geology	3	GEOLOGY 1110 (GEO ENG 1150) Physical and Environmental Geology	3	
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 12 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. *At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.					
Humanities and Fine Arts Select 3 hours.					
ENG 210 or ENG 211 or ENG 221 or ENG 222 or ENG 124 or HST 101* or HST 102* or MUS 101 or THE 101 or Literature	Survey British Lit: Beginnings - 1784 or Survey British Lit: Romantic-Present or Survey American Lit: Beginnings - 1865 or Survey American Lit: 1865-Present or World Literature I or US History to 1877* or US History Since 1877* or Music Appreciation or Theatre Appreciation or Any literature with prerequisite of no more than English Composition I. *Satisfies the State of Missouri government requirement.	3	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or MUSIC 1150 or THEATRE 1190 or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. *Satisfies the State of Missouri government requirement.	3
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines, to include HISTORY 1200.					
CIV 202*	Western Civilization II* *Satisfies the State of Missouri Government requirement.	3	HISTORY 1200*	Modern Western Civilization* *Satisfies the State of Missouri Government requirement.	3
PHL 101 or PHL 111 or PSC 102* or PSY 101 or ECO 102 or ECO 101 or Foreign Language	Intro to Philosophy or Intro to Logic or US Government I: National and State* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	3	PHILOS 1105 or PHILOS 1115 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	3
Humanities, Arts, and Social Sciences Select 3 hours.					
HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3	HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3
<i>No free electives applied to the degree.</i>		0	Maximum Free Electives		0
		35	Group 2 Major Requirements		34
		32	Group 1 Core Requirements		27
Total Hours		67			Total Hours* 61

*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

East Central College		Semester	Missouri S&T		
COM 110	Public Speaking	3	SP&MS 1185	Principles of Speech <small>Applies to degree as Gen Ed Communication requirement.</small>	3
CHM 111	General Chemistry I and Lab	5	CHEM 1310, 1319	General Chemistry I and Lab	5
CHM 112	General Chemistry II and Lab	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis* (2) <small>*CHEM 1510 is not a degree requirement, transfers as general elective credit.</small>	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 <small>Applies to degree as Track Elective.</small>	4
EGR 251 or EGR 221, 222	Data Structures or C++ Programming for Engineers	4	COMP SCI 1500 or COMP SCI 1971,1981*	Computational Problem Solving or Intro to Programming Methodology and Lab* C++ <small>*Will be substituted for COMP SCI 1500.</small>	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 12 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 3 hours Behavioral and Social Sciences. *At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
ENG 210 or ENG 211 or ENG 221 or ENG 222 or ENG 124 or HST 101* or HST 102* or ART 101 or MUS 101 or THE 101 or Literature	Survey British Lit: Beginnings - 1784 or Survey British Lit: Romantic-Present or Survey American Lit: Beginnings - 1865 or Survey American Lit: 1865-Present or World Literature I or US History to 1877* or US History Since 1877* or Art Appreciation or Music Appreciation or Theatre Appreciation or Any literature with prerequisite of no more than English Composition I. <small>*Satisfies the State of Missouri government requirement.</small>	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. <small>*Satisfies the State of Missouri government requirement.</small>	6
Behavioral and Social Sciences Select 3 hours.					
CIV 201 or CIV 202* or GRY 101 or PSC 102* or PSY 101 or ECO 102 or ECO 101 or Foreign Language	Western Civilization I or Western Civilization II* or World Geography or US Government I: National and State* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	3	HISTORY 1100 or HISTORY 1200* or HISTORY 2110 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or Modern Western Civilization* or World Regional Geography or American Government* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	3
Humanities, Arts, and Social Sciences ENGLISH 3560 required.					
ENG 104	Technical Writing	3	ENGLISH 3560	Technical Writing	3
<i>No free electives applied to the degree.</i>					
		0		Maximum Free Electives	0
		39		Group 2 Major Requirements	34
		32		Group 1 Core Requirements	27
	Total Hours	71		Total Hours*	61

*S&T advisor permission is required to transfer more than 69 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 <small>Applies to degree as Gen Ed Communication requirement.</small>	3
CHM 111	General Chemistry I and Lab	5	CHEM 1310, 1319	General Chemistry I and Lab	5
CHM 112	General Chemistry II and Lab	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not a degree requirement, transfers as general elective credit.</small>	3
CHM 205	Organic Chemistry I and Lab	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
CHM 206	Organic Chemistry II and Lab	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
BIO 111	General Biology and Lab	5	BIO SCI 1113*, 1219*	General Biology* and Lab* <small>*Applies to degree as Track Elective (Non-engineering).</small>	4
EGR 251 or EGR 221, 222	Data Structures or C++ Programming for Engineers	4	COMP SCI 1500 or COMP SCI 1971,1981*	Computational Problem Solving or Intro to Programming Methodology and Lab* C++ <small>*Will be substituted for COMP SCI 1500.</small>	3
EGR 203	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 231	Introductory Circuit Theory	3	ELEC ENG 2100**	Circuits I **A passing grade on the Missouri S&T EE Advancement Exam I is required to receive credit for EE 2100.	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 12 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 3 hours Behavioral and Social Sciences. *At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
ENG 210 or ENG 211 or ENG 221 or ENG 222 or ENG 124 or HST 101* or HST 102* or ART 101 or MUS 101 or THE 101 or Literature	Survey British Lit: Beginnings - 1784 or Survey British Lit: Romantic-Present or Survey American Lit: Beginnings - 1865 or Survey American Lit: 1865-Present or World Literature I or US History to 1877* or US History Since 1877* or Art Appreciation or Music Appreciation or Theatre Appreciation or Any literature with prerequisite of no more than English Composition I. <small>*Satisfies the State of Missouri government requirement.</small>	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. <small>*Satisfies the State of Missouri government requirement.</small>	6
Behavioral and Social Sciences Select 3 hours.					
CIV 201 or CIV 202* or GRY 101 or PSC 102* or PSY 101or ECO 102 or ECO 101 or Foreign Language	Western Civilization I or Western Civilization II* or World Geography or US Government I: National and State* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	3	HISTORY 1100 or HISTORY 1200* or HISTORY 2110 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or Modern Western Civilization* or World Regional Geography or American Government* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	3
Humanities, Arts, and Social Sciences ENGLISH 3560 required.					
ENG 104	Technical Writing	3	ENGLISH 3560	Technical Writing	3
<i>No free electives applied to the degree.</i>					
	Group 2 Major Requirements	50		Maximum Free Electives	0
	Group 1 Core Requirements	32		Group 2 Major Requirements	44
	Total Hours	82		Group 1 Core Requirements	27
				Total Hours*	71

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

Ceramic Engineering Group 2 Major Requirements

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
ENG 102 or ENG 104 or COM 110	English Composition II or Technical Writing or Public Speaking	3	ENGLISH 1160 or ENGLISH 3560 or SPMS 1185 Writing and Research or Technical Writing or Principles of Speech 3 <small>Applies to degree as Gen Ed Communication requirement.</small>
EGR 203	Engineering Mechanics-Statics	3	CIV ENG 2200 Engineering Mechanics-Statics 3
CHM 111	General Chemistry I and Lab	5	CHEM 1310, 1319 General Chemistry I and Lab 5
CHM 112	General Chemistry II Lecture and Lab	5	CHEM 1320, 1510* General Chemistry II (3) and Qualitative Analysis (2) 3 <small>*CHEM 1510 is not a degree requirement, transfers as general elective credit.</small>
EGR 251 or EGR 221, 222	Data Structures or C++ Programming for Engineers	4	COMP SCI 1500 or COMP SCI 1971,1981* Computational Problem Solving or Intro to Programming Methodology and Lab* C++ 3 <small>*Will be substituted for COMP SCI 1500.</small>
MTH 242	Engineering Statistics	3	STAT 3115 Applied Engineering Statistics or any statistics course 3000-level or higher. Satisfies statistics elective requirement. 3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. *At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.			
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.			
ENG 210 or ENG 211 or ENG 221 or ENG 222 or ENG 124 or HST 101* or HST 102* or ART 101 or MUS 101 or THE 101 or Literature	Survey British Lit: Beginnings - 1784 or Survey British Lit: Romantic-Present or Survey American Lit: Beginnings - 1865 or Survey American Lit: 1865-Present or World Literature I or US History to 1877* or US History Since 1877* or Art Appreciation or Music Appreciation or Theatre Appreciation or Any literature with prerequisite of no more than English Composition I. <small>*Satisfies the State of Missouri government requirement.</small>	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. <small>*Satisfies the State of Missouri government requirement.</small>
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.			
CIV 201 or CIV 202* or GRY 101 or PHL 101 or PHL 111 or PSC 102* or PSY 101 or ECO 102 or ECO 101 or Foreign Language	Western Civilization I or Western Civilization II* or World Geography or Intro to Philosophy or Intro to Logic or US Government I: National and State* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	6	HISTORY 1100 or HISTORY 1200* or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language Early Western Civilization or Modern Western Civilization* or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>
Humanities, Arts, and Social Sciences Select 3 hours.			
HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3	HASS Elective Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or 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 38
	Group 1 Core Requirements	32	Group 1 Core Requirements 27
	Total Hours	73	Total Hours* 65

*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
COM 110	Public Speaking	3	SP&MS 1185	Principles of Speech <small>Applies to degree as Gen Ed Communication requirement.</small>	3
CHM 111	General Chemistry I and Lab	5	CHEM 1310, 1319	General Chemistry I and Lab	5
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 a degree requirement, transfers as general elective credit.</small>	3
CHM 205	Organic Chemistry I Lecture and Lab	5	CHEM 2210, 2219*	Organic Chemistry I and Lab* <small>*CHEM 2210 is a degree requirement. CHEM 2219 applies to the degree as 1 of 9 required science elective credits See note 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 251 or EGR 221, 222	Data Structures or C++ Programming for Engineers	4	COMP SCI 1500 or COMP SCI 1971,1981*	Computational Problem Solving or Intro to Programming Methodology and Lab* C++ <small>*Will be substituted for COMP SCI 1500.</small>	3
MTH 242	Engineering Statistics	3	STAT 3115*	Engineering Statistics* <small>*Will be substituted for STAT 3113.</small>	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. *At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
ENG 210 or ENG 211 or ENG 221 or ENG 222 or ENG 124 or HST 101* or HST 102* or ART 101 or MUS 101 or THE 101 or Literature	Survey British Lit: Beginnings - 1784 or Survey British Lit: Romantic-Present or Survey American Lit: Beginnings - 1865 or Survey American Lit: 1865-Present or World Literature I or US History to 1877* or US History Since 1877* or Art Appreciation or Music Appreciation or Theatre Appreciation or Any literature with prerequisite of no more than English Composition I. <small>*Satisfies the State of Missouri government requirement.</small>	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. <small>*Satisfies the State of Missouri government requirement.</small>	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
CIV 201 or CIV 202* or GRY 101 or PHL 101 or PHL 111 or PSC 102* or PSY 101 or ECO 102 or ECO 101 or Foreign Language	Western Civilization I or Western Civilization II* or World Geography or Intro to Philosophy or Intro to Logic or US Government I: National and State* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	6	HISTORY 1100 or HISTORY 1200* or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or Modern Western Civilization* or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	6
Humanities, Arts, and Social Sciences ENGLISH 3560 required.					
ENG 104	Technical Writing	3	ENGLISH 3560	Technical Writing	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	52		Group 2 Major Requirements	47
	Group 1 Core Requirements	32		Group 1 Core Requirements	27
	Total Hours	84		Total Hours*	74

*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 ENG 104 or COM 110 English Composition II or Technical Writing or Public Speaking	3	ENGLISH 1160 or ENGLISH 3560 or SPMS 1185 Writing and Research or Technical Writing or Principles of Speech <small>Applies to degree as Gen Ed Communication requirement.</small>	3
CHM 111 General Chemistry I and Lab	5	CHEM 1310*, 1319 General Chemistry I* and Lab <small>*CHEM 1310 will be substituted for CHEM 1305.</small>	5
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* <small>*Will be substituted for STAT 3113.</small>	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. *At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.			
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.			
ENG 210 or ENG 211 or ENG 221 or ENG 222 or ENG 124 or HST 101* or HST 102* or ART 101 or MUS 101 or THE 101 or Literature	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	6
Survey British Lit: Beginnings - 1784 or Survey British Lit: Romantic-Present or Survey American Lit: Beginnings - 1865 or Survey American Lit: 1865-Present or World Literature I or US History to 1877* or US History Since 1877* or Art Appreciation or Music Appreciation or Theatre Appreciation or Any literature with prerequisite of no more than English Composition I. <small>*Satisfies the State of Missouri government requirement.</small>			
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.			
CIV 201 or CIV 202* or GRY 101 or PHL 101 or PHL 111 or PSC 102* or PSY 101 or ECO 102 or ECO 101 or Foreign Language	6	HISTORY 1100 or HISTORY 1200* or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	6
Western Civilization I or Western Civilization II* or World Geography or Intro to Philosophy or Intro to Logic or US Government I: National and State* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>			
Humanities, Arts, and Social Sciences Select 3 hours.			
HASS Elective	3	HASS Elective	3
Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.			
<i>No free electives applied to the degree.</i>		0	0
Group 2 Major Requirements		38	37
Group 1 Core Requirements		32	27
Total Hours		70	Total Hours* 70

*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 <small>Applies to degree as Gen Ed Communication requirement.</small>	3
CHM 111	General Chemistry I and Lab	5	CHEM 1310*, 1319	General Chemistry I* and Lab <small>*CHEM 1310 will be substituted for CHEM 1305.</small>	5
EGR 251 or EGR 221,222	Data Structures or C++ Programming for Engineers	3	COMP SCI 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) <small>Satisfies a required engineering/science elective. *CHEM 2219 is not an S&T degree requirement; transfers as general elective credit.</small>	3
EGR 231	Introductory Circuit Theory	3	ELEC ENG 2100**	Circuits I **A passing grade on the Missouri S&T EE Advancement Exam I is required to receive credit for EE 2100.	4
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, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. *At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
ENG 210 or ENG 211 or ENG 221 or ENG 222 or ENG 124 or HST 101* or HST 102* or ART 101 or MUS 101 or THE 101 or Literature	Survey British Lit: Beginnings - 1784 or Survey British Lit: Romantic-Present or Survey American Lit: Beginnings - 1865 or Survey American Lit: 1865-Present or World Literature I or US History to 1877* or US History Since 1877* or Art Appreciation or Music Appreciation or Theatre Appreciation or Any literature with prerequisite of no more than English Composition I. <small>*Satisfies the State of Missouri government requirement.</small>	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. <small>*Satisfies the State of Missouri government requirement.</small>	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
CIV 201 or CIV 202* or GRY 101 or PHL 101 or PHL 111 or PSC 102* or PSY 101 or ECO 102 or ECO 101 or Foreign Language	Western Civilization I or Western Civilization II* or World Geography or Intro to Philosophy or Intro to Logic or US Government I: National and State* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	6	HISTORY 1100 or HISTORY 1200* or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or Modern Western Civilization* or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	6
Humanities, Arts, and Social Sciences Select 3 hours.					
ENG 102 or ENG 104	English Composition II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
Electives	Maximum Free Electives	3	Electives	Maximum Free Electives	3
	Group 2 Major Requirements	41		Group 2 Major Requirements	42
	Group 1 Core Requirements	32		Group 1 Core Requirements	27
	Total Hours	73		Total Hours*	69

*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	Intro to Engineering Design	3
COM 110	Public Speaking	3	SPMS 1185	Principles of Speech <small>Applies to degree as Gen Ed Communication requirement.</small>	3
CHM 111	General Chemistry I and Lab	5	CHEM 1310*, 1319	General Chemistry I* and Lab <small>*CHEM 1310 will be substituted for CHEM 1305.</small>	5
EGR 251 or EGR 221,222	Data Structures or C++ Programming for Engineers	3	COMP SCI 1500	Computational Problem Solving	3
EGR 213 and EGR 214 <small>(BOTH of the courses above or ONE of the courses below.)</small>	Engineering Mechanics-Statics (3) and Engineering Mechanics- Dynamics (3) <small>(Both courses above combined or the one course below will satisfy a required engineering science elective.)</small>	3	CIV ENG 2200 and MECH ENG 2350 <small>BOTH of the courses above or ONE of the courses below.</small>	Engineering Mechanics-Statics (3) and Engineering Mechanics-Dynamics (2) <small>Both courses above combined or any one of the following courses satisfies a required engineering science elective.</small>	3
OR CHEM 205	OR Organic Chemistry I and Lab (5) <small>*A maximum of 3 credit hours applies to the engineering science elective. Any additional credit hours apply to degree totals as general elective credit.</small>	3	OR CHEM 2210, 2219*	OR Organic Chemistry I (3) and Lab* (1) <small>Satisfies a required engineering/science elective. *CHEM 2219 is not an S&T degree requirement; transfers as general elective credit.</small>	3
EGR 231	Introductory Circuit Theory	3	ELEC ENG 2100*, 2101	Circuits I* (3) and Circuit Analysis Lab (1) <small>*A passing grade on the Missouri S&T ELEC ENG 2100 final exam is required to receive credit for ELEC ENG 2100.</small>	4
MTH 241	Linear Algebra	3	MATH 3108	Linear Algebra	3
MTH 242	Engineering Statistics	3	STAT 3115*	Engineering Statistics* <small>*Will be substituted for STAT 3117.</small>	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. *At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
ENG 210 or ENG 211 or ENG 221 or ENG 222 or ENG 124 or HST 101* or HST 102* or ART 101 or MUS 101 or THE 101 or Literature	Survey British Lit: Beginnings - 1784 or Survey British Lit: Romantic-Present or Survey American Lit: Beginnings - 1865 or Survey American Lit: 1865-Present or World Literature I or US History to 1877* or US History Since 1877* or Art Appreciation or Music Appreciation or Theatre Appreciation or Any literature with prerequisite of no more than English Composition I. <small>*Satisfies the State of Missouri government requirement.</small>	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. <small>*Satisfies the State of Missouri government requirement.</small>	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
CIV 201 or CIV 202* or GRY 101 or PHL 101 or PHL 111 or PSC 102* or PSY 101 or ECO 102 or ECO 101 or Foreign Language	Western Civilization I or Western Civilization II* or World Geography or Intro to Philosophy or Intro to Logic or US Government I: National and State* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	6	HISTORY 1100 or HISTORY 1200* or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or Modern Western Civilization* or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	6
Humanities, Arts, and Social Sciences Select 3 hours.					
ENG 102 or ENG 104	English Composition II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
Electives	Maximum Free Electives	6	Electives	Maximum Free Electives	6
	Group 2 Major Requirements	47		Group 2 Major Requirements	48
	Group 1 Core Requirements	32		Group 1 Core Requirements	27
	Total Hours	79		Total Hours*	75

*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	Intro to Engineering Design	3
COM 110	Public Speaking	3	SPMS 1185	Principles of Speech <small>Applies to degree as Gen Ed Communication requirement.</small>	3
CHM 111	General Chemistry I and Lab	5	CHEM 1310, 1319	General Chemistry I and Lab	5
EGR 221, 222	C++ Programming for Engineers	4	COMP SCI 1971, 1981	Intro to Programming Method and Lab (C++)	3
EGR 231	Introductory Circuit Theory	3	ELEC ENG 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* <small>*Will be substituted for the STAT 3115/3117 requirement.</small>	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. *At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
ENG 210 or ENG 211 or ENG 221 or ENG 222 or ENG 124 or HST 101* or HST 102* or ART 101 or MUS 101 or THE 101 or Literature	Survey British Lit: Beginnings - 1784 or Survey British Lit: Romantic-Present or Survey American Lit: Beginnings - 1865 or Survey American Lit: 1865-Present or World Literature I or US History to 1877* or US History Since 1877* or Art Appreciation or Music Appreciation or Theatre Appreciation or Any literature with prerequisite of no more than English Composition I. <small>*Satisfies the State of Missouri government requirement.</small>	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. <small>*Satisfies the State of Missouri government requirement.</small>	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines to include PSYCH 1101.					
PSY 101	General Psychology	3	PSYCH 1101	General Psychology <small>Required</small>	3
CIV 201 or CIV 202* or GRY 101 or PHL 101 or PHL 111 or PSC 102* ECO 102 or ECO 101 or Foreign Language	Western Civilization I or Western Civilization II* or World Geography or Intro to Philosophy or Intro to Logic or US Government I: National and State* or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	3	HISTORY 1100 or HISTORY 1200* or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or POL SCI 1200* or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or Modern Western Civilization* or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government* or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	3
Humanities, Arts, and Social Sciences Select 3 hours.					
ENG 102 or ENG 104	English Composition II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
<i>No free electives applied to the degree.</i>					
	Group 2 Major Requirements	42	Electives	Maximum Free Electives	0
	Group 1 Core Requirements	32		Group 2 Major Requirements	40
	Total Hours	74		Group 1 Core Requirements	27
				Total Hours*	61

*S&T advisor permission is required to transfer more than 61 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
ENG 102 or ENG 104 or COM 110	English Composition II or Technical Writing or Public Speaking	3	ENGLISH 1160 or ENGLISH 3560 or SPMS 1185	Writing and Research or Technical Writing or Principles of Speech <small>Applies to degree as Gen Ed Communication requirement.</small>
GEO 101	Intro to Physical Geology	3	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology
CHM 111	General Chemistry I and Lab	5	CHEM 1310, 1319	General Chemistry I and Lab
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 a degree requirement, transfers as general elective credit.</small>
BIO 111	General Biology Lecture and Lab	5	BIO SCI 1113, 1219*	General Biology (3) and Lab* (1) <small>*The lab is not a degree requirement, transfers as general elective credit.</small>
EGR 203	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics
EGR 214	Engineering Mechanics-Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics
MTH 242	Engineering Statistics	3	STAT 3115*	Engineering Statistics* <small>*Will be substituted for the STAT 3113.</small>
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 12 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. *At least one course must be selected from HISTORY 1200, 1300, or 1310 to satisfy the State of Missouri government requirement and a degree-specific gen ed requirement.				
Humanities and Fine Arts Select 6 hours from at least two specific disciplines. At least one course in either the HFA or the BSS (below) section must be selected from HISTORY 1200, 1300, or 1310.				
ENG 210 or ENG 211 or ENG 221 or ENG 222 or ENG 124 or HST 101* or HST 102* or ART 101 or MUS 101 or THE 101 or Literature	Survey British Lit: Beginnings - 1784 or Survey British Lit: Romantic-Present or Survey American Lit: Beginnings - 1865 or Survey American Lit: 1865-Present or World Literature I or US History to 1877* or US History Since 1877* or Art Appreciation or Music Appreciation or Theatre Appreciation or Any literature with prerequisite of no more than English Composition I. <small>*Satisfies the State of Missouri government requirement and a degree-specific gen ed requirement.</small>	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or ART 3203 or MUSIC 1150 or THEATRE 1190 or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Art Appreciation or Architectural Design I or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. <small>*Satisfies the State of Missouri government requirement and a degree-specific gen ed requirement.</small>
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.. At least one course in either the HFA (above) or the BSS section must be selected from HISTORY 1200, 1300, or 1310.				
CIV 202* or PHL 101 or PHL 111 or PSC 102* or SY 101 or ECO 102 or ECO 101 or Foreign Language	Western Civilization II* or Intro to Philosophy or Intro to Logic or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement and a degree-specific gen ed requirement.</small>	3	HISTORY 1200* or PHILOS 1105 or PHILOS 1115 or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Modern Western Civilization* or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement and a degree-specific gen ed requirement.</small>
<i>No free electives applied to the degree.</i>				
		0		0
	Group 2 Major Requirements	42		37
	Group 1 Core Requirements	32		27
	Total Hours	74		Total Hours* 64
<small>*S&T advisor permission is required to transfer more than 69 credits toward the S&T Environmental Engineering degree.</small>				

Geological 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 104	Technical Writing	3	ENGLISH 3560	Technical Writing <small>Applies to degree as Gen Ed Communication requirement.</small>	3
CHM 111	General Chemistry I and Lab	5	CHEM 1310*, 1319	General Chemistry I* and Lab <small>*CHEM 1310 will be substituted for CHEM 1305.</small>	5
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, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. *At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
ENG 210 or ENG 211 or ENG 221 or ENG 222 or ENG 124 or HST 101* or HST 102* or ART 101 or MUS 101 or THE 101 or Literature	Survey British Lit: Beginnings - 1784 or Survey British Lit: Romantic-Present or Survey American Lit: Beginnings - 1865 or Survey American Lit: 1865-Present or World Literature I or US History to 1877* or US History Since 1877* or Art Appreciation or Music Appreciation or Theatre Appreciation or Any literature with prerequisite of no more than English Composition I. <small>*Satisfies the State of Missouri government requirement.</small>	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. <small>*Satisfies the State of Missouri government requirement.</small>	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
CIV 201 or CIV 202* or GRY 101 or PHL 101 or PHL 111 or PSC 102* or PSY 101 or ECO 102 or ECO 101 or Foreign Language	Western Civilization I or Western Civilization II* or World Geography or Intro to Philosophy or Intro to Logic or US Government I: National and State* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	6	HISTORY 1100 or HISTORY 1200* or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or Modern Western Civilization* or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	6
Humanities, Arts, and Social Sciences Select 3 hours.					
HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3	HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3
<i>No free electives applied to the degree.</i>		0			0
		38			37
		32			27
Total Hours		70			Total Hours*
					64

*S&T advisor permission is required to transfer more than 65 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	Intro to Engineering Design	3
ENG 102 or ENG 104 or COM 110	English Composition II or Technical Writing or Public Speaking	3	ENGLISH 1160 or ENGLISH 3560 or SPMS 1185	Writing and Research or Technical Writing or Principles of Speech <small>Applies to degree as Gen Ed Communication requirement.</small>	3
CHM 111	General Chemistry I and Lab	5	CHEM 1310*, 1319	General Chemistry I and Lab <small>*CHEM 1310 will be substituted for CHEM 1305.</small>	5
EGR 221, 222	C++ Program Engineers and Lab	4	COMP SCI 1971, 1981	Intro to Programming Method and Lab (C++)	3
EGR 231	Introductory Circuit Theory	3	ELEC ENG 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
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. *At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
ENG 210 or ENG 211 or ENG 221 or ENG 222 or ENG 124 or HST 101* or HST 102* or ART 101 or MUS 101 or THE 101 or Literature	Survey British Lit: Beginnings - 1784 or Survey British Lit: Romantic-Present or Survey American Lit: Beginnings - 1865 or Survey American Lit: 1865-Present or World Literature I or US History to 1877* or US History Since 1877* or Art Appreciation or Music Appreciation or Theatre Appreciation or Any literature with prerequisite of no more than English Composition I. <small>*Satisfies the State of Missouri government requirement.</small>	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. <small>*Satisfies the State of Missouri government requirement.</small>	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
CIV 201 or CIV 202* or GRY 101 or PHL 101 or PHL 111 or PSC 102* or PSY 101 or ECO 102 or ECO 101 or Foreign Language	Western Civilization I or Western Civilization II* or World Geography or Intro to Philosophy or Intro to Logic or US Government I: National and State* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	6	HISTORY 1100 or HISTORY 1200* or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or Modern Western Civilization* or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	6
Humanities, Arts, and Social Sciences Select 3 hours.					
HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3	HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3
<i>No free electives applied to the degree.</i>					
	Group 2 Major Requirements	42		Maximum Free Electives	0
	Group 1 Core Requirements	32		Group 2 Major Requirements	41
	Total Hours	74		Group 1 Core Requirements	27
				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	Intro to Engineering Design	3
ENG 102 or ENG 104 or COM 110	English Composition II or Technical Writing or Public Speaking	3	ENGLISH 1160 or ENGLISH 3560 or SPMS 1185	Writing and Research or Technical Writing or Principles of Speech <small>Applies to degree as Gen Ed Communication requirement.</small>	3
EGR 251 or EGR 221, 222	Data Structures or C++ Programming for Engineers	4	COMP SCI 1500 or COMP SCI 1971,1981*	Computational Problem Solving or Intro to Programming Methodology and Lab* C++ <small>*Will be substituted for COMP SCI 1500.</small>	3
MTH 242	Engineering Statistics	3	STAT 3115	Engineering Statistics <small>Will be substituted for STAT 3113.</small>	3
EGR 203	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
CHM 111	General Chemistry I and Lab	5	CHEM 1310, 1319	General Chemistry I and Lab	5
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 a degree requirement, transfers as general elective credit.</small>	3
CHEM 205 or EGR 231	Organic Chemistry I and Lab or Introductory Circuit Theory	3	CHEM 2210, 2219* or ELEC ENG 2800	Organic Chemistry I (3) and Lab (1) 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; transfers as general elective credit.</small>	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. *At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
ENG 210 or ENG 211 or ENG 221 or ENG 222 or ENG 124 or HST 101* or HST 102* or ART 101 or MUS 101 or THE 101 or Literature	Survey British Lit: Beginnings - 1784 or Survey British Lit: Romantic-Present or Survey American Lit: Beginnings - 1865 or Survey American Lit: 1865-Present or World Literature I or US History to 1877* or US History Since 1877* or Art Appreciation or Music Appreciation or Theatre Appreciation or Any literature with prerequisite of no more than English Composition I. <small>*Satisfies the State of Missouri government requirement.</small>	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. <small>*Satisfies the State of Missouri government requirement.</small>	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
CIV 201 or CIV 202* or GRY 101 or PHL 101 or PHL 111 or PSC 102* or PSY 101 or ECO 102 or ECO 101 or Foreign Language	Western Civilization I or Western Civilization II* or World Geography or Intro to Philosophy or Intro to Logic or US Government I: National and State* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	6	HISTORY 1100 or HISTORY 1200* or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or Modern Western Civilization* or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	6
Humanities, Arts, and Social Sciences Select 3 hours.					
HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3	HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3
<i>No free electives applied to the degree.</i>					
	Group 2 Major Requirements	47		Maximum Free Electives	0
	Group 1 Core Requirements	32		Group 2 Major Requirements	41
		Total Hours 79		Group 1 Core Requirements	27
				Total Hours*	68

*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 or COM 110	English Composition II or Technical Writing or Public Speaking	3	ENGLISH 1160 or ENGLISH 3560 or SPMS 1185	Writing and Research or Technical Writing or Principles of Speech <small>Applies to degree as Gen Ed Communication requirement.</small>	3
MTH 242	Engineering Statistics	3	STAT 3115	Engineering Statistics <small>will be substituted for STAT 3113.</small>	3
CHM 111	General Chemistry I and Lab	5	CHEM 1310, 1319	General Chemistry I and Lab	5
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, Arts, and Social Sciences General Education Requirements					
From the options listed in each group below, select 12 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines.					
*At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.					
Humanities and Fine Arts					
Select 6 hours from at least two specific disciplines.					
ENG 210 or ENG 211 or ENG 221 or ENG 222 or ENG 124 or HST 101* or HST 102* or ART 101 or MUS 101 or THE 101 or Literature	Survey British Lit: Beginnings - 1784 or Survey British Lit: Romantic-Present or Survey American Lit: Beginnings - 1865 or Survey American Lit: 1865-Present or World Literature I or US History to 1877* or US History Since 1877* or Art Appreciation or Music Appreciation or Theatre Appreciation or Any literature with prerequisite of no more than English Composition I. <small>*Satisfies the State of Missouri government requirement.</small>	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. <small>*Satisfies the State of Missouri government requirement.</small>	6
Behavioral and Social Sciences					
Select 6 hours from at least two specific disciplines.					
CIV 201 or CIV 202* or GRY 101 or PHL 101 or PHL 111 or PSC 102* or PSY 101 or ECO 102 or ECO 101 or Foreign Language	Western Civilization I or Western Civilization II* or World Geography or Intro to Philosophy or Intro to Logic or US Government I: National and State* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	6	HISTORY 1100 or HISTORY 1200* or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or Modern Western Civilization* or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	6
<i>No free electives applied to the degree.</i>		0	Maximum Free Electives		0
		35	Group 2 Major Requirements		34
		32	Group 1 Core Requirements		27
Total Hours		67	Total Hours*		61
<small>*S&T advisor permission is required to transfer more than 68 credits toward the S&T Mining Engineering degree.</small>					

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 ENG 104 or COM 110	English Composition II or Technical Writing or Public Speaking	3	ENGLISH 1160 or ENGLISH 3560 or SPMS 1185	Writing and Research or Technical Writing or Principles of Speech <small>Applies to degree as Gen Ed Communication requirement.</small>	3
CHM 111	General Chemistry I and Lab	5	CHEM 1310, 1319	General Chemistry I and Lab	5
EGR 221,222	C++ Program Engineers and Lab	4	COMP SCI 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 <small>Will be substituted for the statistics requirement.</small>	3
EGR 231	Introductory Circuit Theory	3	ELEC ENG 2800	Electrical Circuits	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. *At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
ENG 210 or ENG 211 or ENG 221 or ENG 222 or ENG 124 or HST 101* or HST 102* or ART 101 or MUS 101 or THE 101 or Literature	Survey British Lit: Beginnings - 1784 or Survey British Lit: Romantic-Present or Survey American Lit: Beginnings - 1865 or Survey American Lit: 1865-Present or World Literature I or US History to 1877* or US History Since 1877* or Art Appreciation or Music Appreciation or Theatre Appreciation or Any literature with prerequisite of no more than English Composition I. <small>*Satisfies the State of Missouri government requirement.</small>	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. <small>*Satisfies the State of Missouri government requirement.</small>	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines to include either ECON 1100 or 1200.					
ECO 102 or ECO 101	Principles of Microeconomics or Principles of Macroeconomics	3	ECON 1100 or ECON 1200	Principles of Microeconomics or Principles of Macroeconomics	3
CIV 201 or CIV 202* or GRY 101 or PHL 101 or PHL 111 or PSC 102* or PSY 101 or Foreign Language	Western Civilization I or Western Civilization II* or World Geography or Intro to Philosophy or Intro to Logic or US Government I: National and State* or General Psychology or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	3	HISTORY 1100 or HISTORY 1200* or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or POL SCI 1200* or PSYCH 1101 or Foreign Language	Early Western Civilization or Modern Western Civilization* or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government* or General Psychology or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	3
Humanities, Arts, and Social Sciences Select 3 hours.					
HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3	HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3
		Maximum Free Electives			0
		Group 2 Major Requirements			42
		Group 1 Core Requirements			32
		Total Hours			74
				Maximum Free Electives	0
				Group 2 Major Requirements	41
				Group 1 Core Requirements	27
				Total Hours*	68

*S&T advisor permission is required to transfer more than 69 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>	
ENG 102 or ENG 104 or COM 110	English Composition II or Technical Writing or Public Speaking	3	ENGLISH 1160 or ENGLISH 3560 or SPMS 1185	3
CHM 111	General Chemistry I and Lab	5	CHEM 1310*, 1319	5
EGR 251	Data Structures	3	COMP SCI 1500	3
GEO 101	Intro to Physical Geology	3	GEOLOGY 1110 (GEO ENG 1150)	3
EGR 203	Engineering Mechanics-Statics	3	CIV ENG 2200	3
EGR 214	Engineering Mechanics-Dynamics	3	MECH ENG 2350	2
MTH 242	Engineering Statistics	3	STAT 3115	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. *At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.				
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.				
ENG 210 or ENG 211 or ENG 221 or ENG 222 or ENG 124 or HST 101* or HST 102* or ART 101 or MUS 101 or THE 101 or Literature	Survey British Lit: Beginnings - 1784 or Survey British Lit: Romantic-Present or Survey American Lit: Beginnings - 1865 or Survey American Lit: 1865-Present or World Literature I or US History to 1877* or US History Since 1877* or Art Appreciation or Music Appreciation or Theatre Appreciation or Any literature with prerequisite of no more than English Composition I. <small>*Satisfies the State of Missouri government requirement.</small>	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.				
CIV 201 or CIV 202* or GRY 101 or PHL 101 or PHL 111 or PSC 102* or PSY 101 or ECO 102 or ECO 101 or Foreign Language	Western Civilization I or Western Civilization II* or World Geography or Intro to Philosophy or Intro to Logic or US Government I: National and State* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	6	HISTORY 1100 or HISTORY 1200* or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	6
Humanities, Arts, and Social Sciences Select 3 hours.				
HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3	HASS Elective	3
<i>No free electives applied to the degree.</i>				
		0		0
	Group 2 Major Requirements	38		37
	Group 1 Core Requirements	32		27
	Total Hours	70		Total Hours* 64
<small>*S&T advisor permission is required to transfer more than 69 credits toward the S&T Petroleum Engineering degree.</small>				

Semiconductor Engineering-Device Engineering Emphasis Group 2 Major Requirements

Semiconductor Engineering-Device 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 102 or ENG 104 or COM 110	English Composition II or Technical Writing or Public Speaking	3	ENGLISH 1160 or ENGLISH 3560 or SPMS 1185	Writing and Research or Technical Writing or Principles of Speech <small>Applies to degree as Gen Ed Communication requirement.</small>	3
CHM 111	General Chemistry I and Lab	5	CHEM 1310, 1319	General Chemistry I and Lab	5
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 a degree requirement, transfers as general elective credit.</small>	3
EGR 231	Introductory Circuit Theory	3	ELEC ENG 2100*, 2101	Circuits I* (3) and Circuit Analysis Lab (1) <small>*A passing grade on the Missouri S&T ELEC ENG 2100 final exam is required to receive credit for ELEC ENG 2100.</small>	4
MTH 242	Engineering Statistics	3	STAT 3115*	Engineering Statistics* <small>*Will be substituted for STAT 3113.</small>	3
EGR 251	Data Structures	3	COMP SCI 1500	Computational Problem Solving	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. *At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
ENG 210 or ENG 211 or ENG 221 or ENG 222 or ENG 124 or HST 101* or HST 102* or ART 101 or MUS 101 or THE 101 or Literature	Survey British Lit: Beginnings - 1784 or Survey British Lit: Romantic-Present or Survey American Lit: Beginnings - 1865 or Survey American Lit: 1865-Present or World Literature I or US History to 1877* or US History Since 1877* or Art Appreciation or Music Appreciation or Theatre Appreciation or Any literature with prerequisite of no more than English Composition I. <small>*Satisfies the State of Missouri government requirement.</small>	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. <small>*Satisfies the State of Missouri government requirement.</small>	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
CIV 201 or CIV 202* or GRY 101 or PHL 101 or PHL 111 or PSC 102* or PSY 101 or ECO 102 or ECO 101 or Foreign Language	Western Civilization I or Western Civilization II* or World Geography or Intro to Philosophy or Intro to Logic or US Government I: National and State* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	6	HISTORY 1100 or HISTORY 1200* or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or Modern Western Civilization* or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	6
Humanities, Arts, and Social Sciences Select 3 hours.					
HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3	HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3
		Maximum Free Electives			3
		Group 2 Major Requirements			43
		Group 1 Core Requirements			32
		Total Hours			75
					Maximum Free Electives
					Group 2 Major Requirements
					Group 1 Core Requirements
					Total Hours*
					69

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

Semiconductor Engineering-Process Engineering Emphasis Group 2 Major Requirements

Semiconductor Engineering-Process 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 102 or ENG 104 or COM 110	English Composition II or Technical Writing or Public Speaking	3	ENGLISH 1160 or ENGLISH 3560 or SPMS 1185	Writing and Research or Technical Writing or Principles of Speech <small>Applies to degree as Gen Ed Communication requirement.</small>	3
CHM 111	General Chemistry I and Lab	5	CHEM 1310, 1319	General Chemistry I and Lab	5
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 a degree requirement, transfers as general elective credit.</small>	3
EGR 231	Introductory Circuit Theory	3	ELEC ENG 2100*, 2101	Circuits I* (3) and Circuit Analysis Lab (1) <small>*A passing grade on the Missouri S&T ELEC ENG 2100 final exam is required to receive credit for ELEC ENG 2100.</small>	4
MTH 242	Engineering Statistics	3	STAT 3115*	Engineering Statistics* <small>*Will be substituted for STAT 3113.</small>	3
EGR 251	Data Structures	3	COMP SCI 1500	Computational Problem Solving	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. *At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
ENG 210 or ENG 211 or ENG 221 or ENG 222 or ENG 124 or HST 101* or HST 102* or ART 101 or MUS 101 or THE 101 or Literature	Survey British Lit: Beginnings - 1784 or Survey British Lit: Romantic-Present or Survey American Lit: Beginnings - 1865 or Survey American Lit: 1865-Present or World Literature I or US History to 1877* or US History Since 1877* or Art Appreciation or Music Appreciation or Theatre Appreciation or Any literature with prerequisite of no more than English Composition I. <small>*Satisfies the State of Missouri government requirement.</small>	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. <small>*Satisfies the State of Missouri government requirement.</small>	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
CIV 201 or CIV 202* or GRY 101 or PHL 101 or PHL 111 or PSC 102* or PSY 101 or ECO 102 or ECO 101 or Foreign Language	Western Civilization I or Western Civilization II* or World Geography or Intro to Philosophy or Intro to Logic or US Government I: National and State* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	6	HISTORY 1100 or HISTORY 1200* or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or Modern Western Civilization* or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	6
Humanities, Arts, and Social Sciences Select 3 hours.					
HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3	HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3
		Maximum Free Electives			3
		Group 2 Major Requirements			43
		Group 1 Core Requirements			32
		Total Hours			75
					Maximum Free Electives
					Group 2 Major Requirements
					Group 1 Core Requirements
					Total Hours*
					69

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