

Westminster College — Missouri S&T

General Engineering Transfer Guide

Effective as of Fall 2020

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>Westminster College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
MAT 124	Calculus I	5	MATH 1214	Calculus for Engineers I <small>Grade of C or better is required.</small>	4
MAT 214	Calculus II	4	MATH 1215	Calculus for Engineers II <small>Grade of C or better is required.</small>	4
MAT 224	Calculus III	4	MATH 2222	Calculus with Analytic Geometry III <small>Grade of C or better is required.</small>	4
MAT 312	Differential Equations	3	MATH 3304	Elementary Differential Equations	3
PHY 201	Physics I	4	PHYSICS 1135	Engineering Physics I <small>Grade of C or better is required.</small>	4
PHY 212	Physics II	4	PHYSICS 2135	Engineering Physics II <small>Grade of C or better is required.</small>	4
CHM 114, 115	General Chemistry I and Lab	4	CHEM 1310, 1319	General Chemistry I and Lab	5
ENG 103	Academic Writing	3	ENGLISH 1120	Exposition and Argumentation	3
ECON 212 or ECON 211	Principles of Microeconomics or Principles of Macroeconomics	3	ECON 1100 or ECON 1200	Principles of Microeconomics or Principles of Macroeconomics	3
Total Hours		34	Total Hours		34

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

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

Aerospace Engineering
Architectural Engineering
Ceramic Engineering
Chemical Engineering
**Chemical Engineering/Biochemistry
Emphasis**
Civil Engineering
Computer Engineering
Electrical Engineering

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

Engineering Major Requirements are detailed on the following pages.

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

Humanities/Social Science (HSS) Electives: HSS electives may include any history, economics, political science, sociology, psychology, philosophy, fine art, literature, or foreign language. Missouri S&T approved HSS courses are listed at ugs.mst.edu. Your campus may have additional acceptable options. Consult with your advisor or email transfer@mst.edu with questions.

Aerospace Engineering Group 2 Major Requirements

<u>Westminster College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 101	Intro to Engineering Design	3	MECH ENG 1720	Engineering Design with Computer Applications	3
HIS 103 or HIS 104 or HIS 106 or POL 211	U.S. History to 1890 or U.S. History since 1890 or Western Civilization II or American Government and Politics	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
SPE 101	Intro to Speech Communication	3	SPMS 1185	Principles of Speech	3
CSC 111	Fundamentals of Computer Science I	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
EGR 230	Engineering Mechanics-Statics	3	EE 2800	Circuit Analysis I	3
MAT 215 or MAT 313	Linear Algebra or Mathematical Probability and Statistics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
	Literature Elective	3	MATH 3108 or STAT 3115	Linear Algebra I or Engineering Statistics (Will satisfy the Advanced Math/Comp Sci elective requirement.)	3
	See your advisor for course options.	3		Literature Elective	3
	No free electives applied to the degree.	0		Ethics Elective	3
	Group 2 Major Requirements	27		Maximum Free Electives	0
	Group 1 Core Requirements	34		Group 2 Major Requirements	27
	Total Hours	61		Group 1 Core Requirements	34
				Total Hours*	61

*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>Westminster College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 101	Intro to Engineering Design	3	MECH ENG 1720	Engineering Design with Computer Applications	3
HIS 103 (or HIS 104 or HIS 106)	U.S. History to 1890 (or U.S. History since 1890 or Western Civilization II) <small>*HIS 103 is preferred; 104 or 106 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 230	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
MAT 313	Mathematical Probability and Statistics	3	STAT 3115	Engineering Statistics (Will be substituted for STAT 3113.)	3
SPE 101 or HSS Elective	Intro to Speech Communication or Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language	3	SPMS 1185 or HSS Elective	Public Speaking or Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language	3
GEO 108	Intro to Physical Geology	4	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	19		Group 2 Major Requirements	18
	Group 1 Core Requirements	34		Group 1 Core Requirements	34
	Total Hours	53		Total Hours*	52

*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

<u>Westminster College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 101	Intro to Engineering Design	3	MECH ENG 1720	Engineering Design with Computer Applications	3
HIS 103 or HIS 104 or HIS 106 or POL 211	U.S. History to 1890 or U.S. History since 1890 or Western Civilization II or American Government and Politics	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 230	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
CHM 314 or CHM 424	Organic Chemistry and Lab or Physical Chemistry I	3	CHEM 2210 or CHEM 3410	Organic Chemistry I (4) or Chemical Thermodynamics I (3) <small>(Not a specific requirement. Will satisfy the advanced chemistry elective requirement.)</small>	3
CHM 124	General Chemistry II	3	CHEM 1320	General Chemistry II	3
MAT 313	Mathematical Probability and Statistics	3	STAT 3115	Engineering Statistics <small>(or any statistics course 3000-level or higher. Satisfies statistics elective requirement.)</small>	3
PHY 223	Physics III	3	PHYS 2305	Intro to Modern Physics	3
SPE 101 or HSS Elective	Intro to Speech Communication or Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language	3	SPMS 1185 or HSS Elective	Public Speaking or Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language	3
	<i>See your advisor for course options.</i>	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	27
	Group 1 Core Requirements	34		Group 1 Core Requirements	34
	Total Hours	61		Total Hours*	61

*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

<u>Westminster College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 101	Intro to Engineering Design	3	MECH ENG 1720	Engineering Design with Computer Applications	3
HIS 103 or HIS 104 or HIS 106 or POL 211	U.S. History to 1890 or U.S. History since 1890 or Western Civilization II or American Government and Politics	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
CHM 124	General Chemistry II	3	CHEM 1320	General Chemistry II	3
CHM 314,315	Organic Chemistry I and Lab	3	CHEM 2210, 2219	Organic Chemistry I and Lab	5
CHM 324 or CHM 334,335 or BIO 325,206	Organic Chemistry II (3) or Analytical Chemistry I (3) and Lab (1) or Molecular Cell Biology (4) and Lab Instruction Techniques (1) <small>(Select up to 9 hours from these options.)</small>	9	CHEM 2220 or CHEM 2510 or BIO SCI 2213, 2219	Organic Chemistry II (4) or Analytical Chemistry (4) or Cell Biology and Lab (4) <small>(Will satisfy science elective requirement. Select up to 9 hours from these options.)</small>	9
CSC 111	Fundamentals of Computer Science I	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
MAT 313	Mathematical Probability and Statistics	3	STAT 3115	Engineering Statistics <small>(Will be substituted for STAT 3113.)</small>	3
SPE 101	Intro to Speech Communication	3	SPMS 1185	Principles of Speech	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	30		Group 2 Major Requirements	35
	Group 1 Core Requirements	34		Group 1 Core Requirements	34
	Total Hours	64		Total Hours*	69

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

Chemical Engineering - Biochemical Engineering Emphasis Group 2 Major Requirements

<u>Westminster College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 101	Intro to Engineering Design	3	MECH ENG 1720	Engineering Design with Computer Applications	3
HIS 103 or HIS 104 or HIS 106 or POL 211	U.S. History to 1890 or U.S. History since 1890 or Western Civilization II or American Government and Politics	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
CHM 124	General Chemistry II	3	CHEM 1320	General Chemistry II	3
CHM 314,315	Organic Chemistry I and Lab		CHEM 2210	Organic Chemistry I	4
CHM 324 or CHM 334,335 or BIO 325,206	Organic Chemistry II (3) or Analytical Chemistry I (3) and Lab (1) or Molecular Cell Biology (4) and Lab Instruction Techniques (1) (Select up to 9 hours from these options.)	9	CHEM 2220 or CHEM 2510 or BIO SCI 2213, 2219	Organic Chemistry II (4) or Analytical Chemistry (4) or Cell Biology and Lab (4) (Will satisfy science elective requirement. Select up to 9 hours from these options.)	9
CSC 111	Fundamentals of Computer Science I	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
MAT 313	Mathematical Probability and Statistics	3	STAT 3115	Engineering Statistics (Will be substituted for STAT 3113.)	3
SPE 101	Intro to Speech Communication	3	SPMS 1185	Principles of Speech	3
	See your advisor for course options.	3		Humanities/Social Science Elective	3
	No free electives applied to the degree.	0		Maximum Free Electives	0
	Group 2 Major Requirements	30		Group 2 Major Requirements	34
	Group 1 Core Requirements	34		Group 1 Core Requirements	34
	Total Hours	64		Total Hours*	68

*S&T advisor permission is required to transfer more than 71 credits toward the S&T Chemical/Biochemical Engineering degree.

Civil Engineering Group 2 Major Requirements

<u>Westminster College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 101	Intro to Engineering Design	3	MECH ENG 1720	Engineering Design with Computer Applications	3
SPE 101	Intro to Speech Communication	3	SPMS 1185	Principles of Speech	3
HIS 103 or HIS 104 or HIS 106 or POL 211	U.S. History to 1890 or U.S. History since 1890 or Western Civilization II or American Government and Politics	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 108	Intro to Physical Geology and Lab	4	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
EGR 230	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
MAT 313	Mathematical Probability and Statistics	3	STAT 3115	Engineering Statistics (Will be substituted for STAT 3113.)	3
	See your advisor for course options.	3		Humanities/Social Science Elective	3
	No free electives applied to the degree.	0		Maximum Free Electives	0
	Group 2 Major Requirements	22		Group 2 Major Requirements	21
	Group 1 Core Requirements	34		Group 1 Core Requirements	34
	Total Hours	56		Total Hours*	55

*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>Westminster College</u>	<u>Semester</u>	<u>Missouri S&T</u>			
SPE 101	Intro to Speech Communication	3	SPMS 1185	Principles of Speech	3
HIS 103 or	U.S. History to 1890 or	3	HISTORY 1300 or	American History to 1877 or	3
HIS 104 or	U.S. History since 1890 or		HISTORY 1310 or	American History since 1877 or	
HIS 106 or	Western Civilization II or		HISTORY 1200 or	Modern Western Civilization or	
POL 211	American Government and Politics		POL SCI 1200	American Government	
CSC 111	Fundamentals of Computer Science I	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
EGR 230 and	Engineering Mechanics-Statics (3) and	3-6	CIV ENG 2200 and	Engineering Mechanics-Statics (3) and	3-6
Dynamics at S&T	Dynamics to be taken at Missouri S&T (3)		MECH ENG 2350	Engineering Mechanics-Dynamics (3)	
(BOTH of the courses above or ONE of the courses below.)	(Both courses above combined or any one of the following courses will satisfy a required engineering science elective.)		(BOTH of the courses above or ONE of the courses below.)	(Both courses above combined or any one of the following courses will satisfy a required engineering science elective.)	
OR	OR		OR		
CHM 314 or	Organic Chemistry I (3) or	3	CHEM 2210 or	Organic Chemistry I (4) or	3
BIO 325 or	Molecular Cell Biology (4) or		BIO SCI 2213 or	Cell Biology (3) or	
BIO 301	Genetics (4)		BIO SCI 2223	General Genetics (3)	
	Analogue Circuits	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
MAT 215 or	Linear Algebra or	3	MATH 3108 or	Linear Algebra or	3
MAT 331	Mathematics Seminar		MATH 3109	Foundations of Mathematics (Will satisfy a required math elective.)	
MAT 313	Mathematical Probability and Statistics	3	STAT 3115	Engineering Statistics (Will be substituted for STAT 3117.)	3
	See your advisor for course options.	3		Humanities/Social Science Elective	3
	See your advisor for course options.	3		Maximum Free Electives	3
	Group 2 Major Requirements	24		Group 2 Major Requirements	24
	Group 1 Core Requirements	34		Group 1 Core Requirements	34
	Total Hours	58		Total Hours*	58

*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>Westminster College</u>	<u>Semester</u>	<u>Missouri S&T</u>			
EGR 101	Intro to Engineering Design	3	MECH ENG 1720	Engineering Design with Computer Applications	3
SPE 101	Intro to Speech Communication	3	SPMS 1185	Principles of Speech	3
HIS 103 or	U.S. History to 1890 or	3	HISTORY 1300 or	American History to 1877 or	3
HIS 104 or	U.S. History since 1890 or		HISTORY 1310 or	American History since 1877 or	
HIS 106 or	Western Civilization II or		HISTORY 1200 or	Modern Western Civilization or	
POL 211	American Government and Politics		POL SCI 1200	American Government	
EGR 230 and	Engineering Mechanics-Statics (3) and	3-6	CIV ENG 2200 and	Engineering Mechanics-Statics (3) and	3-6
Dynamics at S&T	Dynamics to be taken at Missouri S&T (3)		MECH ENG 2350	Engineering Mechanics-Dynamics (3)	
(BOTH of the courses above or ONE of the courses below.)	(Both courses above combined or any one of the following courses will satisfy a required engineering science elective.)		(BOTH of the courses above or ONE of the courses below.)	(Both courses above combined or any one of the following courses will satisfy a required engineering science elective.)	
OR	OR		OR		
CHM 314 or	Organic Chemistry I (3) or	3	CHEM 2210 or	Organic Chemistry I (4) or	3
BIO 325 or	Molecular Cell Biology (4) or		BIO SCI 2213 or	Cell Biology (3) or	
BIO 301	Genetics (4)		BIO SCI 2223	General Genetics (3)	
	Analogue Circuits	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
MAT 215	Linear Algebra	3	MATH 3108	Linear Algebra	3
MAT 313	Mathematical Probability and Statistics	3	STAT 3115	Engineering Statistics (Will be substituted for STAT 3117.)	3
	See your advisor for course options.	3		Humanities/Social Science Elective	3
	See your advisor for course options.	3		Maximum Free Electives	3
	Group 2 Major Requirements	24		Group 2 Major Requirements	24
	Group 1 Core Requirements	34		Group 1 Core Requirements	34
	Total Hours	58		Total Hours*	58

*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>Westminster College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 101	Intro to Engineering Design	3	MECH ENG 1720	Engineering Design with Computer Applications	3
PSY 112	Psychology as a Natural Science	3	PSYCH 1101	General Psychology	3
HIS 103 or	U.S. History to 1890 or		HISTORY 1300 or	American History to 1877 or	
HIS 104 or	U.S. History since 1890 or	3	HISTORY 1310 or	American History since 1877 or	
HIS 106 or	Western Civilization II or		HISTORY 1200 or	Modern Western Civilization or	3
POL 211	American Government and Politics		POL SCI 1200	American Government	
SPE 101	Intro to Speech Communication	3	SPMS 1185	Principles of Speech	3
CSC 111	Fundamentals of Computer Science I	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
	Analogue Circuits	3	EE 2800	Circuit Analysis I	3
EGR 230	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
MAT 313	Mathematical Probability and Statistics	3	STAT 3115	Engineering Statistics	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3		Maximum Free Electives	3
	Group 2 Major Requirements	30		Group 2 Major Requirements	30
	Group 1 Core Requirements	34		Group 1 Core Requirements	34
	Total Hours	64		Total Hours*	64

*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>Westminster College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 101	Intro to Engineering Design	3	MECH ENG 1720	Engineering Design with Computer Applications	3
SPE 101	Intro to Speech Communication	3	SPMS 1185	Principles of Speech	3
HIS 103 or	U.S. History to 1890 or		HISTORY 1300 or	American History to 1877 or	
HIS 104 or	U.S. History since 1890 or	3	HISTORY 1310 or	American History since 1877 or	
HIS 106	Western Civilization II		HISTORY 1200	Modern Western Civilization	3
GEO 108	Intro to Physical Geology and Lab	4	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
CHM 124	General Chemistry II	3	CHEM 1320	General Chemistry II	3
BIO 105	Intro to Biology Principles	3	BIO SCI 1113	General Biology	4
EGR 230	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
MAT 313	Mathematical Probability and Statistics	3	STAT 3115	Engineering Statistics (Will be substituted for STAT 3113.)	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	28		Group 2 Major Requirements	28
	Group 1 Core Requirements	34		Group 1 Core Requirements	34
	Total Hours	62		Total Hours*	62

*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>Westminster College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 101	Intro to Engineering Design	3	MECH ENG 1720	Engineering Design with Computer Applications	3
SPE 101	Intro to Speech Communication	3	SPMS 1185	Principles of Speech	3
HIS 103 or HIS 104 or HIS 106 or POL 211	U.S. History to 1890 or U.S. History since 1890 or Western Civilization II or American Government and Politics	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 108	Intro to Physical Geology and Lab	4	GEO ENG 1150 (GEOLOGY 1110)	Physical and Environmental Geology	3
EGR 230	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
BIO 105 or CHM 124 or CHM 314	Intro to Biology Principles or General Chemistry II or Organic Chemistry I	3	BIO SCI 1113 or CHEM 1320 or CHEM 2210	General Biology or General Chemistry II or Organic Chemistry I <small>or any 3-hour course in chemistry, geochemistry, or biology. Satisfies chemistry/geochemistry elective requirement.</small>	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	25		Group 2 Major Requirements	24
	Group 1 Core Requirements	34		Group 1 Core Requirements	34
	Total Hours	59		Total Hours*	58

*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>Westminster College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 101	Intro to Engineering Design	3	MECH ENG 1720	Engineering Design with Computer Applications	3
HIS 103 or HIS 104 or HIS 106 or POL 211	U.S. History to 1890 or U.S. History since 1890 or Western Civilization II or American Government and Politics	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
SPE 101	Intro to Speech Communication	3	SPMS 1185	Principles of Speech	3
CSC 111	Fundamentals of Computer Science I	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
	Analogue Circuits	3	EE 2800	Circuit Analysis I	3
EGR 230	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
MAT 215 or MAT 313	Linear Algebra or Mathematical Probability and 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
	Literature Elective	3		Literature Elective	3
	<i>See your advisor for course options.</i>	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	27
	Group 1 Core Requirements	34		Group 1 Core Requirements	34
	Total Hours	61		Total Hours*	61

*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>Westminster College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 101	Intro to Engineering Design	3	MECH ENG 1720	Engineering Design with Computer Applications	3
SPE 101	Intro to Speech Communication	3	SPMS 1185	Principles of Speech	3
HIS 103 or HIS 104 or HIS 106 or	U.S. History to 1890 or U.S. History since 1890 or Western Civilization II or	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or	American History to 1877 or American History since 1877 or Modern Western Civilization or	3
POL 211	American Government and Politics		POL SCI 1200	American Government	
EGR 230	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
MAT 313	Mathematical Probability and Statistics	3	STAT 3115	Engineering Statistics	3
CHM 124	General Chemistry II	3	CHEM 1320	General Chemistry II	3
CHM 314 or CHM 424 or	Organic Chemistry I or Physical Chemistry I or		CHEM 2210 or CHEM 3410 or	Organic Chemistry I (4) or Chemical Thermodynamics I (3) or	
PHY 223	Physics III or Analogue Circuits	3	PHYSICS 2305 or EE 2800	Intro to Modern Physics (3) or Electrical Circuits (3)	3
	<i>See your advisor for course options.</i>	3		Not specifically required for the degree but will satisfy Out-of-Department Technical Elective Requirement.	
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	5		Humanities/Social Science Elective	3
	Group 2 Major Requirements	32		Maximum Free Electives	5
	Group 1 Core Requirements	34		Group 2 Major Requirements	32
	Total Hours	66		Group 1 Core Requirements	34
				Total Hours*	66

*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>Westminster College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 101	Intro to Engineering Design	3	MECH ENG 1720	Engineering Design with Computer Applications	3
HIS 103 or HIS 104 or HIS 106 or	U.S. History to 1890 or U.S. History since 1890 or Western Civilization II or	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or	American History to 1877 or American History since 1877 or Modern Western Civilization or	3
POL 211	American Government and Politics		POL SCI 1200	American Government	
MAT 313	Mathematical Probability and Statistics	3	STAT 3115	Engineering Statistics	3
EGR 230	Engineering Mechanics-Statics	3	CIV ENG 2200*	Engineering Mechanics-Statics	3
GEO 108	Intro to Physical Geology and Lab	4	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	22		Group 2 Major Requirements	21
	Group 1 Core Requirements	34		Group 1 Core Requirements	34
	Total Hours	56		Total Hours*	55

*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>Westminster College</u>	<u>Semester</u>		<u>Missouri S&T</u>	
EGR 101	Intro to Engineering Design	3	MECH ENG 1720	Engineering Design with Computer Applications	3
HIS 103 or	U.S. History to 1890 or		HISTORY 1300 or	American History to 1877 or	
HIS 104 or	U.S. History since 1890 or	3	HISTORY 1310 or	American History since 1877 or	
HIS 106 or	Western Civilization II or		HISTORY 1200 or	Modern Western Civilization or	3
POL 211	American Government and Politics		POL SCI 1200	American Government	
MAT 215 or	Linear Algebra or		MATH 3108 or	Linear Algebra or	
MAT 331	Mathematics Seminar	3	MATH 3109	Foundations of Mathematics	3
EGR 230	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
MAT 313	Mathematical Probability and Statistics	3	STAT 3115	Engineering Statistics	3
PHY 223	Physics III	3	PHYSICS 2305	Intro to Modern Physics	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	6		Maximum Free Electives	6
	Group 2 Major Requirements	30		Group 2 Major Requirements	30
	Group 1 Core Requirements	34		Group 1 Core Requirements	34
	Total Hours	64		Total Hours*	64

*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>Westminster College</u>	<u>Semester</u>		<u>Missouri S&T</u>	
EGR 101	Intro to Engineering Design	3	MECH ENG 1720	Engineering Design with Computer Applications	3
HIS 103 or	U.S. History to 1890 or		HISTORY 1300 or	American History to 1877 or	
HIS 104 or	U.S. History since 1890 or	3	HISTORY 1310 or	American History since 1877 or	
HIS 106 or	Western Civilization II or		HISTORY 1200 or	Modern Western Civilization or	3
POL 211	American Government and Politics		POL SCI 1200	American Government	
GEO 108	Intro to Physical Geology and Lab	4	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
EGR 230	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	19		Group 2 Major Requirements	18
	Group 1 Core Requirements	34		Group 1 Core Requirements	34
	Total Hours	53		Total Hours*	52

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