Westminster 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.

Westminster College			Semester	Missouri S&T		
MAT 124	Calculus I	5		MATH 1214	Calculus I Grade of C or better is required.	4
MAT 214	Calculus II	4		MATH 1215	Calculus II Grade of C or better is required.	4
MAT 224	Calculus III	4		MATH 2222	Calculus III Grade of C or better is required.	4
MAT 312	Differential Equations	3		MATH 3304	Elementary Differential Equations	3
PHY 201	Physics I	4		PHYSICS 1135	Engineering Physics I Grade of C or better is required.	4
PHY 212	Physics II	4		PHYSICS 2135	Engineering Physics II Grade of C or better is required.	4
ENG 105	Academic Writing I	3		ENGLISH 1120	Exposition and Argumentation	3
	Total Hours	27			Total Hours	26

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.

This transfer guide is published by Missouri University of Science and Technology and is in effect as of Fall 2026.
Further information or updates are available from Missouri S&T Transfer Admissions at transfer.mst.edu, transfer@mst.edu, or 800-522-0938.

Aerospace Engineering Group 2 Major Requirements

Westminster College		Semester	Missouri S&T		
EGR 101	Intro to Engineering Design	3	MECH ENG 1720	Intro to Engineering Design	3
ENG 106 or ENG 265 or SPE 101	Academic Writing II or Technical and Web Writing or Intro to Speech Communication	3	ENGLISH 1160 or ENGLISH 3560 or SPMS 1185	Writing and Research or Technical Writing or Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHM 114, 115	General Chemistry I and Lab	4	CHEM 1310*, 1319	General Chemistry I and Lab *CHEM 1310 will be substituted for CHEM 1305.	5
CSA 304	Structured Programming	4	COMP SCI 1971, 1981	Intro to Programming Method and Lab (C++)	3
PHY 328	Analog Circuits	3	ELEC ENG 2800	Electrical Circuits	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* Satisfies the Advanced Math/Comp Sci elective requirement. *STAT 3115 will be substituted for STAT 3113.	3
PHL 212 or PHL244	Intro to Ethics Business Ethics or other engineering, business, bio, social ethics approved by advisor	3	PHILOS 1130 or PHILOS 3235	How Should I Live? An Introduction to Ethics or Business Ethics or other engineering, business, bio, social ethics approved by advisor	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 205 or ENG 206 or ENG 238 or ENG 239 or ENG 249 or **HIS 103*** or **HIS 104*** or Literature	Topics in British Literature to 1800 or British Literature since 1800 or American Literature to the Civil War or American Literature Since the Civil War or World Literature since 1800 or **History of the United States to 1877*** or **History of the United States since 1877*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or 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 Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
HIS 105 or **HIS 106*** or GOG 101 or PHL 101 or PHL 218 or **POL 211*** or PSY 112 or ECN 212 or ECN 211or Foreign Language	Western Civilization I or **Western Civilization II*** or Intro to Geography or Intro to Philosophy through Film or Intro to Logic or **American Government and Politics***or Psychology as a Natural Science or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	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 ***Satisfies the State of Missouri government requirement.**	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
	Group 2 Major Requirements	38		Group 2 Major Requirements	38
	Group 1 Core Requirements	27		Group 1 Core Requirements	26
	Total Hours	65		Total Hours*	64
				*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

Westminster College		Semester	Missouri S&T		
EGR 101	Intro to Engineering Design	3	MECH ENG 1720	Intro to Engineering Design	3
ENG 106 or ENG 265 or SPE 101	Academic Writing II or Technical and Web Writing or Intro to Speech Communication	3	ENGLISH 1160 or ENGLISH 3560 or SPMS 1185	Writing and Research or Technical Writing or Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHM 114, 115	General Chemistry I and Lab	4	CHEM 1310*, 1319	General Chemistry I and Lab *CHEM 1310 will be substituted for CHEM 1305.	5
MAT 313	Mathematical Probability and Statistics	3	STAT 3115*	Engineering Statistics* *STAT 3115 will be substituted for this requirement.	3
GEO 108	Intro to Physical Geology	4	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 3 hours Humanities and Fine Arts 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 205 or ENG 206 or ENG 238 or ENG 239 or ENG 249 or **HIS 103*** or **HIS 104*** or Literature	Topics in British Literature to 1800 or British Literature since 1800 or American Literature to the Civil War or American Literature Since the Civil War or World Literature since 1800 or **History of the United States to 1877*** or **History of the United States since 1877*** 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 Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or 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 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.					
HIS 106*	**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 218 or **POL 211*** or PSY 112 or ECN 212 or ECN 211or Foreign Language	Intro to Philosophy through Film or Intro to Logic or **American Government and Politics***or Psychology as a Natural Science 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
	No free electives applied to the degree.	0		Maximum Free Electives	0
	Group 2 Major Requirements	29		Group 2 Major Requirements	29
	Group 1 Core Requirements	27		Group 1 Core Requirements	26
	Total Hours	56		Total Hours*	55
				*S&T advisor permission is required to transfer more than 69 credits toward the S&T Architectural Engineering degree.	

Biomedical Engineering-Biomanufacturing
Group 2 Major Requirements

Westminster College		Semester	Missouri S&T		
SPE 101	Intro to Speech Communication	3	SP&MS 1185	Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHM 114, 115	General Chemistry I and Lab	4	CHEM 1310, 1319	General Chemistry I and Lab	5
CHM 124, 125	General Chemistry II (3) and Lab (1)	3	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis* (2) *CHEM 1510 is not a degree requirement, transfers as general elective credit.	3
CHM 314 , 315	Organic Chemistry I and Lab	4	CHEM 2210, 2219	Organic Chemistry I and Lab	4
CHM 324, 325 or BIO 114, 115 or BIO 301	Organic Chemistry II and Lab (4) or Biological Processes and Lab (4) or Genetics (4)	4	CHEM 2220, 2229 or BIO SCI 1213*, 1219 or BIO SCI 2223	Organic Chemistry II and Lab or Principles of Biology* and Lab or General Genetics Applies to degree as Track Elective. *BIO SCI 1213 will be substituted for 1113.	4
BIO 325	Molecular Cell Biology	4	BIO SCI 2213, 2219	Cell Biology and Lab	4
CSA 304	Structured Programming	3	COMP SCI 1971,1981*	Intro to Programming Methodology and Lab* (C++) *Will be substituted for COMP SCI 1500.	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 205 or ENG 206 or ENG 238 or ENG 239 or ENG 249 or **HIS 103*** or **HIS 104*** or Literature	Topics in British Literature to 1800 or British Literature since 1800 or American Literature to the Civil War or American Literature Since the Civil War or World Literature since 1800 or **History of the United States to 1877*** or **History of the United States since 1877*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or 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 Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines to include PHILOS 3223.					
PHL 242	Biomedical Ethics	3	PHILOS 3223	Bioethics	3
HIS 105 or **HIS 106*** or GOG 101 or **POL 211*** or PSY 112 or ECN 212 or ECN 211or Foreign Language	Western Civilization I or **Western Civilization II*** or Intro to Geography or **American Government and Politics***or Psychology as a Natural Science or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	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 ***Satisfies the State of Missouri government requirement.**	3
Humanities, Arts, and Social Sciences ENGLISH 3560 required.					
ENG 265	Technical and Web Writing	3	ENGLISH 3560	Technical Writing	3
	No free electives applied to the degree.	0		Maximum Free Electives	0
	Group 2 Major Requirements	40		Group 2 Major Requirements	41
	Group 1 Core Requirements	27		Group 1 Core Requirements	26
	Total Hours	67		Total Hours*	67
				*S&T advisor permission is required to transfer more than 69 credit hours toward the degree.	

Biomedical Engineering-Biomaterials
Group 2 Major Requirements

Westminster College		Semester	Missouri S&T		Semester
SPE 101	Intro to Speech Communication	3	SP&MS 1185	Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHM 114, 115	General Chemistry I and Lab	4	CHEM 1310, 1319	General Chemistry I and Lab	5
CHM 124, 125	General Chemistry II (3) and Lab (1)	3	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) *CHEM 1510 is not a degree requirement, transfers as general elective credit.	3
CHM 314 , 315	Organic Chemistry I and Lab	4	CHEM 2210, 2219*	Organic Chemistry I and Lab* *CHEM 2219 Lab applies to the degree as a Track Elective (non-engineering).	4
CHM 324, 325	Organic Chemistry II and Lab	4	CHEM 2220, 2229*	Organic Chemistry II and Lab* CHEM 2229 Lab applies to the degree as a Track Elective (non-engineering).	4
BIO 114, 115	Biological Processes and Lab	4	BIO SCI 1213*, 1219*	Principles of Biology* and Lab* *Applies to degree as Track Elective (Non-engineering). BIO SCI 1213 will be substituted for BIO SCI 1113.	4
BIO 325	Molecular Cell Biology	4	BIO SCI 2213, 2219	Cell Biology and Lab	4
CSA 304	Structured Programming	3	COMP SCI 1971,1981*	Intro to Programming Methodology and Lab* (C++) *Will be substituted for COMP SCI 1500.	3
PHY 328	Analog Circuits	3	ELEC ENG 2100*	Circuits I* *A passing grade on the Missouri S&T ELEC ENG 2100 final exam is required to receive credit for ELEC ENG 2100. Without the required passing score, the course will transfer as ELEC ENG 2800.	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 205 or ENG 206 or ENG 238 or ENG 239 or ENG 249 or **HIS 103*** or **HIS 104*** or Literature	Topics in British Literature to 1800 or British Literature since 1800 or American Literature to the Civil War or American Literature Since the Civil War or World Literature since 1800 or **History of the United States to 1877*** or **History of the United States since 1877*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or 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 Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines to include PHILOS 3223.					
PHL 242	Biomedical Ethics	3	PHILOS 3223	Bioethics	3
HIS 105 or **HIS 106*** or GOG 101 or **POL 211*** or PSY 112 or ECN 212 or ECN 211or Foreign Language	Western Civilization I or **Western Civilization II*** or Intro to Geography or **American Government and Politics***or Psychology as a Natural Science or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	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 ***Satisfies the State of Missouri government requirement.**	3
Humanities, Arts, and Social Sciences ENGLISH 3560 required.					
ENG 265	Technical and Web Writing	3	ENGLISH 3560	Technical Writing	3
	No free electives applied to the degree.	0		Maximum Free Electives	0
	Group 2 Major Requirements	47		Group 2 Major Requirements	48
	Group 1 Core Requirements	27		Group 1 Core Requirements	26
	Total Hours	74		Total Hours*	74

*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

Westminster College			Semester	Missouri S&T		
EGR 101	Intro to Engineering Design	3		MECH ENG 1720	Intro to Engineering Design	3
ENG 106 or ENG 265 or SPE 101	Academic Writing II or Technical and Web Writing or Intro to Speech Communication	3		ENGLISH 1160 or ENGLISH 3560 or SPMS 1185	Writing and Research or Technical Writing or Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHM 124	General Chemistry II	3		CIV ENG 2210	Mechanics of Materials	3
CHM 114, 115	General Chemistry I and Lab	4		CHEM 1310, 1319	General Chemistry I and Lab	5
CHM 124	General Chemistry II	3		CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) *CHEM 1510 is not a degree requirement, transfers as general elective credit.	3
CSA 321 or CSA 304	Python Programming or Structured Programming			COMP SCI 1973, 1983 or COMP SCI 1971*, 1981*	Intro to Python Programming and Lab or Intro to Programming Methodology* and Lab* *COMP SCI 1971, 1981 will be substituted for COMP SCI 1500.	3
MAT 313	Mathematical Probability and Statistics	3		STAT 3115*	Engineering Statistics* or any statistics course 3000-level or higher. Satisfies statistics elective requirement. *STAT 3115 will be substituted for this requirement.	3
PHY 223	Physics III	3		PHYS 2305	Intro to Modern Physics	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 205 or ENG 206 or ENG 238 or ENG 239 or ENG 249 or **HIS 103*** or **HIS 104*** or Literature	Topics in British Literature to 1800 or British Literature since 1800 or American Literature to the Civil War or American Literature Since the Civil War or World Literature since 1800 or **History of the United States to 1877*** or **History of the United States since 1877*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6		ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or 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 Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.						
HIS 105 or **HIS 106*** or GOG 101 or PHL 101 or PHL 218 or **POL 211*** or PSY 112 or ECN 212 or ECN 211or Foreign Language	Western Civilization I or **Western Civilization II*** or Intro to Geography or Intro to Philosophy through Film or Intro to Logic or **American Government and Politics***or Psychology as a Natural Science or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	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 ***Satisfies the State of Missouri government requirement.**	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
	Group 2 Major Requirements	37			Group 2 Major Requirements	41
	Group 1 Core Requirements	27			Group 1 Core Requirements	26
	Total Hours	64			Total Hours*	67
					*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

Westminster College		Semester	Missouri S&T		
EGR 101	Intro to Engineering Design	3	MECH ENG 1720	Intro to Engineering Design	3
SPE 101	Intro to Speech Communication	3	SP&MS 1185	Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHM 114, 115	General Chemistry I and Lab	4	CHEM 1310, 1319	General Chemistry I and Lab	5
CHM 124	General Chemistry II	3	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis* (2) *CHEM 1510 is not a degree requirement, transfers as general elective credit.	3
CHM 314 , 315	Organic Chemistry I and Lab	4	CHEM 2210, 2219*	Organic Chemistry I and Lab* *CHEM 2210 is a degree requirement. CHEM 2219 applies to the degree as 1 of 9 required science elective credits See note below .	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 8 hours from these options.	8	CHEM 2220 or CHEM 2510 or BIO SCI 2213, 2219	Organic Chemistry II (3) or Analytical Chemistry (4) or Cell Biology and Lab (4) Applies to the degree as required science elective credits. Select up to 9 hours from these options or CHEM 2219 Organic Chemistry Lab.	8
CSA 304	Structured Programming	3	COMP SCI 1971,1981*	Intro to Programming Methodology and Lab* (C++) *Will be substituted for COMP SCI 1500.	3
MAT 313	Mathematical Probability and Statistics	3	STAT 3115*	Engineering Statistics* *STAT 3115 will be substituted for this 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 205 or ENG 206 or ENG 238 or ENG 239 or ENG 249 or **HIS 103*** or **HIS 104*** or Literature	Topics in British Literature to 1800 or British Literature since 1800 or American Literature to the Civil War or American Literature Since the Civil War or World Literature since 1800 or **History of the United States to 1877*** or **History of the United States since 1877*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or 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 Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
HIS 105 or **HIS 106*** or GOG 101 or PHL 101 or PHL 218 or **POL 211*** or PSY 112 or ECN 212 or ECN 211or Foreign Language	Western Civilization I or **Western Civilization II*** or Intro to Geography or Intro to Philosophy through Film or Intro to Logic or **American Government and Politics***or Psychology as a Natural Science or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	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 ***Satisfies the State of Missouri government requirement.**	6
Humanities, Arts, and Social Sciences ENGLISH 3560 required.					
ENG 265	Technical and Web Writing	3	ENGLISH 3560	Technical Writing	3
	No free electives applied to the degree.	0		Maximum Free Electives	0
	Group 2 Major Requirements	46		Group 2 Major Requirements	47
	Group 1 Core Requirements	27		Group 1 Core Requirements	26
	Total Hours	73		Total Hours*	73
				*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

Westminster College		Semester	Missouri S&T		
EGR 101	Intro to Engineering Design	3	MECH ENG 1720	Intro to Engineering Design	3
ENG 106 or ENG 265 or SPE 101	Academic Writing II or Technical and Web Writing or Intro to Speech Communication	3	ENGLISH 1160 or ENGLISH 3560 or SPMS 1185	Writing and Research or Technical Writing or Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHM 114, 115	General Chemistry I and Lab	4	CHEM 1310*, 1319	General Chemistry I and Lab *CHEM 1310 will be substituted for CHEM 1305.	5
GEO 108	Intro to Physical Geology	4	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
MAT 313	Mathematical Probability and Statistics	3	STAT 3115*	Engineering Statistics* *STAT 3115 will be substituted for this 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 205 or ENG 206 or ENG 238 or ENG 239 or ENG 249 or **HIS 103*** or **HIS 104*** or Literature	Topics in British Literature to 1800 or British Literature since 1800 or American Literature to the Civil War or American Literature Since the Civil War or World Literature since 1800 or **History of the United States to 1877*** or **History of the United States since 1877*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or 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 Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
HIS 105 or **HIS 106*** or GOG 101 or PHL 101 or PHL 218 or **POL 211*** or PSY 112 or ECN 212 or ECN 211or Foreign Language	Western Civilization I or **Western Civilization II*** or Intro to Geography or Intro to Philosophy through Film or Intro to Logic or **American Government and Politics***or Psychology as a Natural Science or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	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 ***Satisfies the State of Missouri government requirement.**	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
	Group 2 Major Requirements	32		Group 2 Major Requirements	32
	Group 1 Core Requirements	27		Group 1 Core Requirements	26
	Total Hours	59		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

Westminster College		Semester	Missouri S&T		
SPE 101	Intro to Speech Communication	3	SPMS 1185	Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHM 114, 115	General Chemistry I and Lab	4	CHEM 1310*, 1319	General Chemistry I and Lab *CHEM 1310 will be substituted for CHEM 1305.	5
CSA 304	Structured Programming	3	COMP SCI 1971,1981*	Intro to Programming Methodology and Lab* (C++) *Will be substituted for COMP SCI 1500.	3
PHY 223 or CHM 314 or BIO 325 or BIO 301	Physics III (3) or Organic Chemistry I (3) or Molecular Cell Biology (4) or Genetics (4)	3	PHYSICS 2305 or CHEM 2210 or BIO SCI 2213 or BIO SCI 2223	Intro to Modern Physics (3) or Organic Chemistry I (3) or Cell Biology (3) or General Genetics (3)	3
PHY 328	Analog Circuits	3	ELEC ENG 2100*	Circuits I* *A passing grade on the Missouri S&T ELEC ENG 2100 final exam is required to receive credit for ELEC ENG 2100. Without the required passing score, the course will transfer as ELEC ENG 2800.	3
MAT 215 or MAT 331	Linear Algebra or Mathematics Seminar	3	MATH 3108 or MATH 3109	Linear Algebra or Foundations of Mathematics Satisfies a required math elective.	3
MAT 313	Mathematical Probability and Statistics	3	STAT 3115*	Engineering Statistics* *STAT 3115 will be substituted for this 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 205 or ENG 206 or ENG 238 or ENG 239 or ENG 249 or **HIS 103*** or **HIS 104*** or Literature	Topics in British Literature to 1800 or British Literature since 1800 or American Literature to the Civil War or American Literature Since the Civil War or World Literature since 1800 or **History of the United States to 1877*** or **History of the United States since 1877*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or 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 Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
HIS 105 or **HIS 106*** or GOG 101 or PHL 101 or PHL 218 or **POL 211*** or PSY 112 or ECN 212 or ECN 211or Foreign Language	Western Civilization I or **Western Civilization II*** or Intro to Geography or Intro to Philosophy through Film or Intro to Logic or **American Government and Politics***or Psychology as a Natural Science or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	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 ***Satisfies the State of Missouri government requirement.**	6
Humanities, Arts, and Social Sciences Select 3 hours.					
ENG 106 or ENG 265	Academic Writing II or Technical and Web 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	40		Group 2 Major Requirements	41
	Group 1 Core Requirements	27		Group 1 Core Requirements	26
	Total Hours	67		Total Hours*	67
				*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

Westminster College		Semester	Missouri S&T		
EGR 101	Intro to Engineering Design	3	MECH ENG 1720	Intro to Engineering Design	3
SPE 101	Intro to Speech Communication	3	SPMS 1185	Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHM 114, 115	General Chemistry I and Lab	4	CHEM 1310*, 1319	General Chemistry I and Lab *CHEM 1310 will be substituted for CHEM 1305.	5
CSA 304	Structured Programming	3	COMP SCI 1971,1981*	Intro to Programming Methodology and Lab* (C++) *Will be substituted for COMP SCI 1500.	3
PHY 223 or CHM 314 or BIO 325 or BIO 301	Physics III (3) or Organic Chemistry I (3) or Molecular Cell Biology (4) or Genetics (4)	3	PHYSICS 2305 or CHEM 2210 or BIO SCI 2213 or BIO SCI 2223	Intro to Modern Physics (3) or Organic Chemistry I (3) or Cell Biology (3) or General Genetics (3)	3
PHY 328	Analog Circuits	3	ELEC ENG 2100*	Circuits I* *A passing grade on the Missouri S&T ELEC ENG 2100 final exam is required to receive credit for ELEC ENG 2100. Without the required passing score, the course will transfer as ELEC ENG 2800.	3
MTH 261	Linear Algebra	3	MATH 3108	Linear Algebra	3
MAT 313	Mathematical Probability and Statistics	3	STAT 3115*	Engineering Statistics* *STAT 3115 will be substituted for this 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 205 or ENG 206 or ENG 238 or ENG 239 or ENG 249 or **HIS 103*** or **HIS 104*** or Literature	Topics in British Literature to 1800 or British Literature since 1800 or American Literature to the Civil War or American Literature Since the Civil War or World Literature since 1800 or **History of the United States to 1877*** or **History of the United States since 1877*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or 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 Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
HIS 105 or **HIS 106*** or GOG 101 or PHL 101 or PHL 218 or **POL 211*** or PSY 112 or ECN 212 or ECN 211or Foreign Language	Western Civilization I or **Western Civilization II*** or Intro to Geography or Intro to Philosophy through Film or Intro to Logic or **American Government and Politics***or Psychology as a Natural Science or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	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 ***Satisfies the State of Missouri government requirement.**	6
Humanities, Arts, and Social Sciences Select 3 hours.					
ENG 106 or ENG 265	Academic Writing II or Technical and Web 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	46		Group 2 Major Requirements	47
	Group 1 Core Requirements	27		Group 1 Core Requirements	26
	Total Hours	73		Total Hours*	73
				*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

Westminster College			Semester	Missouri S&T		
EGR 101	Intro to Engineering Design	3		MECH ENG 1720	Intro to Engineering Design	3
SPE 101	Intro to Speech Communication	3		SPMS 1185	Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHM 114, 115	General Chemistry I and Lab	4		CHEM 1310, 1319	General Chemistry I and Lab	5
CSA 304	Structured Programming	4		COMP SCI 1971, 1981	Intro to Programming Method and Lab (C++)	3
PHY 328	Analog Circuits	3		ELEC ENG 2800	Electrical Circuits	3
MAT 313	Mathematical Probability and Statistics	3		STAT 3115*	Engineering Statistics* *STAT 3115 will be substituted for this 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 205 or ENG 206 or ENG 238 or ENG 239 or ENG 249 or **HIS 103*** or **HIS 104*** or Literature	Topics in British Literature to 1800 or British Literature since 1800 or American Literature to the Civil War or American Literature Since the Civil War or World Literature since 1800 or **History of the United States to 1877*** or **History of the United States since 1877*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6		ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or 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 Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines to include PSYCH 1101.						
PSY 112	Psychology as a Natural Science	3		PSYCH 1101	General Psychology Required	3
HIS 105 or **HIS 106*** or GOG 101 or PHL 101 or PHL 218 or **POL 211*** or ECN 212 or ECN 211or Foreign Language	Western Civilization I or **Western Civilization II*** or Intro to Geography or Intro to Philosophy through Film or Intro to Logic or **American Government and Politics*** or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	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 ***Satisfies the State of Missouri government requirement.**	3
Humanities, Arts, and Social Sciences Select 3 hours.						
ENG 106 or ENG 265	Academic Writing II or Technical and Web Writing	3		ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
	No free electives applied to the degree.	0		Electives	Maximum Free Electives	0
	Group 2 Major Requirements	35			Group 2 Major Requirements	35
	Group 1 Core Requirements	27			Group 1 Core Requirements	26
	Total Hours	62			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

Westminster College		Semester	Missouri S&T		Semester
EGR 101	Intro to Engineering Design	3	MECH ENG 1720	Intro to Engineering Design	3
ENG 106 or ENG 265 or SPE 101	Academic Writing II or Technical and Web Writing or Intro to Speech Communication	3	ENGLISH 1160 or ENGLISH 3560 or SPMS 1185	Writing and Research or Technical Writing or Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
GEO 108	Intro to Physical Geology	4	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
CHM 114, 115	General Chemistry I and Lab	4	CHEM 1310, 1319	General Chemistry I and Lab	5
CHM 124	General Chemistry II	3	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) *CHEM 1510 is not a degree requirement, transfers as general elective credit.	3
BIO 114, 115	Biological Processes and Lab	4	BIO SCI 1213*, 1219*	Principles of Biology* and Lab* *The lab is not a degree requirement, transfers as general elective credit *BIO SCI 1213 will be substituted for BIO SCI 1113.	3
MAT 313	Mathematical Probability and Statistics	3	STAT 3115*	Engineering Statistics* *STAT 3115 will be substituted for this requirement.	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, 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 205 or ENG 206 or ENG 238 or ENG 239 or ENG 249 or **HIS 103*** or **HIS 104*** or Literature	Topics in British Literature to 1800 or British Literature since 1800 or American Literature to the Civil War or American Literature Since the Civil War or World Literature since 1800 or **History of the United States to 1877*** or **History of the United States since 1877*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or 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 Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
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.					
HIS 106* or PHL 101 or PHL 218 or PSY 112 or ECN 212 or ECN 211or Foreign Language	**Western Civilization II*** or Intro to Philosophy through Film or Intro to Logic or Psychology as a Natural Science or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6	**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 ***Satisfies the State of Missouri government requirement and a degree-specific gen ed requirement.**	6
No free electives applied to the degree.		0	Maximum Free Electives		0
Group 2 Major Requirements		36	Group 2 Major Requirements		35
Group 1 Core Requirements		27	Group 1 Core Requirements		26
	Total Hours	63		Total Hours*	61
			*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

Westminster College		Semester	Missouri S&T		
EGR 101	Intro to Engineering Design	3	MECH ENG 1720	Intro to Engineering Design	3
ENG 265	Technical and Web Writing	3	ENGLISH 3560	Technical Writing Applies to degree as Gen Ed Communication requirement.	3
CHM 114, 115	General Chemistry I and Lab	4	CHEM 1310*, 1319	General Chemistry I and Lab *CHEM 1310 will be substituted for CHEM 1305.	5
GEO 108	Intro to Physical Geology	4	GEO ENG 1150 (GEOLOGY 1110)	Physical and Environmental Geology	3
MAT 313	Mathematical Probability and Statistics	3	STAT 3115*	Engineering Statistics* *STAT 3115 will be substituted for this 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 205 or ENG 206 or ENG 238 or ENG 239 or ENG 249 or **HIS 103*** or **HIS 104*** or Literature	Topics in British Literature to 1800 or British Literature since 1800 or American Literature to the Civil War or American Literature Since the Civil War or World Literature since 1800 or **History of the United States to 1877*** or **History of the United States since 1877*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or 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 Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
HIS 105 or **HIS 106*** or GOG 101 or PHL 101 or PHL 218 or **POL 211*** or PSY 112 or ECN 212 or ECN 211or Foreign Language	Western Civilization I or **Western Civilization II*** or Intro to Geography or Intro to Philosophy through Film or Intro to Logic or **American Government and Politics***or Psychology as a Natural Science or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	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 ***Satisfies the State of Missouri government requirement.**	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
	Group 2 Major Requirements	32		Group 2 Major Requirements	32
	Group 1 Core Requirements	27		Group 1 Core Requirements	26
	Total Hours	59		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

Westminster College		Semester	Missouri S&T		
EGR 101	Intro to Engineering Design	3	MECH ENG 1720	Intro to Engineering Design	3
ENG 106 or ENG 265 or SPE 101	Academic Writing II or Technical and Web Writing or Intro to Speech Communication	3	ENGLISH 1160 or ENGLISH 3560 or SPMS 1185	Writing and Research or Technical Writing or Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHM 114, 115	General Chemistry I and Lab	4	CHEM 1310*, 1319	General Chemistry I and Lab *CHEM 1310 will be substituted for CHEM 1305.	5
CSA 304	Structured Programming	4	COMP SCI 1971, 1981	Intro to Programming Method and Lab (C++)	3
PHY 328	Analog Circuits	3	ELEC ENG 2800	Electrical Circuits	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* Satisfies the Advanced Math/Comp Sci elective requirement. *STAT 3115 will be substituted for STAT 3113.	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 205 or ENG 206 or ENG 238 or ENG 239 or ENG 249 or **HIS 103*** or **HIS 104*** or Literature	Topics in British Literature to 1800 or British Literature since 1800 or American Literature to the Civil War or American Literature Since the Civil War or World Literature since 1800 or **History of the United States to 1877*** or **History of the United States since 1877*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or 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 Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
HIS 105 or **HIS 106*** or GOG 101 or PHL 101 or PHL 218 or **POL 211*** or PSY 112 or ECN 212 or ECN 211or Foreign Language	Western Civilization I or **Western Civilization II*** or Intro to Geography or Intro to Philosophy through Film or Intro to Logic or **American Government and Politics***or Psychology as a Natural Science or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	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 ***Satisfies the State of Missouri government requirement.**	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
	Group 2 Major Requirements	35		Group 2 Major Requirements	35
	Group 1 Core Requirements	27		Group 1 Core Requirements	26
	Total Hours	62		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

Westminster College		Semester	Missouri S&T		Semester
EGR 101	Intro to Engineering Design	3	MECH ENG 1720	Intro to Engineering Design	3
ENG 106 or ENG 265 or SPE 101	Academic Writing II or Technical and Web Writing or Intro to Speech Communication	3	ENGLISH 1160 or ENGLISH 3560 or SPMS 1185	Writing and Research or Technical Writing or Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CSA 321 or CSA 304	Python Programming or Structured Programming		COMP SCI 1973, 1983 or COMP SCI 1971*, 1981*	Intro to Python Programming and Lab or Intro to Programming Methodology* and Lab* *COMP SCI 1971, 1981 will be substituted for COMP SCI 1500.	3
MAT 313	Mathematical Probability and Statistics	3	STAT 3115*	Engineering Statistics* *STAT 3115 will be substituted for this requirement.	3
CHM 114, 115	General Chemistry I and Lab	4	CHEM 1310, 1319	General Chemistry I and Lab	5
CHM 124	General Chemistry II	3	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) *CHEM 1510 is not a degree requirement, transfers as general elective credit.	3
CHM 314 or CHM 424 or PHY 328 or PHY 223	Organic Chemistry I or Physical Chemistry I or Analog Circuits or Physics III	3	CHEM 2210 or CHEM 3410 or EE 2800 or PHYSICS 2305	Organic Chemistry I (3) or Chemical Thermodynamics I (3) or Electrical Circuits (3) or Intro to Modern Physics (3) Not specifically required for the degree but will satisfy out-of-department technical 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 205 or ENG 206 or ENG 238 or ENG 239 or ENG 249 or **HIS 103*** or **HIS 104*** or Literature	Topics in British Literature to 1800 or British Literature since 1800 or American Literature to the Civil War or American Literature Since the Civil War or World Literature since 1800 or **History of the United States to 1877*** or **History of the United States since 1877*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or 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 Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
HIS 105 or **HIS 106*** or GOG 101 or PHL 101 or PHL 218 or **POL 211*** or PSY 112 or ECN 212 or ECN 211or Foreign Language	Western Civilization I or **Western Civilization II*** or Intro to Geography or Intro to Philosophy through Film or Intro to Logic or **American Government and Politics***or Psychology as a Natural Science or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	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 ***Satisfies the State of Missouri government requirement.**	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.	3		Maximum Free Electives	0
	Group 2 Major Requirements	37		Group 2 Major Requirements	38
	Group 1 Core Requirements	27		Group 1 Core Requirements	26
	Total Hours	64		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

Westminster College		Semester	Missouri S&T		
EGR 101	Intro to Engineering Design	3	MECH ENG 1720	Intro to Engineering Design	3
ENG 106 or ENG 265 or SPE 101	Academic Writing II or Technical and Web Writing or Intro to Speech Communication	3	ENGLISH 1160 or ENGLISH 3560 or SPMS 1185	Writing and Research or Technical Writing or Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
MAT 313	Mathematical Probability and Statistics	3	STAT 3115*	Engineering Statistics* *STAT 3115 will be substituted for this requirement.	3
CHM 114, 115	General Chemistry I and Lab	4	CHEM 1310, 1319	General Chemistry I and Lab	5
GEO 108	Intro to Physical Geology	4	CIV ENG 2200	Engineering Mechanics-Statics	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 205 or ENG 206 or ENG 238 or ENG 239 or ENG 249 or **HIS 103*** or **HIS 104*** or Literature	Topics in British Literature to 1800 or British Literature since 1800 or American Literature to the Civil War or American Literature Since the Civil War or World Literature since 1800 or **History of the United States to 1877*** or **History of the United States since 1877*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or 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 Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
HIS 105 or **HIS 106*** or GOG 101 or PHL 101 or PHL 218 or **POL 211*** or PSY 112 or ECN 212 or ECN 211or Foreign Language	Western Civilization I or **Western Civilization II*** or Intro to Geography or Intro to Philosophy through Film or Intro to Logic or **American Government and Politics***or Psychology as a Natural Science or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	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 ***Satisfies the State of Missouri government requirement.**	6
	No free electives applied to the degree.	0		Maximum Free Electives	0
	Group 2 Major Requirements	29		Group 2 Major Requirements	29
	Group 1 Core Requirements	27		Group 1 Core Requirements	26
	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

Westminster College			Semester	Missouri S&T		
EGR 101	Intro to Engineering Design	3		MECH ENG 1720	Intro to Engineering Design	3
ENG 106 or ENG 265 or SPE 101	Academic Writing II or Technical and Web Writing or Intro to Speech Communication	3		ENGLISH 1160 or ENGLISH 3560 or SPMS 1185	Writing and Research or Technical Writing or Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHM 114, 115	General Chemistry I and Lab	4		CHEM 1310, 1319	General Chemistry I and Lab	5
CSA 304	Structured Programming	4		COMP SCI 1971, 1981	Intro to Programming Method and Lab (C++)	3
MAT 215 or MAT 331	Linear Algebra or Mathematics Seminar	3		MATH 3108 or MATH 3109	Linear Algebra or Foundations of Mathematics	3
MAT 313	Mathematical Probability and Statistics	3		STAT 3115*	Engineering Statistics* *STAT 3115 will be substituted for this requirement.	3
PHY 328	Analog Circuits	3		ELEC ENG 2800	Electrical Circuits	3
PHY 223	Physics III	3		PHYSICS 2305	Intro to Modern Physics	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 205 or ENG 206 or ENG 238 or ENG 239 or ENG 249 or **HIS 103*** or **HIS 104*** or Literature	Topics in British Literature to 1800 or British Literature since 1800 or American Literature to the Civil War or American Literature Since the Civil War or World Literature since 1800 or **History of the United States to 1877*** or **History of the United States since 1877*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6		ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or 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 Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines to include either ECON 1100 or 1200.						
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
HIS 105 or **HIS 106*** or GOG 101 or PHL 101 or PHL 218 or **POL 211*** or PSY 112 or Foreign Language	Western Civilization I or **Western Civilization II*** or Intro to Geography or Intro to Philosophy through Film or Intro to Logic or **American Government and Politics*** or Psychology as a Natural Science or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	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 ***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
	Maximum Free Electives	0			Maximum Free Electives	0
	Group 2 Major Requirements	41			Group 2 Major Requirements	41
	Group 1 Core Requirements	27			Group 1 Core Requirements	26
	Total Hours	68			Total Hours*	67
					*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

Westminster College			Semester	Missouri S&T		
ENG 106 or ENG 265 or SPE 101	Academic Writing II or Technical and Web Writing or Intro to Speech Communication	3		ENGLISH 3560 or ENGLISH 1160 or ENGLISH 1600	Technical Writing (preferred) or Writing and Research or Intro to Technical Communications Applies to degree as Gen Ed Communications requirement.	3
CHM 114, 115	General Chemistry I and Lab	4		CHEM 1310*, 1319	General Chemistry I and Lab *CHEM 1310 will be substituted for CHEM 1305.	5
GEO 108	Intro to Physical Geology	4		GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
MAT 313	Mathematical Probability and Statistics	3		STAT 3115*	Engineering Statistics* *STAT 3115 will be substituted for this 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 205 or ENG 206 or ENG 238 or ENG 239 or ENG 249 or **HIS 103*** or **HIS 104*** or Literature	Topics in British Literature to 1800 or British Literature since 1800 or American Literature to the Civil War or American Literature Since the Civil War or World Literature since 1800 or **History of the United States to 1877*** or **History of the United States since 1877*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6		ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or 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 Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.						
HIS 105 or **HIS 106*** or GOG 101 or PHL 101 or PHL 218 or **POL 211*** or PSY 112 or ECN 212 or ECN 211or Foreign Language	Western Civilization I or **Western Civilization II*** or Intro to Geography or Intro to Philosophy through Film or Intro to Logic or **American Government and Politics***or Psychology as a Natural Science or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	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 ***Satisfies the State of Missouri government requirement.**	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
	Group 2 Major Requirements	29			Group 2 Major Requirements	29
	Group 1 Core Requirements	27			Group 1 Core Requirements	26
	Total Hours	56			Total Hours*	55
					*S&T advisor permission is required to transfer more than 69 credits toward the S&T Petroleum Engineering degree.	

Semiconductor Engineering-Device Engineering Emphasis
Group 2 Major Requirements

Westminster College		Semester	Missouri S&T		
EGR 101	Intro to Engineering Design	3	MECH ENG 1720	Intro to Engineering Design	3
ENG 106 or ENG 265 or SPE 101	Academic Writing II or Technical and Web Writing or Intro to Speech Communication	3	ENGLISH 1160 or ENGLISH 3560 or SPMS 1185	Writing and Research or Technical Writing or Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHM 114, 115	General Chemistry I and Lab	4	CHEM 1310, 1319	General Chemistry I and Lab	5
CHM 124	General Chemistry II	3	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) *CHEM 1510 is not a degree requirement, transfers as general elective credit.	3
PHY 328	Analog Circuits	3	ELEC ENG 2100*	Circuits I* *A passing grade on the Missouri S&T ELEC ENG 2100 final exam is required to receive credit for ELEC ENG 2100. Without the required passing score, the course will transfer as ELEC ENG 2800.	3
MAT 313	Mathematical Probability and Statistics	3	STAT 3115*	Engineering Statistics* *STAT 3115 will be substituted for this requirement.	3
CSA 304	Structured Programming	3	COMP SCI 1971,1981*	Intro to Programming Methodology and Lab* (C++) *Will be substituted for COMP SCI 1500.	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 205 or ENG 206 or ENG 238 or ENG 239 or ENG 249 or **HIS 103*** or **HIS 104*** or Literature	Topics in British Literature to 1800 or British Literature since 1800 or American Literature to the Civil War or American Literature Since the Civil War or World Literature since 1800 or **History of the United States to 1877*** or **History of the United States since 1877*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or 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 Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
HIS 105 or **HIS 106*** or GOG 101 or PHL 101 or PHL 218 or **POL 211*** or PSY 112 or ECN 212 or ECN 211or Foreign Language	Western Civilization I or **Western Civilization II*** or Intro to Geography or Intro to Philosophy through Film or Intro to Logic or **American Government and Politics***or Psychology as a Natural Science or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	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 ***Satisfies the State of Missouri government requirement.**	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		Maximum Free Electives	3
	Group 2 Major Requirements	40		Group 2 Major Requirements	41
	Group 1 Core Requirements	27		Group 1 Core Requirements	26
	Total Hours	67		Total Hours*	67
				*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

	Westminster College	Semester		Missouri S&T	
EGR 101	Intro to Engineering Design	3	MECH ENG 1720	Intro to Engineering Design	3
ENG 106 or ENG 265 or SPE 101	Academic Writing II or Technical and Web Writing or Intro to Speech Communication	3	ENGLISH 1160 or ENGLISH 3560 or SPMS 1185	Writing and Research or Technical Writing or Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHM 114, 115	General Chemistry I and Lab	4	CHEM 1310, 1319	General Chemistry I and Lab	5
CHM 124	General Chemistry II	3	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) *CHEM 1510 is not a degree requirement, transfers as general elective credit.	3
PHY 328	Analog Circuits	3	ELEC ENG 2100*	Circuits I* *A passing grade on the Missouri S&T ELEC ENG 2100 final exam is required to receive credit for ELEC ENG 2100. Without the required passing score, the course will transfer as ELEC ENG 2800.	3
MAT 313	Mathematical Probability and Statistics	3	STAT 3115*	Engineering Statistics* *STAT 3115 will be substituted for this requirement.	3
CSA 304	Structured Programming	3	COMP SCI 1971,1981*	Intro to Programming Methodology and Lab* (C++) *Will be substituted for COMP SCI 1500.	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 205 or ENG 206 or ENG 238 or ENG 239 or ENG 249 or **HIS 103*** or **HIS 104*** or Literature	Topics in British Literature to 1800 or British Literature since 1800 or American Literature to the Civil War or American Literature Since the Civil War or World Literature since 1800 or **History of the United States to 1877*** or **History of the United States since 1877*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or 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 Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
	Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.				
HIS 105 or **HIS 106*** or GOG 101 or PHL 101 or PHL 218 or **POL 211*** or PSY 112 or ECN 212 or ECN 211or Foreign Language	Western Civilization I or **Western Civilization II*** or Intro to Geography or Intro to Philosophy through Film or Intro to Logic or **American Government and Politics***or Psychology as a Natural Science or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	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 ***Satisfies the State of Missouri government requirement.**	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		Maximum Free Electives	3
	Group 2 Major Requirements	40		Group 2 Major Requirements	41
	Group 1 Core Requirements	27		Group 1 Core Requirements	26
	Total Hours	67		Total Hours*	67
				*S&T advisor permission is required to transfer more than 68 credits toward the S&T Ceramic Engineering degree.	