

## Crowder College — Missouri S&T

### General Engineering

Transfer Guide Effective as of Fall 2024

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

## Group 1 - Core Requirements: All Majors Take All Courses

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

Crowder College		Semester	Missouri S&T			
MATH 150, 160	Calculus Part 1 and 2	5	MATH 1214	Calculus I <small>Grade of C or better is required.</small>	4	
MATH 201	Calculus II	5	MATH 1215	Calculus II <small>Grade of C or better is required.</small>	4	
MATH 202	Calculus III	5	MATH 2222	Calculus III <small>Grade of C or better is required.</small>	4	
MATH 210	Differential Equations	3	MATH 3304	Elementary Differential Equations	3	
PHYS 190	General Physics I	5	PHYSICS 1135	Engineering Physics I <small>Grade of C or better is required.</small>	4	
PHYS 210	General Physics II	5	PHYSICS 2135	Engineering Physics II <small>Grade of C or better is required.</small>	4	
CHEM 111	General Chemistry I	5	CHEM 1310, 1319	General Chemistry I and Lab	5	
ENG 101	English Composition	3	ENGLISH 1120	Exposition and Argumentation	3	
ECON 202 or ECON 201	Principles of Microeconomics or Principles of Macroeconomics	3	ECON 1100 or ECON 1200	Principles of Microeconomics or Principles of Macroeconomics	3	
Total Hours			39	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 art, English and technical communication, etymology, foreign language, music, philosophy, speech and media studies, or theatre. Your campus may have additional acceptable options. Consult with your advisor or email [transfer@mst.edu](mailto:transfer@mst.edu) with questions. See Missouri S&T online catalog at <https://catalog.mst.edu/undergraduate/degreeprogramsandcourses/> for more information.

## Aerospace Engineering Group 2 Major Requirements

<u>Crowder College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
HIST 102 or HIST 106 or HIST 107 or PLSC 103	Western Civilization II or U.S. History I or U.S. History II or National, State, Local Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
ENGL 102 or COMM 104 or ENGL 203	Advanced English Composition or Fundamentals of Speech or Technical Report Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
COMP 111	Intro to Computer Science	4	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
PHYS 250	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
ENGL 240 or ENGL 230 or ENGI 222 or	British Literature I or Survey of American Literature I or World Literature I or other literature	3	ENGLISH 1211 or ENGLISH 1221 or ENGLISH 1231	British Literature I: The Beginnings to 1800 or American Literature: 1600 to 1865 or World Literature I or other literature	3
PHIL 220	Ethics or other engineering, business, bio, social ethics approved by advisor	3	PHILOS 1130	How Should I Live? An Introduction to Ethics or other engineering, business, bio, social ethics approved by advisor	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	39		Group 1 Core Requirements	34
	Total Hours	58		Total Hours*	52

\*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>Crowder College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
HIST 102* (or HIST 106 or HIST 107)	Western Civilization II* (or U.S. History I or U.S. History II) <small>*HIST 102 is preferred; 106 or 107 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
PHYS 250	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
GEOL 115	Intro to Geology	3	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
Humanities or Social Science or Communication	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language or one communication course from this list: ENGL 102, 203 or COMM 104.	3	Humanities or Social Science or Communication	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language or one communication course from this list: ENGLISH 1160, 1600, 3560 or SPMS 1185.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	12		Group 2 Major Requirements	12
	Group 1 Core Requirements	39		Group 1 Core Requirements	34
	Total Hours	51		Total Hours*	46

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

## Biomedical Engineering-Biomanufacturing Group 2 Major Requirements

<u>Crowder College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
COMM 104	Fundamentals of Speech	3	SP&MS 1185	Principles of Speech	3
ENGL 203	Technical Report Writing	3	ENGLISH 3560	Technical Writing	3
HIST 102 or HIST 106 or HIST 107 or PLSC 103	Western Civilization II or U.S. History I or U.S. History II or National, State, Local Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
CHEM 112	General Chemistry II	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&amp;T degree requirement. Will transfer as general credit.</small>	3
BIOL 101	General Biology	4	BIO SCI 1113, 1219	General Biology and Lab <small>Applies to degree as Track Elective.</small>	4
BIOL 152	Human Anatomy and Physiology I	5	BIO SCI 3333, 3339	Anatomy and Physiology I and Lab	4
COMP 111	Intro to Computer Science	4	CS 1971,1981*	Intro to Programming Methodology and Lab* C++ <small>*Will be substituted for CS 1500.</small>	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	27		Group 2 Major Requirements	26
	Group 1 Core Requirements	39		Group 1 Core Requirements	34
	Total Hours	66		Total Hours*	60

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

## Biomedical Engineering-Biomaterials Group 2 Major Requirements

<u>Crowder College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
COMM 104	Fundamentals of Speech	3	SP&MS 1185	Principles of Speech	3
ENGL 203	Technical Report Writing	3	ENGLISH 3560	Technical Writing	3
HIST 102 or HIST 106 or HIST 107 or PLSC 103	Western Civilization II or U.S. History I or U.S. History II or National, State, Local Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
CHEM 112	General Chemistry II	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&amp;T degree requirement. Will transfer as general credit.</small>	3
BIOL 101	General Biology	4	BIO SCI 1113*, 1219*	General General Biology* and Lab* <small>*Applies to degree as Track Elective (Non-engineering).</small>	4
BIOL 152	Human Anatomy and Physiology I	5	BIO SCI 3333, 3339	Human Anatomy and Physiology I and Lab	4
COMP 111	Intro to Computer Science	4	CS 1971,1981*	Intro to Programming Methodology and Lab* C++ <small>*Will be substituted for CS 1500.</small>	3
PHYS 250	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	30		Group 2 Major Requirements	26
	Group 1 Core Requirements	39		Group 1 Core Requirements	34
	Total Hours	69		Total Hours*	60

\*S&T advisor permission is required to transfer more than 65 credits toward the S&T Biomedical Engineering degree.

## Ceramic Engineering Group 2 Major Requirements

<u>Crowder College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
HIST 102 or HIST 106 or HIST 107 or PLSC 103	Western Civilization II or U.S. History I or U.S. History II or National, State, Local Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
PHYS 250	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
CHEM 112	General Chemistry II	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&amp;T degree requirement. Will transfer as general credit.</small>	3
ENGL 102 or COMM 104 or HSS Elective	Advanced English Composition or Fundamentals of Speech or Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language	3	ENGLISH 1160 or SPMS 1185 or HSS Elective	Writing and Research or Principles of Speech or Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	20		Group 2 Major Requirements	18
	Group 1 Core Requirements	39		Group 1 Core Requirements	34
	Total Hours	59		Total Hours*	52

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

## Chemical Engineering or Chemical Engineering - Biochemical Engineering Emphasis Group 2 Major Requirements

<u>Crowder College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
COMM 104	Fundamentals of Speech	3	SP&MS 1185	Principles of Speech	3
ENGL 203	Technical Report Writing	3	ENGLISH 3560	Technical Writing	3
HIST 102 or HIST 106 or HIST 107 or PLSC 103	Western Civilization II or U.S. History I or U.S. History II or National, State, Local Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
CHEM 112	General Chemistry II	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&amp;T degree requirement. Will transfer as general credit.</small>	3
COMP 111	Intro to Computer Science	4	CS 1971,1981*	Intro to Programming Methodology and Lab* C++ <small>*Will be substituted for CS 1500.</small>	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	21		Group 2 Major Requirements	18
	Group 1 Core Requirements	39		Group 1 Core Requirements	34
	Total Hours	60		Total Hours*	52

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

## Civil Engineering Group 2 Major Requirements

<u>Crowder College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENGL 102 or COMM 104 or ENGL 203	Advanced English Composition or Fundamentals of Speech or Technical Report Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
HIST 102 or HIST 106 or HIST 107 or PLSC 103	Western Civilization II or U.S. History I or U.S. History II or National, State, Local Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
GEOL 115	Intro to Geology	3	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
PHYS 250	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	15		Group 2 Major Requirements	15
	Group 1 Core Requirements	39		Group 1 Core Requirements	34
	Total Hours	54		Total Hours*	49

\*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

Crowder College		Semester	Missouri S&T		
COMM 104	Fundamentals of Speech	3	SPMS 1185	Principles of Speech	3
ENGL 102 or ENGL 203	Advanced English Composition or Technical Report Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIST 102 or HIST 106 or HIST 107 or PLSC 103	Western Civilization II or U.S. History I or U.S. History II or National, State, Local Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
COMP 111	Intro to Computer Science	4	CS 1500	Computational Problem Solving	3
PHYS 250	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics <small>Satisfies an Engineering Science Elective requirement.</small>	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Electives	Maximum Free Electives	3	Electives	Maximum Free Electives	3
	Group 2 Major Requirements	22		Group 2 Major Requirements	21
	Group 1 Core Requirements	39		Group 1 Core Requirements	34
	Total Hours	61		Total Hours*	55

\*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

Crowder College		Semester	Missouri S&T		
COMM 104	Fundamentals of Speech	3	SPMS 1185	Principles of Speech	3
ENGL 102 or ENGL 203	Advanced English Composition or Technical Report Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIST 102 or HIST 106 or HIST 107 or PLSC 103	Western Civilization II or U.S. History I or U.S. History II or National, State, Local Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
COMP 111	Intro to Computer Science	4	CS 1500	Computational Problem Solving	3
PHYS 250	Statics <small>PHYS 250 combined with S&amp;T MECH ENG 2350 will satisfy an Engineering Science Elective requirement. BOTH courses are required to satisfy this requirement.</small>	3	CIV ENG 2200	Engineering Mechanics-Statics <small>PHYS 250 combined with S&amp;T MECH ENG 2350 will satisfy an Engineering Science Elective requirement. BOTH courses are required to satisfy this requirement.</small>	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Electives	Maximum Free Electives	3	Electives	Maximum Free Electives	3
	Group 2 Major Requirements	22		Group 2 Major Requirements	21
	Group 1 Core Requirements	39		Group 1 Core Requirements	34
	Total Hours	61		Total Hours*	55

\*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>Crowder College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
PSYC 101	General Psychology	3	PSYCH 1101	General Psychology	3
HIST 102 or HIST 106 or HIST 107 or	Western Civilization II or U.S. History I or U.S. History II or	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or	Modern Western Civilization or American History to 1877 or American History since 1877 or	3
PLSC 103	National, State, Local Government		POL SCI 1200	American Government	
COMM 104	Fundamentals of Speech	3	SPMS 1185	Principles of Speech	3
ENGL 102 or ENGL 203	Advanced English Composition or Technical Report Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
COMP 111	Intro to Computer Science	3	CS 1971,1981	Intro to Programming Methodology and Lab C++	3
PHYS 250	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	3	Electives	Maximum Free Electives	0
	Group 2 Major Requirements	24		Group 2 Major Requirements	21
	Group 1 Core Requirements	39		Group 1 Core Requirements	34
	Total Hours	63		Total Hours*	61

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

## Environmental Engineering Group 2 Major Requirements

<u>Crowder College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENGL 102 or COMM 104 or ENGL 203	Advanced English Composition or Fundamentals of Speech or Technical Report Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
HIST 102 or HIST 106 or HIST 107	Western Civilization II or U.S. History I or U.S. History II	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310	Modern Western Civilization or American History to 1877 or American History since 1877	3
GEOL 115	Intro to Geology	3	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
CHEM 112	General Chemistry II	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&amp;T degree requirement. Will transfer as general credit.</small>	3
BIOL 101	General Biology	5	BIO SCI 1113	General Biology	3
PHYS 250	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	25		Group 2 Major Requirements	21
	Group 1 Core Requirements	39		Group 1 Core Requirements	34
	Total Hours	64		Total Hours*	55

\*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>Crowder College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENGL 203	Technical Report Writing	3	ENGLISH 3560	Technical Writing	3
HIST 102 or	Western Civilization II or		HISTORY 1200 or	Modern Western Civilization or	
HIST 106 or	U.S. History I or	3	HISTORY 1300 or	American History to 1877 or	3
HIST 107 or	U.S. History II or		HISTORY 1310 or	American History since 1877 or	
PLSC 103	National, State, Local Government		POL SCI 1200	American Government	
COMP 111	Intro to Computer Science	4	CS 1500	Computational Problem Solving	3
GEOL 115	Intro to Geology	3	GEO ENG 1150 (GEOLOGY 1110)	Physical and Environmental Geology	3
PHYS 250	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	22		Group 2 Major Requirements	21
	Group 1 Core Requirements	39		Group 1 Core Requirements	34
	Total Hours	61		Total Hours*	55

\*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>Crowder College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
HIST 102 or	Western Civilization II or		HISTORY 1200 or	Modern Western Civilization or	
HIST 106 or	U.S. History I or	3	HISTORY 1300 or	American History to 1877 or	3
HIST 107 or	U.S. History II or		HISTORY 1310 or	American History since 1877 or	
PLSC 103	National, State, Local Government		POL SCI 1200	American Government	
ENGL 102 or	Advanced English Composition or		ENGLISH 1160 or	Writing and Research or	
COMM 104 or	Fundamentals of Speech or	3	SPMS 1185 or	Principles of Speech or	3
ENGL 203	Technical Report Writing		ENGLISH 3560	Technical Writing	
COMP 111	Intro to Computer Science	3	CS 1971,1981	Intro to Programming Methodology and Lab C++	3
PHYS 250	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
ENGL 240 or	British Literature I or		ENGLISH 1211 or	British Literature I: The Beginnings to 1800 or	
ENGL 230 or	Survey of American Literature I or	3	ENGLISH 1221 or	American Literature: 1600 to 1865 or	3
ENGL 222 or	World Literature I or other literature		ENGLISH 1231	World Literature I or other literature	
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	18		Group 2 Major Requirements	18
	Group 1 Core Requirements	39		Group 1 Core Requirements	34
	Total Hours	57		Total Hours*	52

\*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>Crowder College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENGL 102 or COMM 104 or ENGL 203	Advanced English Composition or Fundamentals of Speech or Technical Report Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
HIST 102 or HIST 106 or HIST 107 or PLSC 103	Western Civilization II or U.S. History I or U.S. History II or National, State, Local Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
PHYS 250	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
CHEM 112	General Chemistry II	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&amp;T degree requirement. Will transfer as general credit.</small>	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Electives	Maximum Free Electives	5	Electives	Maximum Free Electives	3
	Group 2 Major Requirements	25		Group 2 Major Requirements	21
	Group 1 Core Requirements	39		Group 1 Core Requirements	34
	Total Hours	64		Total Hours*	55

\*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>Crowder College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENGL 102 or ENGL 203	Advanced English Composition or Technical Report Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIST 102 or HIST 106 or HIST 107 or PLSC 103	Western Civilization II or U.S. History I or U.S. History II or National, State, Local Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
PHYS 250	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
GEOL 115	Intro to Geology	3	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	18		Group 2 Major Requirements	18
	Group 1 Core Requirements	39		Group 1 Core Requirements	34
	Total Hours	57		Total Hours*	52

\*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>Crowder College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENGL 102 or COMM 104 or ENGL 203	Advanced English Composition or Fundamentals of Speech or Technical Report Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
HIST 102 or HIST 106 or HIST 107 or PLSC 103	Western Civilization II or U.S. History I or U.S. History II or National, State, Local Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
COMP 111	Intro to Computer Science	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
PHYS 250	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Electives	Maximum Free Electives	6	Electives	Maximum Free Electives	6
	Group 2 Major Requirements	24		Group 2 Major Requirements	24
	Group 1 Core Requirements	39		Group 1 Core Requirements	34
	Total Hours	63		Total Hours*	58

\*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>Crowder College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENGL 203 or ENGL 102	Technical Report Writing Advanced English Composition	3	ENGLISH 3560 or ENGLISH 1160 or	Technical Writing (preferred) or Writing and Research	3
HIST 102 or HIST 106 or HIST 107 or PLSC 103	Western Civilization II or U.S. History I or U.S. History II or National, State, Local Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
GEOL 115	Intro to Geology	3	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
PHYS 250	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	18		Group 2 Major Requirements	18
	Group 1 Core Requirements	39		Group 1 Core Requirements	34
	Total Hours	57		Total Hours*	52

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