Missouri State University-West Plains — 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.

	Missouri State University-West Plains		Semester	•	<u>Missouri S&T</u>		
MTH 261	Analytic Geometry and Calculus I	5		MATH 1214	Calculus I Grade of C or better is required.		4
MTH 280	Analytic Geometry and Calculus II	5		MATH 1215	Calculus II Grade of C or better is required.		4
MTH 292	Multivariate Calculus	3		MATH 2222	Calculus III Grade of C or better is required.		4
PHY 203	Foundations of Physics I	5		PHYSICS 1135	Engineering Physics I Grade of C or better is required.		4
PHY 204	Foundations of Physics II	5		PHYSICS 2135	Engineering Physics II Grade of C or better is required.		4
CHM 160, 161	General Chemistry I and Lab	5		CHEM 1310, 1319	General Chemistry I and Lab		5
EGR 100	Careers in Engineering and Technology	3		FR ENG 1100	Study and Careers in Engineering and Computing		1
ENG 110	Writing I	3		ENGLISH 1120	Exposition and Argumentation		3
ECO 165 or	Principles of Microeconomics or	2		ECON 1100 or	Principles of Microeconomics or		2
ECO 155	Principles of Macroeconomics	ა		ECON 1200	Principles of Macroeconomics		3
		Total Hours 37				Total Hours	32

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 or 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**

Engineering Major Requirements are detailed on the following pages.

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

Humanities/Social Science (HSS) Electives: HSS electives may include any art, English and technical communication, etymology, foreign language, music, philosophy, speech and media studies, or theatre. Your campus may have additional acceptable options. Consult with your advisor or email transfer@mst.edu with questions. See Missouri S&T online catalog at https://catalog.mst.edu/undergraduate/degreeprogramsandcourses/ for more information.

	Aerospace Engineering Group 2 Major Requirements								
	Missouri State University-West Plains		Semester		Missouri S&T				
EGR 110	Introduction to Engineering Design	3		MECH ENG 1720	Intro to Engineering Design	3			
HST 104 or	World History since 1600 C.E. or			HISTORY 1200 or	Modern Western Civilization or				
HST 121 or	Survey of US History to 1877 or	•		HISTORY 1300 or	American History to 1877 or	0			
HST 122 or	Survey of History since 1877 or	3		HISTORY 1310 or	American History since 1877 or	3			
PLS 101	American Democracy and Citizenship			POL SCI 1200	American Government				
ENG 210 or	Writing II: Academic Writing or			ENGLISH 1160 or	Writing and Research or				
COM 115 or	Fundamentals of Public Speaking or	3		SPMS 1185 or	Principles of Speech or	3			
ENG 221	Writing II: Writing for the Professions			ENGLISH 3560	Technical Writing				
CSC 125	Intro to C++ Programming	4		CS 1971, 1981	Intro to Programming Method and Lab (C++)	3			
	Literature Elective	3			Literature Elective	3			
Ethics	Ethics Elective Engineering, business, bio, social or other ethics approved by advisor.	3		Ethics	Ethics Elective Engineering, business, bio, social or other ethics approved by advisor.	3			
	No free electives applied to the degree.	0			Maximum Free Electives	0			
	Group 2 Major Requirements	19			Group 2 Major Requirements	18			
	Group 1 Core Requirements	37			Group 1 Core Requirements	32			
	Total Ho	ours 56			Total Hours* *S&T advisor permission is required to transfer more than 68 credits toward the S&T Aerospace Engineering degree.	50			

	Architectural Enginee	rir	g Gro	up 2 Major l	Requirements	
	Missouri State University-West Plains		Semester		Missouri S&T	
EGR 110	Introduction to Engineering Design	3		MECH ENG 1720	Intro to Engineering Design	3
HST 104* (or HST 121 or HST 122)	World History since 1600 C.E * (or Survey of US History to 1877 or Survey of History since 1877)	3		HISTORY 1200* (or HISTORY 1300 or HISTORY 1310)	Modern Western Civilization* (or American History to 1877 or American History since 1877) 'HISTORY 1200 is preferred; 1300 or 1310 will also be accepted.	3
HSS Elective	Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language	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: ENG 210, 221, or COM 115	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
	No free electives applied to the degree.	0			Maximum Free Electives	0
	Group 2 Major Requirements Group 1 Core Requirements	12 37			Group 2 Major Requirements Group 1 Core Requirements	12 32
	Total Hours	49			Total Hours* *S&T advisor permission is required to transfer more than 69 credits toward the S&T Architectural Engineering degree.	44

	Biomedical Eng		_							
	Group 2 Major Requirements									
	Missouri State University-West Plains		Semester		Missouri S&T					
COM 115	Fundamentals of Public Speaking	3		SP&MS 1185	Principles of Speech	3				
ENG 221	Writing II: Writing for the Professions	3		ENGLISH 3560	Technical Writing	3				
HST 104 or HST 121 or HST 122 or PLS 101	World History since 1600 C.E. or Survey of US History to 1877 or Survey of History since 1877 or American Democracy and Citizenship	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				
CHM 170, 171	General Chemistry II and Lab	4		CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) *CHEM 1510 is not an S&T degree reguirement. Will transfer as general credit.	3				
BIO 102 or BIO 121 or BIO 235	Biological Science or General Biology I or Principles of Genetics	4		BIO SCI 1113, 1219 or BIO SCI 2223	General Biology and Lab or General Genetics Applies to degree as Track Elective.	4				
CSC 125* or CSC 131 or CSC 232	Intro to C++ Programming* or Computational Thinking or Data Structures	4		CS 1500 or CS 1971,1981*	Computational Problem Solving or Intro to Programming Methodology and Lab* (C++) *Course will be substituted for CS 1500.	3				
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				
	No free electives applied to the degree.	0			Maximum Free Electives	0				
	Group 2 Major Requirements	24			Group 2 Major Requirements	22				
	Group 1 Core Requirements	37			Group 1 Core Requirements	32				
	Total Hours	61			Total Hours* *S&T advisor permission is required to transfer more than 68 credit hours toward the degree.	54				

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	Missouri State University-West Plains	<u> </u>		Semester		Missouri S&T	
COM 115	Fundamentals of Public Speaking		3		SP&MS 1185	Principles of Speech	3
ENG 221	Writing II: Writing for the Professions		3		ENGLISH 3560	Technical Writing	3
HST 104 or HST 121 or HST 122 or PLS 101	World History since 1600 C.E. or Survey of US History to 1877 or Survey of History since 1877 or American Democracy and Citizenship		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
CHM 170, 171	General Chemistry II and Lab		4		CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) *CHEM 1510 is not an S&T degree reguirement. Will transfer as general credit.	3
BIO 102 or BIO 121	Biological Science or General Biology I		4		BIO SCI 1113*, 1219*	General General Biology* and Lab* *Applies to degree as Track Elective (Non-engineering).	4
CSC 125* or CSC 131 or CSC 232	Intro to C++ Programming* or Computational Thinking or Data Structures		4		CS 1500 or CS 1971,1981*	Computational Problem Solving or Intro to Programming Methodology and Lab* (C++) *Course will be substituted for CS 1500.	3
	No free electives applied to the degree.		0			Maximum Free Electives	0
	Group 2 Major Requirements		21			Group 2 Major Requirements	19
	Group 1 Core Requirements		37			Group 1 Core Requirements	32
		Total Hours	58			Total Hours* *S&T advisor permission is required to transfer more than 65 credits toward the S&T Biomedicall Engineering degree.	51

	Ceramic Engineerin	ıg	Group	2 Major R	equirements	
	Missouri State University-West Plains		Semester		Missouri S&T	
EGR 110	Introduction to Engineering Design	3		MECH ENG 1720	Intro to Engineering Design	3
HST 104 or HST 121 or HST 122 or PLS 101	World History since 1600 C.E. or Survey of US History to 1877 or Survey of History since 1877 or American Democracy and Citizenship	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
CHM 170, 171	General Chemistry II and Lab	4		CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) *CHEM 1510 is not an S&T degree reguirement. Will transfer as general credit.	3
ENG 210 or COM 115 or HSS Elective	Writing II: Academic Writing or Fundamentals of Public Speaking or Any 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
	No free electives applied to the degree.	0			Maximum Free Electives	0
	Group 2 Major Requirements	19			Group 2 Major Requirements	18
	Group 1 Core Requirements Total Hours	37 56			Group 1 Core Requirements Total Hours* *S&T advisor permission is required to transfer more than 68 credits toward the S&T Ceramic Engineering degree.	32 50

	Chemical Engineering or Chemical Engineering - Biochemical Engineering Emphasis Group 2 Major Requirements								
	Missouri State University-West Plains		Semester	Missouri S&T					
EGR 110	Introduction to Engineering Design	3	MECH ENG 1720	Intro to Engineering Design	3				
COM 115	Fundamentals of Public Speaking	3	SP&MS 1185	Principles of Speech	3				
ENG 221	Writing II: Writing for the Professions	3	ENGLISH 3560	Technical Writing	3				
HST 104 or HST 121 or HST 122 or PLS 101	World History since 1600 C.E. or Survey of US History to 1877 or Survey of History since 1877 or American Democracy and Citizenship	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				
CHM 170	General Chemistry II	3	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) *CHEM 1510 is not an S&T degree reguirement. Will transfer as general credit.	3				
CSC 125* or CSC 131 or CSC 232	Intro to C++ Programming* or Computational Thinking or Data Structures	4	CS 1500 or CS 1971,1981*	Computational Problem Solving or Intro to Programming Methodology and Lab* (C++) *Course will be substituted for CS 1500.	3				
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				
	No free electives applied to the degree.	0		Maximum Free Electives	0				
	Group 2 Major Requirements Group 1 Core Requirements Total Hours	22 37 59		Group 2 Major Requirements Group 1 Core Requirements Total Hours* *S&T advisor permission is required to transfer more than 68 credits toward the S&T	21 32 53				

	Civil Engineering Group 2 Major Requirements								
	Missouri State University-West Plains		Semester		Missouri S&T				
EGR 110	Introduction to Engineering Design	3		MECH ENG 1720	Intro to Engineering Design	3			
ENG 210 or	Writing II: Academic Writing or			ENGLISH 1160 or	Writing and Research or				
COM 115 or	Fundamentals of Public Speaking or	3		SPMS 1185 or	Principles of Speech or	3			
ENG 221	Writing II: Writing for the Professions			ENGLISH 3560	Technical Writing				
HST 104 or	World History since 1600 C.E. or			HISTORY 1200 or	Modern Western Civilization or				
HST 121 or	Survey of US History to 1877 or	3		HISTORY 1300 or	American History to 1877 or	2			
HST 122 or	Survey of History since 1877 or	3		HISTORY 1310 or	American History since 1877 or	3			
PLS 101	American Democracy and Citizenship			POL SCI 1200	American Government				
GLG 110	Principles of Geology	4		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			
	No free electives applied to the degree.	0			Maximum Free Electives	0			
	Group 2 Major Requirements	16			Group 2 Major Requirements	15			
	Group 1 Core Requirements	37			Group 1 Core Requirements	32			
	Total Hours	53			Total Hours* *S&T advisor permission is required to transfer more than 69 credits toward the S&T Civil Engineering degree.	47			

	Computer Engineeri	ng	Grou	p 2 Major Ro	equirements	
	Missouri State University-West Plains		Semester		Missouri S&T	
COM 115	Fundamentals of Public Speaking	3		SPMS 1185	Principles of Speech	3
ENG 210 or ENG 221	Writing II: Academic Writing or Writing II: Writing for the Professions	3		ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HST 104 or HST 121 or HST 122 or PLS 101	World History since 1600 C.E. or Survey of US History to 1877 or Survey of History since 1877 or American Democracy and Citizenship	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
CSC 125 or CSC 131 or CSC 232	Intro to C++ Programming or Computational Thinking or Data Structures	4		CS 1500	Computational Problem Solving	3
BIO 235	Principles of Genetics	3		BIO SCI 2223	General Genetics (3) Satisfies a required engineering/science elective.	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	37			Group 1 Core Requirements	32
	Total Hours	59			Total Hours* *S&T advisor permission is required to transfer more than 68 credits toward the S&T Computer Engineering degree.	53

	Electrical Engineeri	ng	Group	2 Major Re	equirements	
	Missouri State University-West Plains		Semester		Missouri S&T	
EGR 110	Introduction to Engineering Design	3		MECH ENG 1720	Intro to Engineering Design	3
COM 115	Fundamentals of Public Speaking	3		SPMS 1185	Principles of Speech	3
ENG 210 or ENG 221	Writing II: Academic Writing or Writing II: Writing for the Professions	3		ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HST 104 or HST 121 or HST 122 or PLS 101	World History since 1600 C.E. or Survey of US History to 1877 or Survey of History since 1877 or American Democracy and Citizenship	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
CSC 125 or CSC 131 or CSC 232	Intro to C++ Programming or Computational Thinking or Data Structures	4		CS 1500	Computational Problem Solving	3
BIO 235	Principles of Genetics	3		BIO SCI 2223	General Genetics (3) Satisfies a required engineering/science elective.	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 Group 2 Major Requirements Group 1 Core Requirements Total Hours	3 25 37 62		Electives	Maximum Free Electives Group 2 Major Requirements Group 1 Core Requirements Total Hours* "S&T advisor permission is required to transfer more than 68 credits toward the S&T Electrical Engineering degree.	3 24 32 56

	Engineering Managen					
	Missouri State University-West Plains		<u>Semester</u>		Missouri S&T	
EGR 110	Introduction to Engineering Design	3		MECH ENG 1720	Intro to Engineering Design	3
PSY 121	Introductory Psychology	3		PSYCH 1101	General Psychology	3
HST 104 or HST 121 or HST 122 or PLS 101	World History since 1600 C.E. or Survey of US History to 1877 or Survey of History since 1877 or American Democracy and Citizenship	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
COM 115	Fundamentals of Public Speaking	3		SPMS 1185	Principles of Speech	3
ENG 210 or ENG 221	Writing II: Academic Writing or Writing II: Writing for the Professions	3		ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
CSC 125	Intro to C++ Programming	4		CS 1971, 1981	Intro to Programming Method and Lab (C++)	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
	No free electives applied to the degree.	3		Electives	Maximum Free Electives	0
	Group 2 Major Requirements	25			Group 2 Major Requirements	21
	Group 1 Core Requirements	37			Group 1 Core Requirements	32
	Total Hours	62			Total Hours* *S&T advisor permission is required to transfer more than 68 credits toward the S&T Engineering Management degree.	61

BIO 102 or Biological Science or General Biology I Humanities or Any history, economics, political science, sociology, Social Science psychology, philosophy, fine art, literature, foreign language. No free electives applied to the degree. Group 2 Major Requirements GENERAL 1510 is not an S&T degree requirement. Will transfer as greened to the degree. BIO SCI 1113, 1219* BIO SCI 1	I Engineering Group 2 Major Requirements	
ENG 210 or Writing II: Academic Writing or COM 115 or Fundamentals of Public Speaking or Selection or Principles of Speech or ENG 221 Writing II: Writing for the Professions ENGLISH 3560 Technical Writing II: Writing II: Writing for the Professions ENGLISH 3560 Technical Writing II: Writing II	ns Semester Missouri S&T	
COM 115 or Fundamentals of Public Speaking or FING 221 Writing II: Writing for the Professions ENG 221 Writing II: Writing for the Professions HST 104 or World History since 1600 C.E. or HST 104 or World History since 1600 C.E. or HST 121 or Survey of US History to 1877 or HST 122 Survey of History since 1877 GLG 110 Principles of Geology 4 GEOLOGY 1110 (GEO ENG 1150) CHM 170 General Chemistry II BIO 102 or Biological Science or General Biology I Humanities or Any history, economics, political science, sociology, Social Science No free electives applied to the degree. No free electives applied to the degree. Or Group 2 Major Requirements Survey of History since 1877 HISTORY 1300 or American History to 1877 or HISTORY 1310 American History since 1877 GEOLOGY 1110 (GEO ENG 1150) Physical and Environmental Geology CHEM 1320, 1510* General Chemistry II (3) and Qualitative Analysis "CHEM 1320, 1510* General Biology (3) and Lab* (1) FING SCI 1219 is not an S&T degree requirement. will transfer as general Biology (3) and Lab* (1) FING SCI 1219 is not an S&T degree requirement, will transfer as general Biology, philosophy, fine art, literature, foreing language. No free electives applied to the degree. Or Group 2 Major Requirements Or Maximum Free Electives Group 2 Major Requirements	3 MECH ENG 1720 Intro to Engineering Design	3
ENG 221 Writing II: Writing II	ENGLISH 1160 or Writing and Research or	
HST 104 or World History since 1600 C.E. or HST 121 or Survey of US History to 1877 or Survey of US History to 1877 or HST 122 Survey of History since 1877 HISTORY 1300 or American History to 1877 or HISTORY 1310 American History since 1877 GLG 110 Principles of Geology 4 GEOLOGY 1110 (GEO ENG 1150) Physical and Environmental Geology CHM 170 General Chemistry II 3 CHEM 1320, 1510* General Chemistry II (3) and Qualitative Analysis of CHEM 130 or Biological Science or General Biology I BIO 102 or Biological Science or General Biology I Humanities or Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language. No free electives applied to the degree. From the transfer as a science or Social Science	3 SPMS 1185 or Principles of Speech or	3
HST 121 or Survey of US History to 1877 or Survey of History since 1877 GLG 110 Principles of Geology 4 GEOLOGY 1110 (GEO ENG 1150) Physical and Environmental Geology CHM 170 General Chemistry II 3 CHEM 1320, 1510* General Biology (3) and Qualitative Analysis "CHEM 1510 is not an S&T degree requirement. Will transfer as general Biology I Biological Science or General Biology I Biological Science, sociology, philosophy, fine art, literature, foreign language. No free electives applied to the degree. Group 2 Major Requirements 3 HISTORY 1300 or American History to 1877 or HISTORY 1300 or HISTORY 1	ENGLISH 3560 Technical Writing	
HST 122 Survey of History since 1877 GLG 110 Principles of Geology 4 GEOLOGY 1110 (GEO ENG 1150) Physical and Environmental Geology CHM 170 General Chemistry II 3 CHEM 1320, 1510* General Chemistry II (3) and Qualitative Analysis CHEM 1320, 1510* General Biology (3) and Lab* (1) General Biology I BIO 102 or Biological Science or General Biology I Humanities or Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language. No free electives applied to the degree. Group 2 Major Requirements O HISTORY 1310 American History since 1877 BIO SCI 1110 General Chemistry II (3) and Qualitative Analysis CHEM 1320, 1510* General Biology (3) and Lab* (1) **BIO SCI 1113, 1219* General Biology (3) and Lab* (1) **FIO SCI 1219 is not an S&T degree requirement, will transfer as general Biology (3) and Lab* (1) **FIO SCI 1219 is not an S&T degree requirement, will transfer as general Biology (3) and Lab* (1) **FIO SCI 1219 is not an S&T degree requirement, will transfer as general Biology (3) and Lab* (1) **FIO SCI 1219 is not an S&T degree requirement, will transfer as general Biology (3) and Lab* (1) **FIO SCI 1219 is not an S&T degree requirement, will transfer as general Biology (3) and Lab* (1) **FIO SCI 1219 is not an S&T degree requirement, will transfer as general Biology (3) and Lab* (1) **FIO SCI 1219 is not an S&T degree requirement, will transfer as general Biology (3) and Lab* (1) **FIO SCI 1219 is not an S&T degree requirement, will transfer as general Biology (3) and Lab* (1) **FIO SCI 1219 is not an S&T degree requirement, will transfer as general Biology (3) and Lab* (1) **FIO SCI 1219 is not an S&T degree requirement, will transfer as general Biology (3) and Lab* (1) **FIO SCI 1219 is not an S&T degree requirement, will transfer as general Biology (3) and Lab* (1) **FIO SCI 1219 is not an S&T d	HISTORY 1200 or Modern Western Civilization or	
GLG 110 Principles of Geology 4 GEOLOGY 1110 (GEO ENG 1150) Physical and Environmental Geology CHM 170 General Chemistry II 3 CHEM 1320, 1510* General Chemistry II (3) and Qualitative Analysis "CHEM 1510 is not an S&T degree requirement. Will transfer as g BIO 102 or Biological Science or General Biology I Humanities or Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language. No free electives applied to the degree. Group 2 Major Requirements 4 GEOLOGY 1110 (GEO ENG 1150) Physical and Environmental Geology BIO SCI 1113, 1210* General Biology (3) and Lab* (1) BIO SCI 1113, 1219* BIO SCI 1219 is not an S&T degree requirement, will transfer as governed. Humanities or Social Science Psychology, philosophy, fine art, literature, foreign language. No free electives applied to the degree. Group 2 Major Requirements 4 BIO SCI 1113, 1219* BIO SCI 1219 is not an S&T degree requirement, will transfer as governed. Social Science Psychology, philosophy, fine art, literature, foreign language. Maximum Free Electives Group 2 Major Requirements	3 HISTORY 1300 or American History to 1877 or	3
GLG 110 Principles of Geology 4 (GEO ENG 1150) Physical and Environmental Geology CHM 170 General Chemistry II 3 CHEM 1320, 1510* General Chemistry II (3) and Qualitative Analysis 'CHEM 1510 is not an S&T degree requirement. Will transfer as g General Biology I BIO SCI 1113, 1219* BIO	HISTORY 1310 American History since 1877	
CHM 170 General Chemistry II 3 CHEM 1320, 1510* General Chemistry II (3) and Qualitative Analysis CHEM 1320, 1510* General Biology (3) and Lab* (1) BIO 121 General Biology I BIO SCI 1113, 1219* General Biology (3) and Lab* (1) BIO SCI 1219 is not an S&T degree requirement. will transfer as general Biology (3) and Lab* (1) BIO SCI 1219 is not an S&T degree requirement, will transfer as general Biology (3) and Lab* (1) BIO SCI 1219 is not an S&T degree requirement, will transfer as general Biology (3) and Lab* (1) BIO SCI 1219 is not an S&T degree requirement, will transfer as general Biology (3) and Lab* (1) BIO SCI 1219 is not an S&T degree requirement, will transfer as general Biology (3) and Lab* (1) BIO SCI 1219 is not an S&T degree requirement, will transfer as general Biology (3) and Lab* (1) BIO SCI 1219 is not an S&T degree requirement, will transfer as general Biology (3) and Lab* (1) BIO SCI 1219 is not an S&T degree requirement, will transfer as general Biology (3) and Lab* (1) BIO SCI 1219 is not an S&T degree requirement, will transfer as general Biology (3) and Lab* (1) BIO SCI 1219 is not an S&T degree requirement, will transfer as general Biology (3) and Lab* (1) BIO SCI 1219 is not an S&T degree requirement, will transfer as general Biology (3) and Lab* (1) BIO SCI 1219 is not an S&T degree requirement, will transfer as general Biology (3) and Lab* (1) BIO SCI 1219 is not an S&T degree requirement, will transfer as general Biology (3) and Lab* (1) BIO SCI 1219 is not an S&T degree requirement, will transfer as general Biology (3) and Lab* (1) BIO SCI 1219 is not an S&T degree requirement, will transfer as general Biology (3) and Lab* (1) BIO SCI 1219 is not an S&T degree requirement, will transfer as general Biology (3) and Lab* (1) BIO SCI 1219 is not an S&T degree requirement, will transfer as general Biology (3) and Lab* (1) BIO SCI 1219 is not an S&T degree requirement, will transfer as general Biology (3) and Lab* (1) BIO SCI 1219 is not an S&T degree requirement, will transfer as general B	GEOLOGY 1110 Physical and Environmental Geology	3
BIO 102 or Biological Science or General Biology I Humanities or Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language. No free electives applied to the degree. Group 2 Major Requirements Social Science General Biology (3) and Lab* (1) BIO SCI 1113, 1219* BIO	(GEO ENG 1150)	3
BIO 102 or Biological Science or General Biology I Humanities or Any history, economics, political science, sociology, Social Science psychology, philosophy, fine art, literature, foreign language. No free electives applied to the degree. Group 2 Major Requirements General Biology (3) and Lab* (1) BIO SCI 1113, 1219* BIO SCI 1113, 1219* General Biology (3) and Lab* (1) BIO SCI 1113, 1219* BIO SCI 1113, 1219* General Biology (3) and Lab* (1) BIO SCI 1113, 1219* BIO SCI 1113, 1219* Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language. No free electives applied to the degree. Group 2 Major Requirements Group 2 Major Requirements Group 2 Major Requirements	General Chemistry II (3) and Qualitative Analysis (2)	3
BIO 121 BIO SCI 1219 is not an S&T degree requirement, will transfer as g General Biology I 4 BIO SCI 1113, 1219* "BIO SCI 1219 is not an S&T degree requirement, will transfer as g reduction. Humanities or Social Science psychology, philosophy, fine art, literature, foreign language. No free electives applied to the degree. Group 2 Major Requirements 4 BIO SCI 1113, 1219* "BIO SCI 1219 is not an S&T degree requirement, will transfer as g Social Science Social Science psychology, philosophy, fine art, literature, foreign Maximum Free Electives Group 2 Major Requirements 4 BIO SCI 1113, 1219* **BIO SCI 1219 is not an S&T degree requirement, will transfer as g Social Science psychology, philosophy, fine art, literature, foreign Social Science psychology, philosophy, fine art, literature, for	*CHEM 1510 is not an S&T degree reguirement. Will transfer as general cre	dit.
BIO 121 General Biology I Humanities or Social Science Any history, economics, political science, sociology, Social Science Psychology, philosophy, fine art, literature, foreign language. No free electives applied to the degree. Group 2 Major Requirements 4 BIO SCI 1219 is not an S&T degree requirement, will transfer as Greek. Any history, economics, political science, sociology, Social Science Social Science Maximum Free Electives Group 2 Major Requirements 4 BIO SCI 1219 is not an S&T degree requirement, will transfer as Greek. Any history, economics, political science, sociology, Social Science Social Science Maximum Free Electives Group 2 Major Requirements	General Biology (3) and Lab* (1)	
Humanities or Social Science Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language. No free electives applied to the degree. Group 2 Major Requirements Any history, economics, political science, sociology, Social Science psychology, philosophy, fine art, literature, foreign language. Maximum Free Electives Group 2 Major Requirements	4 BIO SCI 1113, 1219* "BIO SCI 1219 is not an S&T degree requirement, will transfer as general el	ectrical 3
Social Science psychology, philosophy, fine art, literature, foreign language. No free electives applied to the degree. Group 2 Major Requirements Social Science psychology, philosophy, fine art, literature, foreign language. Maximum Free Electives Group 2 Major Requirements Group 2 Major Requirements	credit.	
Social Science psychology, philosophy, fine art, literature, foreign language. No free electives applied to the degree. Group 2 Major Requirements Social Science psychology, philosophy, fine art, literature, foreign language. Maximum Free Electives Group 2 Major Requirements 23 Group 2 Major Requirements	ociology, Any history, economics, political science, sociology,	
Group 2 Major Requirements 23 Group 2 Major Requirements	foreign language. Social Science psychology, philosophy, fine art, literature, foreign language.	juage. 3
Group 2 Major Requirements 23 Group 2 Major Requirements	0 Maximum Free Flectives	0
		21
	37 Group 1 Core Requirements	32
Total Hours 60		Hours* 53
	*S&T advisor permission is required to transfer more than 69 credits toward	

·	Missouri State University-West Plains		<u>Semester</u>		Missouri S&T	
EGR 110	Introduction to Engineering Design	3	MECH ENG	G 1720 I	Intro to Engineering Design	3
ENG 221	Writing II: Writing for the Professions	3	ENGLISH 3	3560	Technical Writing	3
HST 104 or HST 121 or HST 122 or PLS 101	World History since 1600 C.E. or Survey of US History to 1877 or Survey of History since 1877 or American Democracy and Citizenship	3	HISTORY 1 HISTORY 1 HISTORY 1 POL SCI 12	1300 or 7 1310 or 7	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
CSC 125* or CSC 131 or CSC 232	Intro to C++ Programming* or Computational Thinking or Data Structures	4	CS 1500 or CS 1971, 1		Computational Problem Solving or Intro to Programming Methodology and Lab	3
GLG 110	Principles of Geology	4	GEO ENG (GEOLOG)		Physical and Environmental Geology	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities Social Scie		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 Social Scie		Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	No free electives applied to the degree.	0		N	Maximum Free Electives	0
	Group 2 Major Requirements	23			Group 2 Major Requirements	21
	Group 1 Core Requirements	37		(Group 1 Core Requirements	32
	Total Hours	60			Total Hours* *S&T advisor permission is required to transfer more than 68 credits toward the S&T Geological Engineering degree.	53

	Mechanical Engineer	in	g Grou	ı <mark>p 2 Major</mark> R	Requirements	
	Missouri State University-West Plains		Semester		Missouri S&T	
EGR 110	Introduction to Engineering Design	3	,	MECH ENG 1720	Intro to Engineering Design	3
HST 104 or	World History since 1600 C.E. or			HISTORY 1200 or	Modern Western Civilization or	
HST 121 or	Survey of US History to 1877 or	2		HISTORY 1300 or	American History to 1877 or	2
HST 122 or	Survey of History since 1877 or	3		HISTORY 1310 or	American History since 1877 or	3
PLS 101	American Democracy and Citizenship			POL SCI 1200	American Government	
ENG 210 or	Writing II: Academic Writing or			ENGLISH 1160 or	Writing and Research or	
COM 115 or	Fundamentals of Public Speaking or	3		SPMS 1185 or	Principles of Speech or	3
ENG 221	Writing II: Writing for the Professions			ENGLISH 3560	Technical Writing	
EGR 120	Intro to Computer Aided Design	2		MECH ENG 1761	Intro to Computer Aided Design	1
CSC 125	Intro to C++ Programming	4		CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
	Literature Elective	3			Literature Elective	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
	No free electives applied to the degree.	0			Maximum Free Electives	0
	Group 2 Major Requirements	21			Group 2 Major Requirements	19
	Group 1 Core Requirements	37			Group 1 Core Requirements	32
	Total Hours	58			Total Hours* *S&T advisor permission is required to transfer more than 68 credits toward the S&T Mechanical Engineering degree.	51

	Metallurgical Engineering Group 2 Major Requirements								
	Missouri State University-West Plains		Semester	Missouri S&T					
EGR 110	Introduction to Engineering Design	3	MECH ENG	720 Intro to Engineering Design	3				
ENG 210 or COM 115 or ENG 221	Writing II: Academic Writing or Fundamentals of Public Speaking or Writing II: Writing for the Professions	3	ENGLISH 110 SPMS 1185 0 ENGLISH 350	Principles of Speech or	3				
HST 104 or HST 121 or HST 122 or PLS 101	World History since 1600 C.E. or Survey of US History to 1877 or Survey of History since 1877 or American Democracy and Citizenship	3	HISTORY 12 HISTORY 13 HISTORY 13 POL SCI 120	00 or American History to 1877 or 10 or American History since 1877 or	3				
CHM 170	General Chemistry II	3	CHEM 1320,	1510* General Chemistry II (3) and Qualitative Analysis (2) *CHEM 1510 is not an S&T degree reguirement. Will transfer as general credit.	3				
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities o Social Science	· ··· / · · · · · · · · · · · · · · · ·	3				
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities o Social Science	· ··· / · · · · · · · · · · · · · · · ·	3				
Electives	Maximum Free Electives	5	Electives	Maximum Free Electives	3				
	Group 2 Major Requirements	23		Group 2 Major Requirements	21				
	Group 1 Core Requirements	37			32				
	Total Hours	60		Total Hours* 5 *S&T advisor permission is required to transfer more than 68 credits toward the S&T Metallurgical Engineering degree.	53				

	Mining Engineering Group 2 Major Requirements								
	Missouri State University-West Plains		Semester	Missouri S&T					
EGR 110	Introduction to Engineering Design	3	MECH ENG 17	20 Intro to Engineering Design	3				
ENG 210 or ENG 221	Writing II: Academic Writing or Writing II: Writing for the Professions	3	ENGLISH 116 ENGLISH 356	3	3				
HST 104 or HST 121 or HST 122 or PLS 101	World History since 1600 C.E. or Survey of US History to 1877 or Survey of History since 1877 or American Democracy and Clitizenship	3	HISTORY 120 HISTORY 130 HISTORY 131 POL SCI 1200	or American History to 1877 or	3				
GLG 110	Principles of Geology	4	GEOLOGY 11 (GEO ENG 11	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				
	No free electives applied to the degree.	0		Maximum Free Electives	0				
	Group 2 Major Requirements	19		Group 2 Major Requirements	18				
	Group 1 Core Requirements	37		Group 1 Core Requirements	32				
	Total Hours	56		Total Hours* "S&T advisor permission is required to transfer more than 68 credits toward the S&T Mining Engineering degree.	50				

	Nuclear Engineerin	g	Group	2 Major Red	quirements	
	Missouri State University-West Plains		Semester		Missouri S&T	
EGR 110	Introduction to Engineering Design	3		MECH ENG 1720	Intro to Engineering Design	3
ENG 210 or COM 115 or ENG 221	Writing II: Academic Writing or Fundamentals of Public Speaking or Writing II: Writing for the Professions	3		ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
HST 104 or HST 121 or HST 122 or PLS 101	World History since 1600 C.E. or Survey of US History to 1877 or Survey of History since 1877 or American Democracy and Citizenship	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
CSC 125	Intro to C++ Programming	4		CS 1971, 1981	Intro to Programming Method and Lab (C++)	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 Group 1 Core Requirements Total Hours	25 37 62			Group 2 Major Requirements Group 1 Core Requirements Total Hours* *S&T advisor permission is required to transfer more than 68 credits toward the S&T Nuclear Engineering degree.	24 32 56

	Petroleum Engineering Group 2 Major Requirements									
	Missouri State University-West Plains		Semester		Missouri S&T					
EGR 110	Introduction to Engineering Design	3		MECH ENG 1720	Intro to Engineering Design	3				
ENG 210 or ENG 221	Writing II: Academic Writing or Writing II: Writing for the Professions	3		ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing (preferred)	3				
HST 104 or HST 121 or HST 122 or PLS 101	World History since 1600 C.E. or Survey of US History to 1877 or Survey of History since 1877 or American Democracy and Citizenship	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				
GLG 110	Principles of Geology	4		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				
	No free electives applied to the degree.	0			Maximum Free Electives	0				
	Group 2 Major Requirements	19			Group 2 Major Requirements	18				
	Group 1 Core Requirements Total Hours	37 56			Group 1 Core Requirements Total Hours*	32 50				
	Total House	-			*S&T advisor permission is required to transfer more than 69 credits toward the S&T Petroleum Engineering degree.					