

Webster University — Missouri S&T

General Engineering Transfer Guide

Effective as of Fall 2017

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

Group 1 - Core Requirements: All Majors Take All Courses

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

<u>Webster University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
MATH 1610 and MATH 1620	Calculus I and Calculus II	10	MATH 1214 and MATH 1215	Calculus for Engineers I and Calculus for Engineers II	4
MATH 3000	Calculus III	5	MATH 2222	Calculus with Analytic Geometry III <small>Grade of C or better is required.</small>	4
MATH 3040	Differential Equations	3	MATH 3304	Elementary Differential Equations	3
PHYS 2030, 2031	University Physics I and Lab	4	PHYSICS 1135	Engineering Physics I <small>Grade of C or better is required.</small>	4
PHYS 2040, 2041	University Physics II and Lab	4	PHYSICS 2135	Engineering Physics II <small>Grade of C or better is required.</small>	4
1101	General Chemistry I and Lab	4	CHEM 1310, 1319	General Chemistry I and Lab	5
WRIT 1010	Composition	3	ENGLISH 1120	Exposition and Argumentation	3
ECON 2020 or ECON 2010	Principles of Microeconomics or Principles of Macroeconomics	3	ECON 1100 or ECON 1200	Principles of Microeconomics or Principles of Macroeconomics	3
Total Hours			36	Total Hours	
					30

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

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

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

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

Engineering Major Requirements are detailed on the following pages.

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

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

Aerospace Engineering Group 2 Major Requirements

<u>Webster University</u>		<u>Semester</u>		<u>Missouri S&T</u>		
HIST1310 or HIST 2300 or POLT 1060	Nineteenth-Century America or Twentieth-Century United States or American Politics	Intro to	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
SPMC 1040 or WRIT 3200	Public Speaking or Technical Writing		3	SPMS 1185 or ENGLISH 3560	Principles of Speech or Technical Writing	3
COSC 1550	Computer Programming I		3	CS 1971	Intro to Programming Method	3
MATH 3200	Statistics		3	STAT 3115	Engineering Statistics <small>(Will satisfy the Advanced Math/Comp Sci elective requirement.)</small>	3
	<i>See your advisor for course options.</i>				Literature Elective	3
	<i>See your advisor for course options.</i>				Ethics Elective	3
	<i>No free electives applied to the degree.</i>				Maximum Free Electives	0
	Group 2 Major Requirements		12		Group 2 Major Requirements	18
	Group 1 Core Requirements		36		Group 1 Core Requirements	30
	Total Hours		48		Total Hours*	48

*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>Webster University</u>		<u>Semester</u>		<u>Missouri S&T</u>		
HIST1310 or HIST 2300	Nineteenth-Century America or Twentieth-Century United States		3	HISTORY 1300 or HISTORY 1310	American History to 1877 or American History since 1877	3
MATH 3200	Statistics		3	STAT 3115	Engineering Statistics <small>(Will be substituted for STAT 3113.)</small>	3
SPMC 1040	Public Speaking		3	SPMS 1185 or HSS Elective	Public Speaking or Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language	3
	<i>No free electives applied to the degree.</i>				Maximum Free Electives	0
	Group 2 Major Requirements		9		Group 2 Major Requirements	9
	Group 1 Core Requirements		36		Group 1 Core Requirements	30
	Total Hours		45		Total Hours*	39

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

Ceramic Engineering Group 2 Major Requirements

<u>Webster University</u>		<u>Semester</u>		<u>Missouri S&T</u>		
HIST1310 or HIST 2300 or POLT 1060	Nineteenth-Century America or Twentieth-Century United States or to American Politics	Intro	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
CHEM 1110, 1111	General Chemistry II and Lab		4	CHEM 1320	General Chemistry II	3
MATH 3200	Statistics		3	STAT 3115	Engineering Statistics	3
SPMC 1040	Public Speaking		3	SPMS 1185 or HSS Elective	Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language	3
<i>See your advisor for course options.</i>				Humanities/Social Science Elective		3
<i>No free electives applied to the degree.</i>				Maximum Free Electives		0
Group 2 Major Requirements			13	Group 2 Major Requirements		15
Group 1 Core Requirements			36	Group 1 Core Requirements		30
Total Hours			49	Total Hours*		45

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

Chemical Engineering Group 2 Major Requirements

<u>Webster University</u>		<u>Semester</u>		<u>Missouri S&T</u>		
WRIT 3200	Technical Writing		3	ENGLISH 3560	Technical Writing	3
HIST1310 or HIST 2300 or POLT 1060	Nineteenth-Century America or Twentieth-Century United States or to American Politics	Intro	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
CHEM 1110, 1111	General Chemistry II and Lab		4	CHEM 1320	General Chemistry II	5
COSC 1550	Computer Programming I		3	CS 1971	Intro to Programming Method	3
MATH 3200	Statistics		3	STAT 3115	Engineering Statistics (Will be substituted for STAT 3113.)	3
<i>See your advisor for course options.</i>				Humanities/Social Science Elective		3
<i>See your advisor for course options.</i>				Humanities/Social Science Elective		3
<i>No free electives applied to the degree.</i>				Maximum Free Electives		0
Group 2 Major Requirements			16	Group 2 Major Requirements		23
Group 1 Core Requirements			36	Group 1 Core Requirements		30
Total Hours			52	Total Hours*		53

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

Chemical Engineering - Biochemical Engineering Emphasis Group 2 Major Requirements

<u>Webster University</u>		<u>Semester</u>		<u>Missouri S&T</u>		
WRIT 3200	Technical Writing		3	ENGLISH 3560	Technical Writing	3
HIST1310 or HIST 2300 or POLT 1060	Nineteenth-Century America or Twentieth-Century United States or to American Politics	Intro	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
CHEM 1110, 1111	General Chemistry II and Lab		4	CHEM 1320	General Chemistry II	5
COSC 1550	Computer Programming I		3	CS 1971	Intro to Programming Method	3
MATH 3200	Statistics		3	STAT 3115	Engineering Statistics (Will be substituted for STAT 3113.)	3
<i>See your advisor for course options.</i>				Humanities/Social Science Elective		3
<i>See your advisor for course options.</i>				Humanities/Social Science Elective		3
<i>No free electives applied to the degree.</i>				Maximum Free Electives		0
Group 2 Major Requirements			16	Group 2 Major Requirements		23
Group 1 Core Requirements			36	Group 1 Core Requirements		30
Total Hours			52	Total Hours*		53

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

Civil Engineering Group 2 Major Requirements

<u>Webster University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
SPMC 1040 or WRIT 3200	Public Speaking or Technical Writing	3	SPMS 1185 or ENGLISH 3560	Principles of Speech or Technical Writing	3
HIST1310 or HIST 2300 or POLT 1060	Nineteenth-Century America or Twentieth-Century United States or to American Politics	Intro 3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
SCIN 1600, 1601	Physical Geology and Lab	3	GEO 1110/GE 1150	Intro to Physical Geology	3
MATH 3200	Statistics	3	STAT 3115	Engineering Statistics (Will be substituted for STAT 3113.)	3
<i>See your advisor for course options.</i>			Humanities/Social Science Elective		3
<i>No free electives applied to the degree.</i>			Maximum Free Electives		0
Group 2 Major Requirements		12	Group 2 Major Requirements		15
Group 1 Core Requirements		36	Group 1 Core Requirements		30
Total Hours		48	Total Hours*		45

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

Computer Engineering Group 2 Major Requirements

<u>Webster University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
SPMC 1040	Public Speaking	3	SPMS 1185	Public Speaking	3
WRIT 3200	Technical Writing	3	ENGLISH 3560	Technical Writing	3
HIST1310 or HIST 2300 or POLT 1060	Nineteenth-Century America or Twentieth-Century United States or to American Politics	Intro 3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
MATH 3200	Statistics	3	STAT 3115	Engineering Statistics (Will be substituted for STAT 3117.)	3
<i>See your advisor for course options.</i>			Humanities/Social Science Elective		3
<i>See your advisor for course options.</i>			Maximum Free Electives		3
Group 2 Major Requirements		12	Group 2 Major Requirements		18
Group 1 Core Requirements		36	Group 1 Core Requirements		30
Total Hours		48	Total Hours*		48

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

Electrical Engineering Group 2 Major Requirements

<u>Webster University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
SPMC 1040	Public Speaking	3	SPMS 1185	Public Speaking	3
WRIT 3200	Technical Writing	3	ENGLISH 3560	Technical Writing	3
HIST1310 or HIST 2300 or POLT 1060	Nineteenth-Century America or Twentieth-Century United States or to American Politics	Intro 3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
MATH 3200	Statistics	3	STAT 3115	Engineering Statistics (Will be substituted for STAT 3117.)	3
<i>See your advisor for course options.</i>			Humanities/Social Science Elective		3
<i>See your advisor for course options.</i>			Maximum Free Electives		3
Group 2 Major Requirements		12	Group 2 Major Requirements		18
Group 1 Core Requirements		36	Group 1 Core Requirements		30
Total Hours		48	Total Hours*		48

*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>Webster University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
PSYC 1030	Intro to Psychology	3	PSYCH 1101	General Psychology	3
HIST1310 or HIST 2300 or POLT 1060	Nineteenth-Century America or Twentieth-Century United States or to American Politics	Intro 3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
SPMC 1040 or WRIT 3200	Public Speaking or Technical Writing	3	SPMS 1185 or ENGLISH 3560	Principles of Speech or Technical Writing	3
MATH 3200	Statistics	3	STAT 3115	Engineering Statistics	3
<i>See your advisor for course options.</i>			Humanities/Social Science Elective		3
<i>See your advisor for course options.</i>			Maximum Free Electives		3
Group 2 Major Requirements		12	Group 2 Major Requirements		18
Group 1 Core Requirements		36	Group 1 Core Requirements		30
Total Hours		48	Total Hours*		48

*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>Webster University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
SPMC 1040 or WRIT 3200	Public Speaking or Technical Writing	3	SPMS 1185 or ENGLISH 3560	Principles of Speech or Technical Writing	3
HIST1310 or HIST 2300	Nineteenth-Century America or Twentieth-Century United States	3	HISTORY 1300 or HISTORY 1310	American History to 1877 or American History since 1877	3
SCIN 1600, 1601	Physical Geology and Lab	3	GEO 1110/GE 1150	Intro to Physical Geology	3
CHEM 1110, 1111	General Chemistry II and Lab	4	CHEM 1320	General Chemistry II	3
BIOL 1550, 1551	Essentials of Biology and Lab	5	BIO SCI 1113	General Biology	4
MATH 3200	Statistics	3	STAT 3115	Engineering Statistics (Will be substituted for STAT 3113.)	3
<i>See your advisor for course options.</i>			Humanities/Social Science Elective		3
<i>No free electives applied to the degree.</i>			Maximum Free Electives		0
Group 2 Major Requirements		21	Group 2 Major Requirements		22
Group 1 Core Requirements		36	Group 1 Core Requirements		30
Total Hours		57	Total Hours*		52

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

Geological Engineering Group 2 Major Requirements

<u>Webster University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
SPMC 1040 or WRIT 3200	Public Speaking or Technical Writing	3	SPMS 1185 or ENGLISH 3560	Principles of Speech or Technical Writing	3
HIST1310 or HIST 2300 or POLT 1060	Nineteenth-Century America or Twentieth-Century United States or to American Politics	Intro 3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
SCIN 1600, 1601	Physical Geology and Lab	3	GEO 1110/GE 1150	Physical and Environmental Geology	3
BIOL 1550, 1551 or CHEM 1110, 1111	Essentials of Biology and Lab or General Chemistry II	5	BIO SCI 1113 or CHEM 1320 or CHEM 2210	General Biology or General Chemistry II <i>or any 3-hour course in chemistry, geochemistry, or biology</i>	3
<i>See your advisor for course options.</i>			Humanities/Social Science Elective		3
<i>See your advisor for course options.</i>			Humanities/Social Science Elective		3
<i>No free electives applied to the degree.</i>			Maximum Free Electives		0
Group 2 Major Requirements		14	Group 2 Major Requirements		15
Group 1 Core Requirements		36	Group 1 Core Requirements		30
Total Hours		50	Total Hours*		45

*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>Webster University</u>		<u>Semester</u>	<u>Missouri S&T</u>			
HIST1310 or HIST 2300 or POLT 1060	Nineteenth-Century America or Twentieth-Century United States or to American Politics	Intro	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
SPMC 1040 or WRIT 3200	Public Speaking or Technical Writing	3		SPMS 1185 or ENGLISH 3560	Principles of Speech or Technical Writing	3
COSC 1550	Computer Programming I	3		CS 1971	Intro to Programming Method	3
MATH 3200	Statistics	3		STAT 3115	Engineering Statistics (Will satisfy the Advanced Math/Comp Sci elective requirement.)	3
	<i>See your advisor for course options.</i>				Literature Elective	3
	<i>No free electives applied to the degree.</i>				Humanities/Social Science Elective	3
	Group 2 Major Requirements	3			Maximum Free Electives	0
	Group 1 Core Requirements	36			Group 2 Major Requirements	9
	Total Hours	39			Group 1 Core Requirements	30
					Total Hours*	39

*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>Webster University</u>		<u>Semester</u>	<u>Missouri S&T</u>			
SPMC 1040 or WRIT 3200	Public Speaking or Technical Writing	3		SPMS 1185 or ENGLISH 3560	Principles of Speech or Technical Writing	3
HIST1310 or HIST 2300 or POLT 1060	Nineteenth-Century America or Twentieth-Century United States or to American Politics	Intro	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
MATH 3200	Statistics	3		STAT 3115	Engineering Statistics	3
CHEM 1110, 1111	General Chemistry II and Lab	4		CHEM 1320	General Chemistry II	3
	<i>See your advisor for course options.</i>				Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>				Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>				Maximum Free Electives	5
	Group 2 Major Requirements	13			Group 2 Major Requirements	23
	Group 1 Core Requirements	36			Group 1 Core Requirements	30
	Total Hours	49			Total Hours*	53

*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>Webster University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
WRIT 3200	Technical Writing	3	ENGLISH 3560	Technical Writing	3
HIST1310 or HIST 2300 or POLT 1060	Nineteenth-Century America or Twentieth-Century United States or to American Politics	Intro 3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
MATH 3200	Statistics	3	STAT 3115	Engineering Statistics	3
SCIN 1600, 1601	Physical Geology and Lab	3	GEO 1110/GE 1150	Intro to Physical Geology	3
<i>See your advisor for course options.</i>			Humanities/Social Science Elective		3
<i>See your advisor for course options.</i>			Humanities/Social Science Elective		3
<i>No free electives applied to the degree.</i>			Maximum Free Electives		0
Group 2 Major Requirements		12	Group 2 Major Requirements		18
Group 1 Core Requirements		36	Group 1 Core Requirements		30
Total Hours		48	Total Hours*		48

*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>Webster University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
WRIT 3200	Technical Writing	3	ENGLISH 3560	Technical Writing	3
HIST1310 or HIST 2300 or POLT 1060	Nineteenth-Century America or Twentieth-Century United States or to American Politics	Intro 3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
COSC 1550	Computer Programming I	3	CS 1971	Intro to Programming Method	3
MATH 3200	Statistics	3	STAT 3115	Engineering Statistics	3
<i>See your advisor for course options.</i>			Humanities/Social Science Elective		3
<i>See your advisor for course options.</i>			Humanities/Social Science Elective		3
<i>See your advisor for course options.</i>			Maximum Free Electives		6
Group 2 Major Requirements		12	Group 2 Major Requirements		21
Group 1 Core Requirements		36	Group 1 Core Requirements		30
Total Hours		48	Total Hours*		51

*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>Webster University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
WRIT 3200	Technical Writing	3	ENGLISH 3560	Technical Writing	3
HIST1310 or HIST 2300 or POLT 1060	Nineteenth-Century America or Twentieth-Century United States or to American Politics	Intro 3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
SCIN 1600, 1601	Physical Geology and Lab	3	GEO 1110/GE 1150	Physical and Environmental Geology	3
MATH 3200	Statistics	3	STAT 3115	Engineering Statistics	3
<i>See your advisor for course options.</i>			Humanities/Social Science Elective		3
<i>See your advisor for course options.</i>			Humanities/Social Science Elective		3
<i>No free electives applied to the degree.</i>			Maximum Free Electives		0
Group 2 Major Requirements		6	Group 2 Major Requirements		12
Group 1 Core Requirements		36	Group 1 Core Requirements		30
Total Hours		42	Total Hours*		42

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