

William Jewell 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.

	<u>William Jewell College</u>	<u>Semester</u>		<u>Missouri S&T</u>
MAT 109 and MAT 200	Calculus I and Calculus II BOTH MAT 109 and MAT 200 must be taken to receive credit for S&T MATH 1214 and 1215.	8	MATH 1214 and MATH 1215	Calculus I and Calculus II Grade of C or better is required. BOTH MAT 109 and MAT 200 must be taken to receive credit for S&T MATH 1214 and 1215.
MAT 201 and MAT 302	Calculus III and Calculus IV BOTH MAT 201 and MAT 302 must be taken to receive credit for S&T MATH 2222.	4	MATH 2222	Calculus III Grade of C or better is required. BOTH MAT 201 and MAT 302 must be taken to receive credit for S&T MATH 2222.
MAT 202	Intro to Differential Equations	4	MATH 3304	Elementary Differential Equations
PHY 213	General Physics I and Lab	5	PHYSICS 1135	Engineering Physics I Grade of C or better is required.
PHY 214	General Physics II and Lab	5	PHYSICS 2135	Engineering Physics II Grade of C or better is required.
CHE 121	General Chemistry I and Lab	4	CHEM 1310, 1319	General Chemistry I and Lab
CTI 102	Written Communication	4	ENGLISH 1120	Exposition and Argumentation
ECO 101 or ECO 202	Principles of Microeconomics or Principles of Macroeconomics	4	ECON 1100 or ECON 1200	Principles of Microeconomics or Principles of Macroeconomics
Total Hours		38	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
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

<u>William Jewell College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HIS 121 or HIS 122 or POL 150	Foundations of U.S. History or The Modern United States or Intro to American Government	4	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
COM 100	Fundamentals of Speech Communication	3	SPMS 1185	Principles of Speech	3
EGR 230	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 443	Classical Mechanics	4	AERO ENG 2360	Dynamics	3
EGR 233	Mechanics of Solids	3	CIV ENG 2210	Mechanics of Materials	3
MAT 281	Linear Algebra	4	MATH 3108	Linear Algebra I <small>Will satisfy the Advanced Math/Statistics elective requirement.</small>	3
	Literature Elective	3		Literature Elective	3
	Ethics Elective	3		Ethics Elective <small>Engineering, business, bio, social or other ethics approved by advisor.</small>	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	27		Group 2 Major Requirements	24
	Group 1 Core Requirements	38		Group 1 Core Requirements	30
	Total Hours	65		Total Hours*	54

*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>William Jewell College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HIS 121 or HIS 122	Foundations of U.S. History or The Modern United States	4	HISTORY 1300 or HISTORY 1310	American History to 1877 or American History since 1877	3
EGR 230	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 443 or EGR 231	Classical Mechanics (4) or Dynamics (3)	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
EGR 233	Mechanics of Solids	3	CIV ENG 2210	Mechanics of Materials	3
MAT 301	Intro to Probability	4	STAT 3117*	Intro to Probability and Statistics* <small>*Will be substituted for STAT 3113.</small>	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: COM 100.	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	20		Group 2 Major Requirements	17
	Group 1 Core Requirements	38		Group 1 Core Requirements	30
	Total Hours	58		Total Hours*	47

*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>William Jewell College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
COM 100	Fundamentals of Speech Communication	3	SP&MS 1185	Principles of Speech	3
HIS 121 or HIS 122 or POL 150	Foundations of U.S. History or The Modern United States or Intro to American Government	4	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
CHE 122, 122L	General Chemistry II and Lab	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&T degree requirement. Will transfer as general credit.</small>	3
CHE 301, 301L	Organic Chemistry I and Lab	5	CHEM 2210, 2219	Organic Chemistry I and Lab	4
CHE 301, 301L or BIO 234	Organic Chemistry I and Lab (5) or Genetics (4)	4	CHEM 2220, 2229 or BIO SCI 2223	Organic Chemistry II and Lab or General Genetics <small>Applies to degree as Track Elective.</small>	4
BIO 233, 233L	Cell and Molecular Biology and Lab	5	BIO SCI 2213, 2219	Cell Biology and Lab	4
BIO 243, 243L and BIO 250, 250L	Human Anatomy and Lab (5) and Human Physiology and Lab (5) <small>*The combination of WJC BIO 243, 243L, 250, 250L is equivalent to the combination of Missouri S&T BIO SCI 3333, 3339, 3343, 3349. All four WJC courses must be taken to receive full transfer credit.</small>	10	BIO SCI 3333, 3339 and BIO SCI 3343, 3349*	Human Anatomy and Physiology I and Lab or Human Anatomy and Physiology II and Lab* <small>*The combination of WJC BIO 243, 243L, 250, 250L is equivalent to the combination of Missouri S&T BIO SCI 3333, 3339, 3343, 3349. All four WJC courses must be taken to receive full transfer credit. BIO SCI 3343, 3349 are not Missouri S&T degree requirements. Will apply to degree totals as general elective credits per catalog requirements.</small>	8
DTS 190	Intro to Computer Science	4	CS 1500	Computational Problem Solving	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	40		Group 2 Major Requirements	35
	Group 1 Core Requirements	38		Group 1 Core Requirements	30
	Total Hours	78		Total Hours*	65

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

Biomedical Engineering-Biomaterials Group 2 Major Requirements

<u>William Jewell College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
COM 100	Fundamentals of Speech Communication	3	SP&MS 1185	Principles of Speech	3
HIS 121 or HIS 122 or POL 150	Foundations of U.S. History or The Modern United States or Intro to American Government	4	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
CHE 122, 122L	General Chemistry II and Lab	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&T degree requirement. Will transfer as general credit.</small>	3
CHE 301, 301L	Organic Chemistry I and Lab	5	CHEM 2210, 2219*	Organic Chemistry I and Lab* <small>*CHEM 2219 Lab applies to the degree as a Track Elective (non-engineering).</small>	4
CHE 302, 302L	Organic Chemistry II and Lab	5	CHEM 2220, 2229*	Organic Chemistry II and Lab* <small>CHEM 2229 Lab applies to the degree as a Track Elective (non-engineering).</small>	4
BIO 233, 233L	Cell and Molecular Biology and Lab	5	BIO SCI 2213, 2219	Cell Biology and Lab	4
BIO 243, 243L and BIO 250, 250L	Human Anatomy and Lab (5) and Human Physiology and Lab (5) <small>*The combination of WJC BIO 243, 243L, 250, 250L is equivalent to the combination of Missouri S&T BIO SCI 3333, 3339, 3343, 3349. All four WJC courses must be taken to receive full transfer credit.</small>	10	BIO SCI 3333, 3339 and BIO SCI 3343, 3349*	Human Anatomy and Physiology I and Lab or Human Anatomy and Physiology II and Lab* <small>*The combination of WJC BIO 243, 243L, 250, 250L is equivalent to the combination of Missouri S&T BIO SCI 3333, 3339, 3343, 3349. All four WJC courses must be taken to receive full transfer credit. BIO SCI 3343, 3349 are not Missouri S&T degree requirements. Will apply to degree totals as general elective credits per catalog requirements.</small>	8
DTS 190	Intro to Computer Science	4	CS 1500	Computational Problem Solving	3
EGR 230	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	44		Group 2 Major Requirements	35
	Group 1 Core Requirements	38		Group 1 Core Requirements	30
	Total Hours	82		Total Hours*	65

*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>William Jewell College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HIS 121 or HIS 122 or POL 150	Foundations of U.S. History or The Modern United States or Intro to American Government	4	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
EGR 230	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 233	Mechanics of Solids	3	CIV ENG 2210	Mechanics of Materials	3
CHE 301	Organic Chemistry I	4	CHEM 2210	Organic Chemistry I <i>Will satisfy the advanced chemistry elective requirement.</i>	3
CHE 122	General Chemistry II	4	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <i>*CHEM 1510 is not an S&T degree requirement. Will transfer as general credit.</i>	3
MAT 305	Intro to Probability	4	STAT 3117	Intro to Probability and Statistics <i>or any statistics course 3000-level or higher. Satisfies statistics elective requirement.</i>	3
PHY 316	Modern Physics	4	PHYS 2305	Intro to Modern Physics	3
COM 100 or HSS Elective	Fundamentals of Speech Communication or Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	SPMS 1185 or HSS Elective	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	35		Group 2 Major Requirements	30
	Group 1 Core Requirements	38		Group 1 Core Requirements	30
	Total Hours	73		Total Hours*	60

*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>William Jewell College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
COM 100	Fundamentals of Speech Communication	3	SP&MS 1185	Principles of Speech	3
HIS 121 or HIS 122 or POL 150	Foundations of U.S. History or The Modern United States or Intro to American Government	4	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
CHE 122, 122L	General Chemistry II and Lab	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <i>*CHEM 1510 is not an S&T degree requirement. Will transfer as general credit.</i>	3
CHE 301, 301L	Organic Chemistry I and Lab	5	CHEM 2210, 2219*	Organic Chemistry I and Lab* <i>*The lab will apply to the degree as 1 of the 9 science elective credits (below) .</i>	4
CHE 302 or CHE 406 or BIO 233, 233L or BIO 321, 321L	Organic Chemistry II (4) or Instrumental Analysis (4) or Cell and Molecular Biology and Lab (5) or Microbiology and Lab (5) <i>Select up to 8 hours.</i>	8	CHEM 2220 or CHEM 2510 or BIO SCI 2213, 2219 or BIO SCI 3313, 3319	Organic Chemistry II (3) or Analytical Chemistry (4) or Cell Biology and Lab (4) or Microbiology and Lab (5) <i>Will satisfy science elective requirement. Select up to 9 hours from these options or CHEM 2219 Organic Chemistry Lab.</i>	8
DTS 190	Intro to Computer Science	4	CS 1500	Computational Problem Solving	3
MAT 301	Intro to Probability	4	STAT 3117*	Intro to Probability and Statistics* <i>*Will be substituted for STAT 3113.</i>	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	36		Group 2 Major Requirements	30
	Group 1 Core Requirements	38		Group 1 Core Requirements	30
	Total Hours	74		Total Hours*	60

*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>William Jewell College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
COM 100	Fundamentals of Speech Communication	3	SPMS 1185	Principles of Speech	3
HIS 121 or HIS 122 or POL 150	Foundations of U.S. History or The Modern United States or Intro to American Government	4	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
EGR 230	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 443 or EGR 231	Classical Mechanics (4) or Dynamics (3)	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
EGR 233	Mechanics of Solids	3	CIV ENG 2210	Mechanics of Materials	3
MAT 301	Intro to Probability	4	STAT 3117*	Intro to Probability and Statistics* <small>*Will be substituted for STAT 3113.</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	23		Group 2 Major Requirements	20
	Group 1 Core Requirements	38		Group 1 Core Requirements	30
	Total Hours	61		Total Hours*	50

*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>William Jewell College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
COM 100	Fundamentals of Speech Communication	2	SPMS 1185	Principles of Speech	3
HIS 121 or	Foundations of U.S. History or		HISTORY 1300 or	American History to 1877 or	
HIS 122 or	The Modern United States or	4	HISTORY 1310 or	American History since 1877 or	3
POL 150	Intro to American Government		POL SCI 1200	American Government	
DTS 190	Intro to Computer Science	4	CS 1500	Computational Problem Solving	3
EGR 230 or	Statics (3) or		CIV ENG 2200 or	Engineering Mechanics-Statics (3) or	
PHY 443 or	Classical Mechanics (4) or		MECH ENG 2350 or	Engineering Mechanics-Dynamics (2) or	
EGR 231 or	Dynamics (3) or	3	CHEM 2210 or	Organic Chemistry I (4) or	3
CHE 301 or	Organic Chemistry I (4) or		BIO SCI 2213 or	Cell Biology (3) or	
BIO 233 or	Cell and Molecular Biology (4) or		PHYSICS 2305	Modern Physics (3)	
PHY 316	Modern Physics (4)			Satisfies a required engineering/science elective.	
MAT 281	Linear Algebra	4	MATH 3108	Linear Algebra	3
MAT 305	Intro to Probability	4		Will satisfy a required math elective.	
			STAT 3117	Intro to Probability and Statistics	3
Humanities or	Any history, economics, political science, sociology,		Humanities or	Any history, economics, political science, sociology,	
Social Science	psychology, philosophy, fine art, literature, foreign language.	3	Social Science	psychology, philosophy, fine art, literature, foreign language.	3
Electives	Maximum Free Electives	3	Electives	Maximum Free Electives	3
	Group 2 Major Requirements	27		Group 2 Major Requirements	24
	Group 1 Core Requirements	38		Group 1 Core Requirements	30
	Total Hours	65		Total Hours*	54

*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>William Jewell College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
COM 100	Fundamentals of Speech Communication	2	SPMS 1185	Principles of Speech	3
HIS 121 or	Foundations of U.S. History or		HISTORY 1300 or	American History to 1877 or	
HIS 122 or	The Modern United States or	4	HISTORY 1310 or	American History since 1877 or	3
POL 150	Intro to American Government		POL SCI 1200	American Government	
DTS 190	Intro to Computer Science	4	CS 1500	Computational Problem Solving	3
EGR 230 and	Statics (3) and		CIV ENG 2200 and	Engineering Mechanics-Statics (3) and	
PHY 443 or EGR 231	Classical Mechanics (4) or Dynamics (3)		MECH ENG 2350	Engineering Mechanics-Dynamics (2)	
BOTH of the courses above or ONE	Both courses above combined or any one of the following courses will satisfy a		BOTH of the courses above or ONE	Both courses above combined or any one of the following courses will satisfy a	
of the courses below.	required engineering science elective.	4	of the courses below.	required engineering science elective.	
OR	OR		OR	OR	3
PHY 316 or	Modern Physics (4) or		PHYSICS 2305 or	Intro to Modern Physics (3) or	
CHE 301 or	Organic Chemistry I (4) or		CHEM 2210 or	Organic Chemistry I (3) or	
BIO 233	Cell and Molecular Biology (4)		BIO SCI 2213	Cell Biology (3) or	
MAT 281	Linear Algebra	4	MATH 3108	Linear Algebra I	3
MAT 305	Intro to Probability	4	STAT 3117	Intro to Probability and Statistics	3
Humanities or	Any history, economics, political science, sociology,		Humanities or	Any history, economics, political science, sociology,	
Social Science	psychology, philosophy, fine art, literature, foreign language.	3	Social Science	psychology, philosophy, fine art, literature, foreign language.	3
Electives	Maximum Free Electives	3	Electives	Maximum Free Electives	3
	Group 2 Major Requirements	28		Group 2 Major Requirements	24
	Group 1 Core Requirements	38		Group 1 Core Requirements	30
	Total Hours	66		Total Hours*	54

*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>William Jewell College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
PSY 101	Intro to Psychological Science	4	PSYCH 1101	General Psychology	3
HIS 121 or HIS 122 or POL 150	Foundations of U.S. History or The Modern United States or Intro to American Government	4	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
COM 100	Fundamentals of Speech Communication	2	SPMS 1185	Principles of Speech	3
EGR 230	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 443 or EGR 233	Classical Mechanics (4) or Mechanics of Solids	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
MAT 305	Intro to Probability	4	CIV ENG 2210	Mechanics of Materials	3
			STAT 3117	Intro to Probability and Statistics	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	4	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	30		Group 2 Major Requirements	23
	Group 1 Core Requirements	38		Group 1 Core Requirements	30
	Total Hours	68		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>William Jewell College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
COM 100	Fundamentals of Speech Communication	2	SPMS 1185	Principles of Speech	3
HIS 121 or HIS 122	Foundations of U.S. History or The Modern United States	4	HISTORY 1300 or HISTORY 1310	American History to 1877 or American History since 1877	3
CHE 122	General Chemistry II	4	CHEM 1320	General Chemistry II	3
EGR 230	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 443 or EGR 233	Classical mechanics (4) or Dynamics (2)	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
EGR 233	Mechanics of Solids	3	CIV ENG 2210	Mechanics of Materials	3
MAT 301	Intro to Probability	4	STAT 3117	Intro to Probability and Statistics	3
				<i>Will be substituted for STAT 3113.</i>	
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	26		Group 2 Major Requirements	23
	Group 1 Core Requirements	38		Group 1 Core Requirements	30
	Total Hours	64		Total Hours*	53

*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>William Jewell College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HIS 121 or HIS 122 or POL 150 DTS 190	Foundations of U.S. History or The Modern United States or Intro to American Government	4	HISTORY 1300 or HISTORY 1310 or POL SCI 1200 CS 1500	American History to 1877 or American History since 1877 or American Government Computational Problem Solving	3
EGR 230	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 443 or EGR 231	Classical Mechanics (4) or Dynamics (3)	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
EGR 233	Mechanics of Solids	3	CIV ENG 2210	Mechanics of Materials	3
MAT 301	Intro to Probability	4	STAT 3117	Intro to Probability and Statistics	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	27		Group 2 Major Requirements	23
	Group 1 Core Requirements	38		Group 1 Core Requirements	30
	Total Hours	65		Total Hours*	53

*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>William Jewell College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HIS 121 or HIS 122 or POL 150	Foundations of U.S. History or The Modern United States or Intro to American Government	4	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
COM 100	Fundamentals of Speech Communication	2	SPMS 1185	Principles of Speech	3
EGR 230	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 443 or EGR 233	Classical Mechanics (4) or Mechanics of Solids	3	MECH ENG 2360	Dynamics	3
		3	CIV ENG 2210	Mechanics of Materials	3
MAT 281	Linear Algebra	4	MATH 3108	Linear Algebra I <small>Will satisfy the Advanced Math/Statistics elective requirement.</small>	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
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	25		Group 2 Major Requirements	24
	Group 1 Core Requirements	38		Group 1 Core Requirements	30
	Total Hours	63		Total Hours*	54

*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>William Jewell College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
COM 100	Fundamentals of Speech Communication	2	SPMS 1185	Principles of Speech	3
HIS 121 or HIS 122 or POL 150	Foundations of U.S. History or The Modern United States or Intro to American Government	4	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
EGR 230	Statics	3	CIV ENG 2200	Engineering Mechanics - Statics	3
EGR 233	Mechanics of Solids	3	CIV ENG 2210	Mechanics of Materials	3
CHE 122	General Chemistry II	4	CHEM 1320	General Chemistry II	3
CHE 301 or PHY 316	Organic Chemistry I or Modern Physics	4	CHEM 2210 or PHYSICS 2305	Organic Chemistry I (4) or Intro to Modern Physics (3) <small>Not specifically required for the degree but will satisfy Out-of-Department Technical 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
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	31		Group 2 Major Requirements	27
	Group 1 Core Requirements	38		Group 1 Core Requirements	30
	Total Hours	69		Total Hours*	57

*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>William Jewell College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HIS 121 or HIS 122 or POL 150	Foundations of U.S. History or The Modern United States or Intro to American Government	4	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
MAT 301	Intro to Probability	4	STAT 3117*	Intro to Probability and Statistics* <small>*Will be substituted for the STAT 3113/3115 requirement.</small>	3
EGR 230	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 443 or EGR 231	Classical Mechanics (4) or Dynamics (3)	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
EGR 233	Mechanics of Solids	3	CIV ENG 2210	Mechanics of Materials	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	23		Group 2 Major Requirements	20
	Group 1 Core Requirements	38		Group 1 Core Requirements	30
	Total Hours	61		Total Hours*	50

*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>William Jewell College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
COM 100	Fundamentals of Speech Communication	2	SPMS 1185	Principles of Speech	3
HIS 121 or HIS 122 or POL 150	Foundations of U.S. History or The Modern United States or Intro to American Government	4	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
MAT 281	Linear Algebra	4	MATH 3108	Linear Algebra I	3
EGR 230	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 233	Mechanics of Solids	3	CIV ENG 2210	Mechanics of Materials	3
MAT 301	Intro to Probability	4	STAT 3117	Intro to Probability and Statistics	3
PHY 316	Modern Physics	4	PHYSICS 2305 or PHYSICS 2311	Intro to Modern Physics or Modern Physics	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	36		Group 2 Major Requirements	33
	Group 1 Core Requirements	38		Group 1 Core Requirements	30
	Total Hours	74		Total Hours*	63

*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>William Jewell College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HIS 121 or HIS 122 or POL 150	Foundations of U.S. History or The Modern United States or Intro to American Government	4	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
EGR 230	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 443 or EGR 231	Classical Mechanics (4) or Dynamics (3)	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
EGR 233	Mechanics of Solids	3	CIV ENG 2210	Mechanics of Materials	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	19		Group 2 Major Requirements	17
	Group 1 Core Requirements	38		Group 1 Core Requirements	30
	Total Hours	57		Total Hours*	47

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