Johnson County Community College — Missouri S&T General Engineering

Transfer Guide Effective as of Fall 2025

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

Students are not required to complete all courses on this guide before transferring to Missouri S&T.

Group 1 - Core Requirements: All Majors Take All Courses

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

	Johnson County Community College	Sen	nester	Missouri S&T	
MATH 241 and	Calculus I and	10	MATH 1214 and	Calculus I and	
MATH 242	Calculus II	10	MATH 1215	Calculus II Grade of C or better is required.	0
MATH 243	Calculus III	5	MATH 2222	Calculus III Grade of C or better is required.	4
MATH 254	Differential Equations	4	MATH 3304	Elementary Differential Equations	3
PHYS 220	Engineering Physics I	5	PHYSICS 1135	Engineering Physics I Grade of C or better is required.	4
PHYS 221	Engineering Physics II	5	PHYSICS 2135	Engineering Physics II Grade of C or better is required.	4
ENGR 121	Engineering Orientation	2	FR ENG 1100	Study and Careers in Engineering and Computing	1
ENGL 121 or ENGL 119	Composition I (3) or College Composition I with Review (5)	3	ENGLISH 1120	Exposition and Argumentation	3
		Total Hours 34			Total Hours 27

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.

This transfer guide is published by Missouri University of Science and Technology and is in effect as of Fall 2025.
Further information or updates are available from Missouri S&T Transfer Admissions at transfer.mst.edu, transfer@mst.edu, or 800-522-0938

	Aerospace Engine	erinç	g Group 2 Major R	lequirements	
	Johnson County Community College		Semester	Missouri S&T	
ENGL 122 or ENGL 123 or COMS 121	Composition II or Technical Writing I or Public Speaking	3	ENGLISH 1160 or ENGLISH 3560 or SPMS 1185	Writing and Research or Technical Writing or Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHEM 124, 125	General Chemistry I and Lab	5	CHEM 1310*, 1319	General Chemistry I and Lab *CHEM 1310 will be substituted for CHEM 1305.	5
CS 200 or CS 250	Concepts of Programming Algorithms Using C++ or Basic Data Structures using C++	4	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
ENGR 251 ENGR 284	Statics Thermodynamics	3 4	CIV ENG 2200 MECH ENG 2519	Engineering Mechanics-Statics Thermodynamics	3
MATH 246	Elementary Linear Algebra	3	MATH 3108	Linear Algebra I Satisfies the Advanced Math/Comp Sci elective requirement.	3
PHIL 143	Ethics or other engineering, business, bio, social ethics approved by advisor	3	PHILOS 1130	How Should I Live? An Introduction to Ethics or other engineering, business, bio, social ethics approved by advisor	3
	Humanities, Arts, a		Sciences General Education Requi	irements	
	6 hours Humanitie	es and Fine and Social	each group below, select 15 hours to in- Arts from at least two specific discipline: Sciences from at least two specific disci 1310, or POL SCI 1200 to satisfy the	s and iplines.	
		Huma	nities and Fine Arts	3	
ENGL 236 or ENGL 237 or ENGL 246 or ENGL 247 or ENGL 251 or HIST 140* or HIST 141* or MUS 121 or MUS 126 or THEA 120 HIST 151 or HIST 154 or HIST 154 or HIST 126* or GEOS 145 or PHIL 121 or PHIL 124 or POLS 124* or PSYC 130 or ECON 231 or ECON 230 or Foreign Language	British Literature to 1800 or British Literature after 1800 or American Literature I or American Literature II or World Literature to 1620 or US History to 1877* or US History since 1877* or Intro to Music Listening or Intro to World Music or Intro to Theatre *Satisfies the State of Missouri government requirement. Select 6 Western Civ: Ancient World to the Renaissance or World History: Traditional or Western Civ: Scientific Revolution to Modern Age* or World Regional Geography or Intro to Philosophy or Logic and Critical Thinking or American National Government* or Intro to Psychology or Principles of Microeconomics or Principles of Microeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	6 Behavio 6 hours from	m at least two specific disciplines. ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1221 or ENGLISH 1221 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1221 or HISTORY 1300° or HISTORY 1300° or HISTORY 1100 or THEATRE 1150 ral and Social Sciences m at least two specific disciplines. HISTORY 1100 or HISTORY 1100 or HISTORY 2110 or PHIL 1105 or PHIL 1105 or PHIL 1115 or POL SCI 1200° or PSYCH 1101 or ECON 1200 or FOSYCH 1100 or ECON 1200 or Foreign Language	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Music Understanding and Appreciation or Theatre for Social Change *Satisfies the State of Missouri government requirement. Early Western Civilization or Early Western Civilization or Modern Western Civilization or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government*or General Psychology or Principles of Microeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	6
	Humanities, Arts, Social Sciences Elective: Any history, art		Arts, and Social Sciences Select 3 hours.	Humanities, Arts, Social Sciences Elective: Any history, art,	
HASS Elective	music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3	HASS Elective	music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3
	No free electives applied to the degree. Group 2 Major Requirements Group 1 Core Requirements Total H	0 40 34 ours 74		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	0 38 27 65

	Architectural En	gineeri	ng Gro	oup 2 Major	Requirements	
	Johnson County Community College		Semeste	r	Missouri S&T	
ENGL 122 or ENGL 123 or COMS 121	Composition II or Technical Writing I or Public Speaking	3		ENGLISH 1160 or ENGLISH 3560 or SPMS 1185	Writing and Research or Technical Writing or Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHEM 124, 125	General Chemistry I and Lab	5		CHEM 1310*, 1319	General Chemistry I and Lab *CHEM 1310 will be substituted for CHEM 1305.	5
ENGR 251	Statics	3		CIV ENG 2200	Engineering Mechanics-Statics	3
ENGR 254	Dynamics	3		MECH ENG 2350	Engineering Mechanics-Dynamics	2
ENGR 284	Thermodynamics	4		MECH ENG 2519*	Thermodynamics* *Will be substituted for MECH ENG 2527.	3
GEOS 130	General Geology	5		GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
	6 hours He	umanities and Fir havioral and Soci TORY 1200, 130	ne Arts from at I al Sciences fror	•	s and iplines.	
	· ·			o specific disciplines.		
ENGL 236 or ENGL 237 or ENGL 246 or ENGL 247 or ENGL 251 or HIST 140* or HIST 141* or MUS 121 or MUS 126 or THEA 120	British Literature to 1800 or British Literature after 1800 or American Literature I or American Literature II or World Literature to 1620 or US History to 1877* or US History since 1877* or Intro to Music Listening or Intro to World Music or Intro to Theatre "Satisfies the State of Missouri government requirement.	6		ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1223 or HISTORY 1300° or HISTORY 1310° or MUSIC 1150 or MUSIC 1150 or THEATRE 1150	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Music Understanding and Appreciation or Music Understanding and Appreciation or Theatre for Social Change *Satisfies the State of Missouri government requirement.	6
	Calaat Charre		oral and Soci		DV 4000	
HIST 126*	Western Civ: Scientific Revolution to Modern Ag *Satisfies the State of Missouri government requirement.		•	ciplines to include HISTO HISTORY 1200*	MOdern Western Civilization* Satisfies the State of Missouri Government requirement.	3
PHIL 121 or PHIL 124 or POLS 124* or PSYC 130 or ECON 231 or ECON 230 or Foreign Language	Intro to Philosophy or Logic and Critical Thinking or American National Government* or Intro to Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	3		PHIL 1105 or PHIL 1115 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	3
	No free electives applied to the degree.	0			Maximum Free Electives	0
	Group 2 Major Requirements Group 1 Core Requirements	35 34 Total Hours 69			Group 2 Major Requirements Group 1 Core Requirements Total Hours* *S&T advisor permission is required to transfer more than 69 credits toward the S&T Architectural Engineering degree.	31 27 58

	Biomedical E Group			g-Biomanufa equirements		
	Johnson County Community College				Missouri S&T	
00110 404	•	•	<u>Semeste</u>	<u>I</u> SP&MS 1185	Principles of Speech	•
COMS 121	Public Speaking	3			Applies to degree as Gen Ed Communication requirement.	3
CHEM 124, 125	General Chemistry I and Lab	5		CHEM 1310, 1319	General Chemistry I and Lab	5
CHEM 131	General Chemistry II	4		CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) *CHEM 1510 is not a degree requirement, transfers as general elective credit.	3
CHEM 220	Organic Chemistry I	5		CHEM 2210, 2219	Organic Chemistry I and Lab	4
CHEM 221 or BIOL 121 or BIOL 205	Organic Chemistry II (5) or Introductory Biology for Nonmajors (4) or General Genetics (4)	4		CHEM 2220, 2229 or BIO SCI 1113, 1219 or BIO SCI 2223	Organic Chemistry II and Lab or General Biology and Lab or General Goegies Applies to degree as Track Elective.	4
BIOL 135	Principles of Cell and Molecular Biology	4		BIO SCI 2213, 2219	Cell Biology and Lab	4
BIOL 144	Human Anatomy and Physiology	5		BIO SCI 3333, 3359	Anatomy and Physiology I and Lab	4
CS 235 or CS 250 or CS 200*	Object-Oriented Programming Using C++ or Basic Data Structures using C++ or Concepts of Programming Algorithms Using C++*	4		CS 1500 or CS 1971,1981*	Computational Problem Solving or Intro to Programming Methodology and Lab* C++) *Will be substituted for CS 1500.	3
ENGR 284	Thermodynamics	4		MECH ENG 2519*	Thermodynamics* 'The combination of MECH ENG 2519 AND CHEM ENG 4000 (an independent study, online S&T course) will be substituted for CHEM ENG 2110 by the biomedical engineering department. Students must complete both courses to receive credit.	3
	6 hours Behavioral a *At least one course must be selected from HISTORY 12	and Socia 200, 1300 Hum	al Sciences from 0, 1310, or PO nanities and F	•	ines.	
ENGL 236 or ENGL 237 or ENGL 246 or ENGL 247 or ENGL 251 or HIST 140* or HIST 141* or MUS 121 or MUS 126 or THEA 120	British Literature to 1800 or British Literature after 1800 or American Literature I or American Literature II or World Literature to 1620 or US History to 1877* or Intro to Music Listening or Intro to World Music or Intro to Theatre *satisfies the State of Missouri government requirement.	6		ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1222 or HISTORY 1300* or HISTORY 1310* or MUSIC 1150 or THEATRE 1150	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Music Understanding and Appreciation or Music Understanding and Appreciation or Theatre for Social Change *Satisfies the State of Missouri government requirement.	6
		Behavio	oral and Soci	al Sciences		
HIST 125 or HIST 151 or HIST 126* or GEOS 145 or POLS 124* or PSYC 130 or ECON 231 or ECON 230 or Foreign Language	Western Civ: Ancient World to the Renaissance or World History: Traditional or Western Civ: Scientific Revolution to Modern Age* or World Regional Geography or American National Government* or Intro to Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language "Satisfies the State of Missouri government requirement.	3	Select 3 hou	HISTORY 1100 or HISTORY 1100 or HISTORY 1200* or HISTORY 2110 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or Early Western Civilization or Modern Western Civilization* or World Regional Geography or American Government* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	3
ENOL 400		EN	s, Arts, and S GLISH 3560 r	•	T. A. J. Wells	0
ENGL 123	Technical Writing I	3		ENGLISH 3560	Technical Writing	3
	No free electives applied to the degree. Group 2 Major Requirements Group 1 Core Requirements Total Ho	0 50 34 ours 84			Maximum Free Electives Group 2 Major Requirements Group 1 Core Requirements Total Hours* *S&T advisor permission is required to transfer more than 69 credit hours toward the degree.	0 45 27 72

				ing-Biomate equirements		
	Johnson County Community College		Semester	1	Missouri S&T	
COMS 121	Public Speaking	3		SP&MS 1185	Principles of Speech	3
CHEM 124, 125	General Chemistry I and Lab	5		CHEM 1310, 1319	Applies to degree as Gen Ed Communication requirement. General Chemistry I and Lab	5
CHEM 131	General Chemistry II	4		CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) *CHEM 1510 is not a degree requirement, transfers as general elective credit.	3
CHEM 220	Organic Chemistry I	5		CHEM 2210, 2219*	Organic Chemistry I and Lab* *CHEM 2219 Lab applies to the degree as a Track Elective (non-engineering).	4
CHEM 221	Organic Chemistry II	5		CHEM 2220, 2229*	Organic Chemistry II and Lab* CHEM 2229 Lab applies to the degree as a Track Elective (non-engineering).	4
BIOL 121	Introductory Biology for Nonmajors	4		BIO SCI 1113*, 1219*	General Biology* and Lab* *Applies to degree as Track Elective (Non-engineering).	4
BIOL 135	Principles of Cell and Molecular Biology	4		BIO SCI 2213, 2219	Cell Biology and Lab	4
BIOL 144 CS 235 or	Human Anatomy and Physiology Object-Oriented Programming Using C++ or	5		BIO SCI 3333, 3359	Human Anatomy and Physiology I and Lab	4
CS 250 or CS 200*	Basic Data Structures using C++ or Concepts of Programming Algorithms Using C++*	4		CS 1500 or CS 1971,1981*	Computational Problem Solving or Intro to Programming Methodology and Lab* C++) *Will be substituted for CS 1500.	3
ENGR 251	Statics	3		CIV ENG 2200	Engineering Mechanics-Statics	3
ENGL 236 or ENGL 237 or ENGL 246 or ENGL 247 or ENGL 251 or HIST 140° or HIST 141° or MUS 121 or MUS 126 or	*At least one course must be selected from HIST	<mark>DRY 1200, 1300,</mark> Huma	1310, or POI nities and F	•		6
THEA 120	Intro to Theatre *Satisfies the State of Missouri government requirement.			THEATRE 1150	Theatre for Social Change *Satisfies the State of Missouri government requirement.	
	Catalies the state of missouri government requirement.		al and Socia		Causines the Grate of Missouri government requirement.	
HIST 125 or HIST 151 or HIST 126* or	Western Civ: Ancient World to the Renaissance or World History: Traditional or Western Civ: Scientific Revolution to Modern Age		Select 3 hou	HISTORY 1100 or HISTORY 1100 or HISTORY 1200* or	Early Western Civilization or Early Western Civilization or Modern Western Civilization* or	
GEOS 145 or POLS 124* or PSYC 130 or ECON 231 or ECON 230 or Foreign Language	World Regional Geography or American National Government* or Intro to Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	3		HISTORY 2110 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	World Regional Geography or American Government* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	3
			Arts, and S	ocial Sciences		
ENGL 123	Technical Writing I	3	511 0000 10	ENGLISH 3560	Technical Writing	3
	No free electives applied to the degree.	0			Maximum Free Electives	0
	Group 2 Major Requirements Group 1 Core Requirements	54 34 otal Hours 88			Group 2 Major Requirements Group 1 Core Requirements Total Hours *S&T advisor permission is required to transfer more than 69 credits toward the S&T Biomedical Engineering degree.	49 27

	Coromio Engli	noorin	~ Crour	2 Major Boo	auiremente	
	Ceramic Engi	neerin	g Group	2 Major Rec	quirements	
	Johnson County Community College		Semeste	<u>r</u>	Missouri S&T	
ENGL 122 or ENGL 123 or COMS 121	Composition II or Technical Writing I or Public Speaking	:	3	ENGLISH 1160 or ENGLISH 3560 or SPMS 1185	Writing and Research or Technical Writing or Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
ENGR 251 CHEM 124, 125	Statics General Chemistry I and Lab		3 5	CIV ENG 2200 CHEM 1310, 1319	Engineering Mechanics-Statics General Chemistry I and Lab	3 5
CHEM 131	General Chemistry II		4	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) "CHEM 1510 is not a degree requirement, transfers as general elective credit.	3
CHEM 220	Organic Chemistry I	:	5	CHEM 2210, 2219*	Organic Chemistry I (3) and Lab* (1) Satisfies the advanced chemistry elective requirement. 'The lab is not a degree requirement, transfers as general elective credit.	3
	Humanities.	Arts. and Soc	ial Sciences G	eneral Education Require		
	From the 6 hours Hu	options listed umanities and F navioral and So	in each group b ine Arts from at l cial Sciences fro	elow, select 15 hours to include ast two specific disciplines are at least two specific disciplines.	ude and ines.	
		Hu	manities and F	ine Arts		
ENGL 236 or ENGL 237 or	S British Literature to 1800 or British Literature after 1800 or	Select 6 hours	from at least tw	o specific disciplines. ENGLISH 1211 or ENGLISH 1212 or	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present	
ENGL 246 or ENGL 247 or ENGL 251 or HIST 140* or	American Literature II or American Literature II or World Literature to 1620 or US History to 1877* or		6	ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or	American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or	6
HIST 141* or MUS 121 or MUS 126 or THEA 120	US History since 1877* or Intro to Music Listening or Intro to World Music or Intro to Theatre *Satisfies the State of Missouri government requirement.			HISTORY 1300* or MUSIC 1150 or MUSIC 1150 or THEATRE 1150	American History Since 1877* or Music Understanding and Appreciation or Music Understanding and Appreciation or Theatre for Social Change *Satisfies the State of Missouri government requirement.	Ü
			ioral and Soci			
LUCT 405 an		Select 6 hours	from at least tw	o specific disciplines.	Farly Mastern Chillingtian an	
HIST 125 or HIST 151 or HIST 126* or GEOS 145 or PHIL 121 or POLS 124* or POLS 124* or PSYC 130 or ECON 231 or ECON 230 or Foreign Language	Western Civ: Ancient World to the Renaissance or World History: Traditional or Western Civ: Scientific Revolution to Modern Ag World Regional Geography or Intro to Philosophy or Logic and Critical Thinking or American National Government* or Intro to Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	,	6	HISTORY 1100 or HISTORY 1200 or HISTORY 1200* or HISTORY 2110 or PHIL 1105 or PHIL 1115 or POL SCI 1200* or PSYCH 1101 or ECON 1200 or ECON 1200 or Foreign Language	Early Western Civilization or Early Western Civilization or Modern Western Civilization* or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government*or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	6
			es, Arts, and S Select 3 hou	ocial Sciences ars.		
HASS Elective	Humanities, Arts, Social Sciences Elective: Any hist music, theater, English and technical communication philosophy, political science, psychology, economics etymology, or foreign language.	١,	3	HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3
	No free electives applied to the degree. Group 2 Major Requirements Group 1 Core Requirements	3	0 35 34 39		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 Ceramic Engineering degree.	0 32 27 59

	<u>Chen</u>	ոi <u>ca</u>	l Engi	neering or		
	Chemical Engineering				ering Emphasis	
				equirements		
	Johnson County Community College		Semeste		Missouri S&T	
COMS 121	Public Speaking	3		SP&MS 1185	Principles of Speech	3
CHEM 124, 125	General Chemistry I and Lab	5		CHEM 1310, 1319	Applies to degree as Gen Ed Communication requirement. General Chemistry I and Lab	5
CHEM 131	General Chemistry II	4		CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis* (2)	3
0.12.11	Contract Charmony II	•		0.12.11 1020, 1010	*CHEM 1510 is not a degree requirement, transfers as general elective credit. Organic Chemistry I and Lab*	ŭ
CHEM 220	Organic Chemistry I	5		CHEM 2210, 2219*	*CHEM 2210 is a degree requirement. CHEM 2219 applies to the degree as 1 of 9 required science elective credits See note below.	4
CHEM 221 or BIOL 135 or BIOL 230,231	Organic Chemistry II (5) or Principles of Cell and Molecular Biology (4) or Microbiology and Lab (5) Will satisfy science elective requirement. Select up to 8 hours from these options.	9		CHEM 2220 or BIO SCI 2213, 2219 or BIO SCI 3313, 3319	Organic Chemistry II (3) or Cell Biology and Lab (4) or Microbiology and Lab (5) Applies to the degree as required science elective credits. Select up to 9 hours from these options or CHEM 2219 Organic Chemistry Lab.	8
CS 235 or CS 250 or CS 200*	Object-Oriented Programming Using C++ or Basic Data Structures using C++ or Concepts of Programming Algorithms Using C++*	4		CS 1500 or CS 1971,1981*	Computational Problem Solving or Intro to Programming Methodology and Lab* C++) *Will be substituted for CS 1500.	3
ENGR 284	Thermodynamics	4		MECH ENG 2519*	Thermodynamics* "The combination of MECH ENG 2519 AND CHEM ENG 4000 (an independent study, online S&T course) will be substituted for CHEM ENG 2110 by the chemical engineering department. Students must complete both courses to receive credit.	3
	From the options li 6 hours Humanities	sted in e and Fine nd Social	each group be Arts from at I Sciences fror	eneral Education Require elow, select 15 hours to include east two specific disciplines on at least two specific disciplines the SCI 1200 to satisfy the SCI	ide and ines.	
	At least one course must be selected from mis Tok 1 120		anities and F	•	ate of Missouri government requirement.	
	Select 6 h			o specific disciplines.		
ENGL 236 or ENGL 237 or ENGL 246 or ENGL 247 or ENGL 251 or HIST 140° or HIST 141° or MUS 121 or MUS 126 or THEA 120	British Literature to 1800 or British Literature after 1800 or American Literature I or American Literature II or World Literature to 1620 or US History to 1877* or US History since 1877* or Intro to Music Listening or Intro to World Music or Intro to Theatre *Satisfies the State of Missouri government requirement.	6		ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300° or HISTORY 1310° or MUSIC 1150 or MUSIC 1150 or THEATRE 1150	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Music Understanding and Appreciation or Music Understanding and Appreciation or Theatre for Social Change *Satisfies the State of Missouri government requirement.	6
			ral and Socia	al Sciences o specific disciplines.		
HIST 125 or HIST 151 or HIST 126* or GEOS 145 or PHIL 121 or PHIL 124 or POLS 124* or PSYC 130 or ECON 231 or ECON 230 or Foreign Language	Western Civ: Ancient World to the Renaissance or World History: Traditional or Western Civ: Scientific Revolution to Modern Age* or World Regional Geography or Intro to Philosophy or Logic and Critical Thinking or American National Government* or Intro to Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language "Satisfies the State of Missouri government requirement.	6		HISTORY 1100 or HISTORY 1100 or HISTORY 1100 or HISTORY 2100* or HISTORY 2110 or PHIL 1115 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or Early Western Civilization or Modern Western Civilization* or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government*	6
	Hum			ocial Sciences		
ENGL 123	Technical Writing I	ENG 3	SLISH 3560 re	equired. ENGLISH 3560	Technical Writing	3
LITOL 120	No free electives applied to the degree. Group 2 Major Requirements Group 1 Core Requirements	0 49 34		L.10LIGI 1 0000	Maximum Free Electives Group 2 Major Requirements Group 1 Core Requirements	0 44 27
	Total Hou	rs 83			Total Hours* *S&T advisor permission is required to transfer more than 68 credits toward the S&T Chemical Engineering degree.	71

	Civil Engineeri	ng G	roup 2	Major Requ	irements	
	Johnson County Community College		Semester		Missouri S&T	
ENGL 122 or ENGL 123 or COMS 121	Composition II or Technical Writing I or Public Speaking	3		ENGLISH 1160 or ENGLISH 3560 or SPMS 1185	Writing and Research or Technical Writing or Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHEM 124, 125	General Chemistry I and Lab	5		CHEM 1310, 1319	General Chemistry I and Lab	5
GEOS 130	General Geology	5		GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
ENGR 251	Statics	3		CIV ENG 2200	Engineering Mechanics-Statics	3
ENGR 254	Dynamics	3		MECH ENG 2350	Engineering Mechanics-Dynamics	2
	From the option 6 hours Humaniti	s listed in es and Fin and Socia	each group be e Arts from at le al Sciences from	eneral Education Require elow, select 15 hours to inclu- east two specific disciplines a n at least two specific disciplin . SCI 1200 to satisfy the Sta	de ind nes.	
		Hum	anities and F	ine Arts		
	Select 6	6 hours fro	om at least two	specific disciplines.		
ENGL 236 or ENGL 237 or ENGL 246 or ENGL 247 or ENGL 251 or HIST 140* or HIST 141* or MUS 121 or MUS 126 or THEA 120	British Literature to 1800 or British Literature after 1800 or American Literature I or American Literature II or World Literature to 1620 or US History to 1877* or Intro to Music Listening or Intro to World Music or Intro to Theatre "satisfies the State of Missouri government requirement.	6		ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or MUSIC 1150 or MUSIC 1150 or THEATRE 1150	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Music Understanding and Appreciation or Music Understanding and Appreciation or Theatre for Social Change 'Satisfies the State of Missouri government requirement.	6
			oral and Socia			
HIST 125 or HIST 126* or GEOS 145 or PHIL 121 or PHIL 124 or POLS 124* or PSYC 130 or ECON 231 or ECON 230 or Foreign Language	Western Civ: Ancient World to the Renaissance or World History: Traditional or Western Civ: Scientific Revolution to Modern Age* or World Regional Geography or Intro to Philosophy or Logic and Critical Thinking or American National Government* or Intro to Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language Satisfies the State of Missouri government requirement.	6		specific disciplines. HISTORY 1100 or HISTORY 1200* or HISTORY 2110 or HISTORY 2110 or PHIL 1105 or PHIL 1115 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or Early Western Civilization or Modern Western Civilization* or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government*or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	6
	Hı	umanities	s, Arts, and So Select 3 hour	ocial Sciences s.		
HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3		HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3
	No free electives applied to the degree. Group 2 Major Requirements Group 1 Core Requirements Total H	0 34 34 lours 68			Maximum Free Electives Group 2 Major Requirements Group 1 Core Requirements Total Hours* *S&T advisor permission is required to transfer more than 69 credits toward the S&T Civil Engineering degree.	0 31 27 58

	Computer Eng	gineerir	ng	Grou	o 2 Major R	equirements	
	Johnson County Community College			Semester		Missouri S&T	
COMS 121	Public Speaking		3		SPMS 1185	Principles of Speech	3
CHEM 124, 125	General Chemistry I and Lab		5		CHEM 1310, 1319	Applies to degree as Gen Ed Communication requirement. General Chemistry I and Lab	5
CS 210 or	Discrete Structures I or				OTILIW 1310, 1313	General Orientistry Fand Lab	
CS 211	Discrete Structures II		3		COMP SCI 1200	Discrete Math for Computer Science	3
CS 235 or	Object-Oriented Programming Using C++ or		4		CS 1500	Computational Problem Solving	3
CS 250 ENGR 251 or ENGR 254 or ENGR 284 or CHEM 220 or BIOL 135 or BIOL 205	Basic Data Structures using C++ Statics (3) or Dynamics (3) or Thermodynamics (4) or Organic Chemistry I (4) or Principles of Cell and Molecular Biology (4) or General Genetics (4)		4		CIV ENG 2200 or MECH ENG 2350 or MECH ENG 2519 or CHEM 2210 or BIO SCI 2213 or BIO SCI 2223	Engineering Mechanics-Statics (3) or Engineering Mechanics-Dynamics (2) or Thermodynamics (4) or Organic Chemistry I (3) or Cell Biology (3) or General Genetics (3) Satisfies a required engineering/science elective.	3
MATH 246	Elementary Linear Algebra		3		MATH 3108	Linear Algebra Satisfies a required math elective.	3
	From th 6 hours	ne options listed Humanities and l ehavioral and So ISTORY 1200, 1	Fine A Scial S 300,	ach group be Arts from at le Sciences from 1310, or POL	•	iclude es and iplines.	
				nities and Fi			
ENO. 000	D. "'. I. I."	Select 6 hours	from	n at least two	specific disciplines.	Billian A. J. Ti. B. C. C. Adda	
ENGL 236 or ENGL 237 or ENGL 246 or ENGL 247 or ENGL 251 or HIST 140* or HUS 121 or MUS 121 or MUS 126 or THEA 120	British Literature to 1800 or British Literature after 1800 or American Literature I or American Literature II or World Literature to 1620 or US History to 1877* or Intro to Music Listening or Intro to World Music or Intro to Theatre "Satisfies the State of Missouri government requirement.		6		ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1223 or HISTORY 1300* or HISTORY 1310° or MUSIC 1150 or MUSIC 1150 or THEATRE 1150	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature: 1865 to Present or World Literature: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Music Understanding and Appreciation or Music Understanding and Appreciation or Theatre for Social Change *Satisfies the State of Missouri government requirement.	6
				al and Socia			
HIST 125 or HIST 151 or HIST 126* or GEOS 145 or PHIL 121 or PHIL 124 or POLS 124* or PSYC 130 or ECON 231 or ECON 230 or Foreign Language	Western Civ: Ancient World to the Renaissance of World History: Traditional or Western Civ: Scientific Revolution to Modern A World Regional Geography or Intro to Philosophy or Logic and Critical Thinking or American National Government* or Intro to Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	r ∆ge* or	6		specific disciplines. HISTORY 1100 or HISTORY 1200* or HISTORY 2110 or HISTORY 2110 or PHIL 1105 or PHIL 1115 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or Early Western Civilization or Modern Western Civilization* or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government*or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	6
		Humanit		Arts, and So Select 3 hour	ocial Sciences S.		
ENGL 122 or ENGL 123	Composition II or Technical Writing I		3		ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
Electives	Maximum Free Electives Group 2 Major Requirements Group 1 Core Requirements		3 40 34 74		Electives	Maximum Free Electives Group 2 Major Requirements Group 1 Core Requirements Total Hours* *\$8T advisor permission is required to transfer more than 68 credits toward the S&T Computer Engineering degree.	3 38 27 65

	Electrical Enginee	ring	Grou	o 2 Major Rec	_l uirements	
Jo	hnson County Community College		Semester	r	Missouri S&T	
COMS 121	Public Speaking	3		SPMS 1185	Principles of Speech	3
CHEM 124, 125	General Chemistry I and Lab	5		CHEM 1310, 1319	Applies to degree as Gen Ed Communication requirement. General Chemistry I and Lab	5
CS 235 or	Object-Oriented Programming Using C++ or			,	,	
CS 250	Basic Data Structures using C++	4		CS 1500	Computational Problem Solving	3
ENGR 251 and ENGR 254 BOTH of the courses above or ONE of the courses below. OR ENGR 284 or CHEM 220 or BIOL 135 or BIOL 205	Statics (3) and Dynamics (3) Both courses above combined or any one of the following courses will satisfy a required engineering science elective. OR Thermodynamics (4) or Organic Chemistry I (4) or Principles of Cell and Molecular Biology (4) or General Genetics (4)	4		CIV ENG 2200 and MECH ENG 2350 BOTH of the courses above or ONE of the courses below. OR MECH ENG 2519 or CHEM 2210 or BIO SCI 2213 or BIO SCI 2223	Engineering Mechanics-Statics (3) and Engineering Mechanics-Dynamics (2) Soth ocurses above combined or any one of the following courses satisfies a required engineering science elective. OR Thermodynamics (3) or Organic Chemistry I (3) or Cell Biology (3) or General Genetics (3)	3
MATH 246	Elementary Linear Algebra	3		MATH 3108	Linear Algebra	3
	From the options li 6 hours Humanities a	sted in e and Fine ad Social 00, 1300	each group be Arts from at le Sciences from 1310, or POI	•	le nd es.	
	0.1.101		nities and F	ine Arts o specific disciplines.		
ENGL 236 or ENGL 237 or ENGL 246 or ENGL 247 or ENGL 251 or HIST 140* or HIST 141* or MUS 121 or MUS 126 or THEA 120	British Literature to 1800 or British Literature after 1800 or American Literature I or American Literature II or World Literature to 1620 or US History to 1877* or US History since 1877* or Intro to Music Listening or Intro to World Music or Intro to Theatre *Satisfies the State of Missouri government requirement.	6		ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300° or HISTORY 1310° or MUSIC 1150 or MUSIC 1150 or THEATRE 1150	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Music Understanding and Appreciation or Music Understanding and Appreciation or Theatre for Social Change *Satisfies the State of Missouri government requirement.	6
			ral and Socia	al Sciences o specific disciplines.		
HIST 125 or HIST 151 or HIST 126° or GEOS 145 or PHIL 121 or PHIL 124 or POLS 124° or PSYC 130 or ECON 231 or ECON 230 or Foreign Language	Western Civ: Ancient World to the Renaissance or World History: Traditional or Western Civ: Scientific Revolution to Modern Age* or World Regional Geography or Intro to Philosophy or Logic and Critical Thinking or American National Government* or Intro to Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	6	at reast two	HISTORY 1100 or HISTORY 1100 or HISTORY 1200* or HISTORY 2110 or PHIL 1105 or PHIL 1115 or POL SCI 1200* or PSVCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or Early Western Civilization or Modern Western Civilization* or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government*or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	6
		anities	•	ocial Sciences		
ENGL 122 or ENGL 123	Composition II or Technical Writing I	3	Select 3 hou	rs. ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
Electives	Maximum Free Electives Group 2 Major Requirements Group 1 Core Requirements Total Hour	6 40 34 rs 74		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.	6 38 27 65

	Linginieering Marie	ayenne		Jup z major	Requirements	
	Johnson County Community College		Semeste	er	Missouri S&T	
COMS 121	Public Speaking	3	_	SPMS 1185	Principles of Speech	3
CHEM 124, 125	General Chemistry I and Lab	5		CHEM 1310, 1319	Applies to degree as Gen Ed Communication requirement. General Chemistry I and Lab	5
CS 200 or	Concepts of Programming Algorithms Using C++ or	4		CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
CS 250	Basic Data Structures using C++				. , ,	
ENGR 251 ENGR 254	Statics Dynamics	3		CIV ENG 2200 MECH ENG 2350	Engineering Mechanics-Statics Engineering Mechanics-Dynamics	3
ENGR 284	•	4		MECH ENG 2519*	Thermodynamics*	
ENGR 204	Thermodynamics				*Will be substituted for MECH ENG 2527.	2
	From the opt 6 hours Huma 6 hours Behavi	ions listed in Inities and Fir Ioral and Soci	n each group l ne Arts from at al Sciences fro	General Education Requipelow, select 15 hours to in least two specific discipline on at least two specific discipline and the second selection of the second selection of the second selection selec	nclude es and ciplines.	
	*At least one course must be selected from HISTOI			•	State of Missouri government requirement.	
	Sole		nanities and	Fine Arts wo specific disciplines.		
ENGL 236 or ENGL 237 or ENGL 246 or ENGL 247 or ENGL 251 or HIST 140° or HIST 141° or MUS 126 or THEA 120	British Literature to 1800 or British Literature after 1800 or American Literature I or American Literature II or World Literature to 1620 or US History to 1877* or Intro to Music Listening or Intro to World Music or Intro to Theatre	6	om at least w	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300° or HISTORY 1310° or MUSIC 1150 or MUSIC 1150 or THEATRE 1150	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1800 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Music Understanding and Appreciation or Music Understanding and Appreciation or Theatre for Social Change	6
	*Satisfies the State of Missouri government requirement.				*Satisfies the State of Missouri government requirement.	
	Select 6 hours fr			cial Sciences lisciplines to include PSYO	CH 1101	
PSYC 130	Intro to Psychology	3	two specific d	PSYCH 1101	General Psychology Required	3
	• •	3				3
HIST 125 or HIST 126* or GEOS 145 or PHIL 121 or PHIL 124 or POLS 124* or ECON 231 or ECON 230 or Foreign Language	Western Civ: Ancient World to the Renaissance or World History: Traditional or Western Civ: Scientific Revolution to Modern Age* of World Regional Geography or Intro to Philosophy or Logic and Critical Thinking or American National Government* or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	3		HISTORY 1100 or HISTORY 1100 or HISTORY 1200* or HISTORY 2110 or PHIL 1105 or POL SCI 1200* or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or Early Western Civilization or Modern Western Civilization* or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government*or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	3
		Humanitie	s, Arts, and Select 3 ho	Social Sciences		
ENGL 122 or ENGL 123	Composition II or Technical Writing I	3		ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
	No free electives applied to the degree.	0		Electives	Maximum Free Electives	0
	Group 2 Major Requirements Group 1 Core Requirements	37 34 al Hours 71			Group 2 Major Requirements Group 1 Core Requirements Total Hours* *S&T advisor permission is required to transfer more than 61 credits toward the \$&T	33 27

	Environmental Eng	ineeri	ing Gr	oup 2 Major	Requirements	
	Johnson County Community College		Semeste	<u>r</u>	Missouri S&T	
ENGL 122 or ENGL 123 or COMS 121	Composition II or Technical Writing I or Public Speaking	3		ENGLISH 1160 or ENGLISH 3560 or SPMS 1185	Writing and Research or Technical Writing or Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
GEOS 130	General Geology	5		GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
CHEM 124, 125	General Chemistry I and Lab	5		CHEM 1310, 1319	General Chemistry I and Lab	5
CHEM 131	General Chemistry II	4		CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) *CHEM 1510 is not a degree requirement, transfers as general elective credit.	3
BIOL 121	Introductory Biology for Non-Majors	4		BIO SCI 1113, 1219*	General Biology (3) and Lab* (1) *The lab is not a degree requirement, transfers as general elective credit.	3
ENGR 251	Statics	3		CIV ENG 2200	Engineering Mechanics-Statics	3
ENGR 254	Dynamics	3		MECH ENG 2350	Engineering Mechanics-Dynamics	2
ENGL 236 or ENGL 237 or ENGL 246 or ENGL 247 or ENGL 251 or HIST 140* or HIST 141* or MUS 121 or MUS 126 or	*At least one course must be selected from HISTOR\	<mark>/ 1200, 1300</mark> Huma	<mark>, 1310, or PO</mark> anities and F	•		6
THEA 120	Intro to Theatre *Satisfies the State of Missouri government requirement.		ral and Soci	THEATRE 1150 al Sciences	Theatre for Social Change *Satisfies the State of Missouri government requirement.	
	Select 6 hours from	n at least tw	o specific dis	ciplines to include HISTOF	RY 1200	
HIST 126*	Western Civ: Scientific Revolution to Modern Age* *Satisfies the State of Missouri government requirement.	3		HISTORY 1200*	Modern Western Civilization* *Satisfies the State of Missouri Government requirement.	3
PHIL 121 or PHIL 124 or POLS 124* or PSYC 130 or ECON 231 or ECON 230 or Foreign Language	Intro to Philosophy or Logic and Critical Thinking or American National Government* or Intro to Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	3		PHIL 1105 or PHIL 1115 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	3
	No free electives applied to the degree.	0			Maximum Free Electives	0
	Group 2 Major Requirements Group 1 Core Requirements Total	39 34 Hours 73			Group 2 Major Requirements Group 1 Core Requirements Total Hours* *S&T advisor permission is required to transfer more than 69 credits toward the S&T Environmental Engineering degree.	34 27 61

	Geological Engine	ering	g Grou	p 2 Major R	Requirements	
	Johnson County Community College	· ·	Semester		Missouri S&T	
ENGL 123	Technical Writing I	3	Semester	ENGLISH 3560	Technical Writing	3
CHEM 124, 125	-	5		CHEM 1310, 1319	Applies to degree as Gen Ed Communication requirement. General Chemistry I and Lab	5
CS 235 or	General Chemistry I and Lab Object-Oriented Programming Using C++ or	5			,	Э
CS 250 or CS 200*	Basic Data Structures using C++ or Concepts of Programming Algorithms Using C++*	4		CS 1500 or CS 1971,1981	Computational Problem Solving or Intro to Programming Methodology and Lab C++)	3
GEOS 130	General Geology	5		GEO ENG 1150 (GEOLOGY 1110)	Physical and Environmental Geology	3
ENGR 251	Statics	3		CIV ENG 2200	Engineering Mechanics-Statics	3
ENGR 254	Dynamics	3		MECH ENG 2350 eneral Education Requi	Engineering Mechanics-Dynamics	2
ENGL 236 or ENGL 237 or ENGL 246 or	6 hours Humanitie 6 hours Behavioral *At least one course must be selected from HISTORY 1 Select 6 British Literature to 1800 or British Literature after 1800 or American Literature I or	s and Fine and Socia 200, 1300 Huma	e Arts from at le I Sciences from I, 1310, or POL anities and F	ine Arts o specific disciplines. ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or	s and plines. State of Missouri government requirement. British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or	
ENGL 247 or ENGL 251 or HIST 140* or HIST 141* or MUS 121 or MUS 126 or THEA 120	American Literature II or World Literature to 1620 or US History to 1877* or US History since 1877* or Intro to Music Listening or Intro to World Music or Intro to Theatre "Satisfies the State of Missouri government requirement.	6		ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or MUSIC 1150 or MUSIC 1150 or THEATRE 1150	American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Music Understanding and Appreciation or Music Understanding and Appreciation or Theatre for Social Change *Satisfies the State of Missouri government requirement.	6
	Soloot 6		ral and Socia			
HIST 125 or HIST 126* or GEOS 145 or PHIL 121 or PHIL 124 or POLS 124* or PSYC 130 or ECON 231 or ECON 230 or Foreign Language	Western Civ: Ancient World to the Renaissance or World History: Traditional or Western Civ: Scientific Revolution to Modern Age* or World Regional Geography or Intro to Philosophy or Logic and Critical Thinking or American National Government* or Intro to Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	6		o specific disciplines. HISTORY 1100 or HISTORY 1100 or HISTORY 1200° or HISTORY 2110 or PHIL 1105 or PHIL 1115 or POL SCI 1200° or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or Early Western Civilization or Modern Western Civilization* or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government*	6
	Hu	manities	, Arts, and S Select 3 hou	ocial Sciences rs.		
HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3		HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3
	No free electives applied to the degree.	0			Maximum Free Electives	0
	Group 2 Major Requirements Group 1 Core Requirements Total Ho	38 34 ours 72			Group 2 Major Requirements Group 1 Core Requirements Total Hours* *S&T advisor permission is required to transfer more than 65 credits toward the S&T Geological Engineering degree.	34 27 61

	Mechanical Engine	ering	g Gro	ıp 2 Major F	Requirements	
	Johnson County Community College		Semeste	r	Missouri S&T	
ENGL 122 or ENGL 123 or COMS 121	Composition II or Technical Writing I or Public Speaking	3		ENGLISH 1160 or ENGLISH 3560 or SPMS 1185	Writing and Research or Technical Writing or Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHEM 124, 125	General Chemistry I and Lab	5		CHEM 1310*, 1319	General Chemistry I and Lab *CHEM 1310 will be substituted for CHEM 1305.	5
CS 200 or CS 250	Concepts of Programming Algorithms Using C++ or Basic Data Structures using C++	4		CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
ENGR 251 ENGR 284	Statics Thermodynamics	3 4		CIV ENG 2200 MECH ENG 2519	Engineering Mechanics-Statics Thermodynamics	3
MATH 246	Elementary Linear Algebra	3		MATH 3108	Linear Algebra I Satisfies the Advanced Math/Statistics elective requirement.	3
	6 hours Humanitie	es and Fine and Social 1200, 1300,	Arts from at Sciences from 1310, or PO	•	s and iplines.	
	Select 6		nities and I	o specific disciplines.		
ENGL 236 or ENGL 237 or ENGL 246 or ENGL 247 or ENGL 251 or HIST 140* or HIST 141* or MUS 121 or MUS 126 or THEA 120	British Literature to 1800 or British Literature after 1800 or American Literature I or American Literature II or World Literature to 1620 or US History to 1877* or US History since 1877* or Intro to Music Listening or Intro to World Music or Intro to Theatre "satisfies the State of Missouri government requirement.	6		ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or MUSIC 1150 or MUSIC 1150 or THEATRE 1150	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Music Understanding and Appreciation or Music Understanding and Appreciation or Theatre for Social Change *Satisfes the State of Missouri government requirement.	6
	Cationes the State of Missouri government requirement.	Behavior	al and Soci	al Sciences	Cationes the Clate of Missouri government requirement.	
		hours from	m at least tw	o specific disciplines.		
HIST 125 or HIST 126* or GEOS 145 or PHIL 121 or PHIL 124 or POLS 124* or PSYC 130 or ECON 231 or ECON 230 or Foreign Language	Western Civ: Ancient World to the Renaissance or World History: Traditional or Western Civ: Scientific Revolution to Modern Age* or World Regional Geography or Intro to Philosophy or Logic and Critical Thinking or American National Government* or Intro to Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	6		HISTORY 1100 or HISTORY 1100 or HISTORY 1200* or HISTORY 2110 or PHIL 1105 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or Early Western Civilization or Modern Western Civilization* or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government*or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	6
	Hu		Arts, and S Select 3 hou	Social Sciences Irs.		
HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3		HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3
	No free electives applied to the degree. Group 2 Major Requirements Group 1 Core Requirements Total H	0 37 34 ours 71			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 Mechanical Engineering degree.	0 35 27 62

	Metallurgical En	gineeri	ng Gro	oup 2 Major	Requirements	
	Johnson County Community College		Semeste	r	Missouri S&T	
ENGL 122 or ENGL 123 or COMS 121	Composition II or Technical Writing I or Public Speaking	3		ENGLISH 1160 or ENGLISH 3560 or SPMS 1185	Writing and Research or Technical Writing or Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
ENGR 251 CHEM 124, 125	Statics General Chemistry I and Lab	3		CIV ENG 2200 CHEM 1310, 1319	Engineering Mechanics-Statics General Chemistry I and Lab	3 5
CHEM 131	General Chemistry II	4		CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) *CHEM 1510 is not a degree requirement, transfers as general elective credit.	3
CHEM 220	Organic Chemistry I	5	i	CHEM 2210, 2219*	Organic Chemistry I (4) and Lab* (1) CHEM 2210 is not specifically required for the degree but will satisfy Out-of-Department Technical Elective Requirement. *CHEM 2219 is not an S&T requirement; will transfer as elective credit.	3
	From the 6 6 hours Hu 6 hours Beh	options listed i manities and Fi avioral and Soc	n each group b ne Arts from at ial Sciences fro	seneral Education Requivelow, select 15 hours to in least two specific discipline m at least two specific disc	iclude es and iplines.	
	*At least one course must be selected from HIST			•	State of Missouri government requirement.	
	S		manities and I	rine Arts o specific disciplines.		
ENGL 236 or ENGL 237 or ENGL 246 or ENGL 247 or ENGL 251 or HIST 140° or HIST 141° or MUS 121 or MUS 126 or THEA 120	British Literature to 1800 or British Literature after 1800 or American Literature I or American Literature II or World Literature to 1620 or US History to 1877* or Intro to Music Listening or Intro to World Music or Intro to Theatre *Satisfies the State of Missouri government requirement.	ε		ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1310° or MUSIC 1150 or MUSIC 1150 or THEATRE 1150	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Music Understanding and Appreciation or Music Understanding and Appreciation or Theatre for Social Change *Satisfes the State of Missouri government requirement.	6
		Behav	ioral and Soc	ial Sciences		
		elect 6 hours f	rom at least tw	o specific disciplines.		
HIST 125 or HIST 151 or HIST 126* or GEOS 145 or PHIL 121 or PHIL 124 or POLS 124* or PSYC 130 or ECON 231 or ECON 230 or Foreign Language	Western Civ: Ancient World to the Renaissance or World History: Traditional or Western Civ: Scientific Revolution to Modern Agr World Regional Geography or Intro to Philosophy or Logic and Critical Thinking or American National Government* or Intro to Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	ε		HISTORY 1100 or HISTORY 1100 or HISTORY 1200° or HISTORY 2110 or PHIL 1105 or PHIL 1115 or POL SCI 1200° or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or Early Western Civilization or Modern Western Civilization* or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government*or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	6
			es, Arts, and S Select 3 hou	Social Sciences urs.		
HASS Elective	Humanities, Arts, Social Sciences Elective: Any hist music, theater, English and technical communication philosophy, political science, psychology, economics, etymology, or foreign language.	,		HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3
	Maximum Free Electives Group 2 Major Requirements Group 1 Core Requirements	3 3 3 Total Hours 7	8 4		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 Metallurgical Engineering degree.	3 35 27 62

	Mining Engine	ering C	Group 2	2 Major Re	quirements	
	Johnson County Community College		Semester		Missouri S&T	
ENGL 122 or ENGL 123 or COMS 121	Composition II or Technical Writing I or Public Speaking	3		ENGLISH 1160 or ENGLISH 3560 or SPMS 1185	Writing and Research or Technical Writing or Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHEM 124, 125	General Chemistry I and Lab	5		CHEM 1310, 1319	General Chemistry I and Lab	5
ENGR 251	Statics	3		CIV ENG 2200	Engineering Mechanics-Statics	3
ENGR 254	Dynamics	3		MECH ENG 2350	Engineering Mechanics-Dynamics	2
ENGR 284	Thermodynamics	4		MECH ENG 2519*	Thermodynamics* *Will be substituted for MECH ENG 2527.	3
GEOS 130	General Geology	5		GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
	From the opti 6 hours Human	ons listed in entities and Fine oral and Social	each group bel Arts from at lea Sciences from	neral Education Requipment Select 12 hours to in ast two specific discipline at least two specific discount SCI 1200 to satisfy the	clude s and iplines.	
	Sele		nities and Firm at least two	ne Arts specific disciplines.		
ENGL 236 or ENGL 237 or ENGL 246 or ENGL 247 or ENGL 251 or HIST 140* or HUS 121 or MUS 121 or MUS 126 or THEA 120	British Literature to 1800 or British Literature after 1800 or American Literature I or American Literature II or World Literature to 1620 or US History to 1877* or Intro to Music Listening or Intro to World Music or Intro to Theatre "Satisfies the State of Missouri government requirement.	6		ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or MUSIC 1150 or MUSIC 1150 or THEATRE 1150	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1806 to 1865 or American Literature: 1865 to Present or World Literature: 18eginnings to the Renaissance or American History to 1877* or American History Since 1877* or Music Understanding and Appreciation or Music Understanding and Appreciation or Theatre for Social Change *Satisfies the State of Missouri government requirement.	6
	Sala		ral and Social	Sciences specific disciplines.		
HIST 125 or HIST 151 or HIST 126* or GEOS 145 or PHIL 121 or PHIL 124 or POLS 124* or PSYC 130 or ECON 231 or ECON 230 or Foreign Language	Western Civ: Ancient World to the Renaissance or World History: Traditional or Western Civ: Scientific Revolution to Modern Age* o World Regional Geography or Intro to Philosophy or Logic and Critical Thinking or American National Government* or Intro to Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language Satisfies the State of Missouri government requirement.			HISTORY 1100 or HISTORY 1100 or HISTORY 1200* or HISTORY 2110 or PHIL 1105 or PHIL 1115 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or Early Western Civilization or Modern Western Civilization* or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government*or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	6
	No free electives applied to the degree.	0			Maximum Free Electives	0
	Group 2 Major Requirements Group 1 Core Requirements	35 34 Il Hours 69			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 Mining Engineering degree.	31 27

	Nuclear Engine	ering (Group 2 N	Major Requ	uirements	
	Johnson County Community College		Semester		Missouri S&T	
ENGL 122 or ENGL 123 or COMS 121	Composition II or Technical Writing I or Public Speaking	3	ENGL ENGL	ISH 1160 or ISH 3560 or 3 1185	Writing and Research or Technical Writing or Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHEM 124, 125	General Chemistry I and Lab	5	CHEN	1 1310, 1319	General Chemistry I and Lab	5
CS 200 or CS 250	Concepts of Programming Algorithms Using C++ or Basic Data Structures using C++	4	CS 19	971, 1981	Intro to Programming Method and Lab (C++)	3
MATH 246	Elementary Linear Algebra	3		1 3108	Linear Algebra	3
ENGR 251 MATH 285	Statics Statistics for Business	3 4	CIV E STAT	NG 2200 3111	Engineering Mechanics-Statics Statistical Tools for Decision Making	3
ENGR 284	Thermodynamics	4		HENG 2519	Thermodynamics	3
	From the optio 6 hours Humani 6 hours Behavior	ns listed in e ties and Fine al and Social	ach group below, se Arts from at least two Sciences from at leas	Education Requirent elect 15 hours to include a specific disciplines and at two specific disciplines.	de nd es.	
	*At least one course must be selected from HISTORY			•	te of Missouri government requirement.	
	Select		nities and Fine Art n at least two speci			
ENGL 236 or ENGL 237 or ENGL 246 or ENGL 247 or ENGL 251 or HIST 140* or HUS 121 or MUS 121 or MUS 126 or THEA 120	British Literature to 1800 or British Literature after 1800 or American Literature I or American Literature II or World Literature to 1620 or US History to 1877* or Intro to Music Listening or Intro to World Music or Intro to Theatre "Satisfies the State of Missouri government requirement.	6	ENGL ENGL ENGL HISTO HISTO MUSI MUSI THEA	ISH 1211 or ISH 1212 or ISH 1212 or ISH 1221 or ISH 1222 or ISH 1231 or DRY 1300* or DRY 1310* or C 1150 or C 1150 or TRE 1150	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Music Understanding and Appreciation or Music Understanding and Appreciation or Theatre for Social Change "Satisfies the State of Missouri government requirement.	6
	Select		ral and Social Scie m at least two speci			
ECON 231 or ECON 230	Principles of Microeconomics or Principles of Macroeconomics	3		N 1100 or N 1200	Principles of Microeconomics or Principles of Macroeconomics	3
HIST 125 or HIST 151 or HIST 126° or GEOS 145 or PHIL 121 or PHIL 124 or POLS 124° or PSYC 130 or Foreign Language	Western Civ: Ancient World to the Renaissance or World History: Traditional or Western Civ: Scientific Revolution to Modern Age* or World Regional Geography or Intro to Philosophy or Logic and Critical Thinking or American National Government* or Intro to Psychology or Elementary or Intermediate Foreign Language "Satisfies the State of Missouri government requirement.	3	HISTO HISTO HISTO PHIL POL: PSYCO	DRY 1100 or DRY 1100 or DRY 1200* or DRY 2110 or 1105 or 1115 or GCI 1200* or HI 1101 or In Language	Early Western Civilization or Early Western Civilization or Modern Western Civilization* or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government*or General Psychology or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	3
	ŀ		Arts, and Social S Select 3 hours.	ciences		
HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, a music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	ırt, 3	HASS	Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3
	Maximum Free Electives Group 2 Major Requirements Group 1 Core Requirements Total	0 41 34 Hours 75			Maximum Free Electives Group 2 Major Requirements Group 1 Core Requirements Total Hours* *S&T advisor permission is required to transfer more than 69 credits toward the S&T Nuclear Engineering degree.	0 38 27 65

	Petroleum Eng	jineeri	ng	Group 2 Major Re	equirements	
	Johnson County Community College			Semester	Missouri S&T	
ENGL 122 or ENGL 123 or COMS 121	Composition II or Technical Writing I or Public Speaking		3	ENGLISH 1160 or ENGLISH 3560 or SPMS 1185	Writing and Research or Technical Writing or Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHEM 124, 125	General Chemistry I and Lab		5	CHEM 1310, 1319	General Chemistry I and Lab	5
CS 235 or CS 250	Object-Oriented Programming Using C++ or Basic Data Structures using C++		4	COMP SCI 1500	Computational Problem Solving	3
GEOS 130	General Geology		5	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
ENGR 251	Statics		3	CIV ENG 2200	Engineering Mechanics-Statics	3
ENGR 254	Dynamics		3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
ENGR 284	Thermodynamics		4	MECH ENG 2519*	Thermodynamics* *Will be substituted for MECH ENG 2527.	3
	6 hours H	umanities and havioral and S TORY 1200, 1	Fine locial 1300,		and ines.	
				nities and Fine Arts n at least two specific disciplines.		
ENGL 236 or ENGL 237 or ENGL 246 or ENGL 247 or ENGL 251 or HIST 140* or HUST 121 or MUS 121 or MUS 126 or THEA 120	British Literature to 1800 or British Literature after 1800 or American Literature I or American Literature II or World Literature to 1620 or US History to 1877* or US History since 1877* or Intro to Music Listening or Intro to World Music or Intro to Theatre *Satisfies the State of Missouri government requirement.		6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or MUSIC 1150 or MUSIC 1150 or THEATRE 1150	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Music Understanding and Appreciation or Music Understanding and Appreciation or Theatre for Social Change	6
		Beha	avior	al and Social Sciences		
	\$	Select 6 hour	s fror	m at least two specific disciplines.		
HIST 125 or HIST 151 or HIST 126* or GEOS 145 or PHIL 121 or PHIL 124 or POLS 124* or PSYC 130 or ECON 231 or ECON 230 or Foreign Language	Western Civ: Ancient World to the Renaissance or World History: Traditional or Western Civ: Scientific Revolution to Modern Ag World Regional Geography or Intro to Philosophy or Logic and Critical Thinking or American National Government* or Intro to Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language "Satisfies the State of Missouri government requirement.	ge* or	6	HISTORY 1100 or HISTORY 1100 or HISTORY 1200* or HISTORY 2110 or PHIL 1105 or PHIL 1115 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or Early Western Civilization or Modern Western Civilization* or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government*or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	6
		Humani		Arts, and Social Sciences Select 3 hours.		
HASS Elective	Humanities, Arts, Social Sciences Elective: Any his music, theater, English and technical communication philosophy, political science, psychology, economics etymology, or foreign language.	n,	3	HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3
	No free electives applied to the degree.		0		Maximum Free Electives	0
	Group 2 Major Requirements Group 1 Core Requirements	Total Hours	42 34 76		Group 2 Major Requirements Group 1 Core Requirements Total Hours* *S&T advisor permission is required to transfer more than 69 credits toward the S&T Petroleum Engineering degree.	37 27 64