Joliet Junior College — Missouri S&T

General Engineering

Transfer Guide Effective as of Fall 2026

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.

Joliet Junior College		Semester	Missouri S&T		
MATH 170	Calculus with Analytic Geometry I	5	MATH 1214	Calculus I Grade of C or better is required.	4
MATH 171	Calculus with Analytic Geometry II	4	MATH 1215	Calculus II Grade of C or better is required.	4
MATH 172	Calculus with Analytic Geometry III	4	MATH 2222	Calculus III Grade of C or better is required.	4
MATH 220	Differential Equations and Orthogonal Functions	3	MATH 3304	Elementary Differential Equations	3
PHYS 201	Engineering Physics I	5	PHYSICS 1135	Engineering Physics I Grade of C or better is required.	4
PHYS 202	Engineering Physics II	5	PHYSICS 2135	Engineering Physics II Grade of C or better is required.	4
EGR 105	Intro to Engineering	2	FR ENG 1100	Study and Careers in Engineering and Computing	1
ENG 101	Rhetoric	3	ENGLISH 1120	Exposition and Argumentation	3
	Total Hours	31		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
Biomedical Engineering - 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
Semiconductor 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 2026.
Further information or updates are available from Missouri S&T Transfer Admissions at transfer.mst.edu, transfer@mst.edu, or 800-522-0938.

Aerospace Engineering Group 2 Major Requirements

Joliet Junior College		Semester	Missouri S&T		
EGR 101	Engineering Graphical Communications	4	MECH ENG 1720	Intro to Engineering Design	3
ENG 102 or ENG 130 or COMM 101	Rhetoric or Technical Writing and Communication or Principles of Communication	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 101	General Chemistry I	5	CHEM 1310*, 1319	General Chemistry I and Lab *CHEM 1310 will be substituted for CHEM 1305.	5
EGR 201	Analytical Mechanics - Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
MATH 210	Linear Algebra	3	MATH 3108	Linear Algebra I Satisfies the Advanced Math/Comp Sci elective requirement.	3
PHIL 103	Intro to Ethics or other engineering, business, bio, social or other ethics approved by advisor.	3	PHILOS 1130	How should I Live? An Introduction to Ethics or other engineering, business, bio, social or other ethics approved by advisor.	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. ***At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.**					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
ENG 105 or ENG 106 or ENG 103 or ENG 104 or **HIST 103*** or **HIST 104*** or Literature	Survey of English Literature or Survey of English Literature or American Literature or American Literature or **History of the US to 1865*** or **History of the US, 1865 to Present*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or American Literature: 1600 to 1865 or American Literature: 1865 to Present or **American History to 1877*** or **American History Since 1877*** or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
HIST 105 or **HIST 106*** or GEOG 102 or PHIL 101 or PHIL 104 or **PSCI 101*** or PSYC 101 or ECON 104 or ECON 103 or Foreign Language	History of Civilization I or **History of Civilization II*** or World Regional Geography or Intro to Philosophy or Intro to Logic or **American National Government*** or General Psychology or Principles of Economics II (Microeconomics) or Principles of Economics I (Macroeconomics) or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6	HISTORY 1100 or **HISTORY 1200*** or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or **POL SCI 1200*** or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	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
Humanities, Arts, and Social Sciences Select 3 hours.					
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	36		Group 2 Major Requirements	35
	Group 1 Core Requirements	31		Group 1 Core Requirements	27
	Total Hours	67		Total Hours*	62
				*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

Joliet Junior College		Semester	Missouri S&T		
EGR 101	Engineering Graphical Communications	4	MECH ENG 1720	Intro to Engineering Design	3
ENG 102 or ENG 130 or COMM 101	Rhetoric or Technical Writing and Communication or Principles of Communication	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 101	General Chemistry I	5	CHEM 1310*, 1319	General Chemistry I and Lab *CHEM 1310 will be substituted for CHEM 1305.	5
EGR 201	Analytical Mechanics - Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 202	Analytical Mechanics - Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
GEOL 101	Principles of Physical Geology	4	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 12 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. ***At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.**					
Humanities and Fine Arts Select 3 hours.					
ENG 105 or ENG 106 or ENG 103 or ENG 104 or **HIST 103*** or **HIST 104*** or Literature	Survey of English Literature or Survey of English Literature or American Literature or American Literature or **History of the US to 1865*** or **History of the US, 1865 to Present*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	3	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or American Literature: 1600 to 1865 or American Literature: 1865 to Present or **American History to 1877*** or **American History Since 1877*** or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	3
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines, to include HISTORY 1200.					
HIST 106*	**History of Civilization II*** ***Satisfies the State of Missouri Government requirement.**	3	**HISTORY 1200***	**Modern Western Civilization*** ***Satisfies the State of Missouri Government requirement.**	3
PHIL 101 or PHIL 104 or **PSCI 101*** or PSYC 101 or ECON 104 or ECON 103 or Foreign Language	Intro to Philosophy or Intro to Logic or **American National Government*** or General Psychology or Principles of Economics II (Microeconomics) or Principles of Economics I (Macroeconomics) or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	3	PHILOS 1105 or PHILOS 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
Humanities, Arts, and Social Sciences Select 3 hours.					
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	30		Group 2 Major Requirements	28
	Group 1 Core Requirements	31		Group 1 Core Requirements	27
	Total Hours	61		Total Hours*	55
				*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

Joliet Junior College		Semester	Missouri S&T		
COMM 101	Principles of Communication	3	SP&MS 1185	Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHEM 101	General Chemistry I	5	CHEM 1310, 1319	General Chemistry I and Lab	5
CHEM 102	General Chemistry II	5	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 209	Organic Chemistry I	5	CHEM 2210, 2219	Organic Chemistry I and Lab	4
CHEM 210 or BIO 151	Organic Chemistry II or General Biology I	5	CHEM 2220, 2229 or BIO SCI 1113, 1219	Organic Chemistry II and Lab or General Biology and Lab Applies to degree as Track Elective.	4
CIS 246	Advanced C Using C++	4	COMP SCI 1500	Computational Problem Solving	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 12 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 3 hours Behavioral and Social Sciences. ***At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.**					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
ENG 105 or ENG 106 or ENG 103 or ENG 104 or **HIST 103*** or **HIST 104*** or Literature	Survey of English Literature or Survey of English Literature or American Literature or American Literature or **History of the US to 1865*** or **History of the US, 1865 to Present*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or American Literature: 1600 to 1865 or American Literature: 1865 to Present or **American History to 1877*** or **American History Since 1877*** or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 3 hours.					
HIST 105 or **HIST 106*** or GEOG 102 or **PSCI 101*** or PSYC 101 or ECON 104 or ECON 103 or Foreign Language	History of Civilization I or **History of Civilization II*** or World Regional Geography or **American National Government*** or General Psychology or Principles of Economics II (Microeconomics) or Principles of Economics I (Macroeconomics) or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	3	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 **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
Humanities, Arts, and Social Sciences ENGLISH 3560 required.					
ENG 130	Technical Writing and Communication	3	ENGLISH 3560	Technical Writing	3
	No free electives applied to the degree.	0		Maximum Free Electives	0
	Group 2 Major Requirements	39		Group 2 Major Requirements	34
	Group 1 Core Requirements	31		Group 1 Core Requirements	27
	Total Hours	70		Total Hours*	61
				*S&T advisor permission is required to transfer more than 69 credit hours toward the degree.	

Biomedical Engineering-Biomaterials
Group 2 Major Requirements

Joliet Junior College			Semester	Missouri S&T		
COMM 101	Principles of Communication	3		SP&MS 1185	Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHEM 101	General Chemistry I	5		CHEM 1310, 1319	General Chemistry I and Lab	5
CHEM 102	General Chemistry II	5		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 209	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 210	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
BIO 151	General Biology I	5		BIO SCI 1113*, 1219*	General Biology* and Lab* *Applies to degree as Track Elective (Non-engineering).	4
CIS 246	Advanced C Using C++	4		COMP SCI 1500	Computational Problem Solving	3
EGR 201	Analytical Mechanics - Statics	3		CIV ENG 2200	Engineering Mechanics-Statics	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 12 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 3 hours Behavioral and Social Sciences. ***At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.**						
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.						
ENG 105 or ENG 106 or ENG 103 or ENG 104 or **HIST 103*** or **HIST 104*** or Literature	Survey of English Literature or Survey of English Literature or American Literature or American Literature or **History of the US to 1865*** or **History of the US, 1865 to Present*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6		ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or American Literature: 1600 to 1865 or American Literature: 1865 to Present or **American History to 1877*** or **American History Since 1877*** or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 3 hours.						
HIST 105 or **HIST 106*** or GEOG 102 or **PSCI 101*** or PSYC 101 or ECON 104 or ECON 103 or Foreign Language	History of Civilization I or **History of Civilization II*** or World Regional Geography or **American National Government*** or General Psychology or Principles of Economics II (Microeconomics) or Principles of Economics I (Macroeconomics) or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	3		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 **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
Humanities, Arts, and Social Sciences ENGLISH 3560 required.						
ENG 130	Technical Writing and Communication	3		ENGLISH 3560	Technical Writing	3
	No free electives applied to the degree.	0			Maximum Free Electives	0
	Group 2 Major Requirements	47			Group 2 Major Requirements	41
	Group 1 Core Requirements	31			Group 1 Core Requirements	27
	Total Hours	78			Total Hours*	68

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

Ceramic Engineering Group 2 Major Requirements

Joliet Junior College		Semester	Missouri S&T		
EGR 101	Engineering Graphical Communications	4	MECH ENG 1720	Intro to Engineering Design	3
ENG 102 or ENG 130 or COMM 101	Rhetoric or Technical Writing and Communication or Principles of Communication	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
EGR 201	Analytical Mechanics - Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
CHEM 101	General Chemistry I	5	CHEM 1310, 1319	General Chemistry I and Lab	5
CHEM 102	General Chemistry II	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) *CHEM 1510 is not a degree requirement, transfers as general elective credit.	3
CIS 246	Advanced C Using C++	4	COMP SCI 1500	Computational Problem Solving	3
PHYS 203	Engineering Physics III	3	PHYS 2305	Intro to Modern Physics	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. ***At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.**					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
ENG 105 or ENG 106 or ENG 103 or ENG 104 or **HIST 103*** or **HIST 104*** or Literature	Survey of English Literature or Survey of English Literature or American Literature or American Literature or **History of the US to 1865*** or **History of the US, 1865 to Present*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or American Literature: 1600 to 1865 or American Literature: 1865 to Present or **American History to 1877*** or **American History Since 1877*** or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
HIST 105 or **HIST 106*** or GEOG 102 or PHIL 101 or PHIL 104 or **PSCI 101*** or PSYC 101 or ECON 104 or ECON 103 or Foreign Language	History of Civilization I or **History of Civilization II*** or World Regional Geography or Intro to Philosophy or Intro to Logic or **American National Government*** or General Psychology or Principles of Economics II (Microeconomics) or Principles of Economics I (Macroeconomics) or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6	HISTORY 1100 or **HISTORY 1200*** or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or **POL SCI 1200*** or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	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
Humanities, Arts, and Social Sciences Select 3 hours.					
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	42		Group 2 Major Requirements	38
	Group 1 Core Requirements	31		Group 1 Core Requirements	27
	Total Hours	73		Total Hours*	65
				*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

Joliet Junior College		Semester	Missouri S&T		
EGR 101	Engineering Graphical Communications	4	MECH ENG 1720	Intro to Engineering Design	3
COMM 101	Principles of Communication	3	SP&MS 1185	Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHEM 101	General Chemistry I	5	CHEM 1310, 1319	General Chemistry I and Lab	5
CHEM 102	General Chemistry II	5	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 209	Organic Chemistry I	5	CHEM 2210, 2219*	Organic Chemistry I and Lab* *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 210	Organic Chemistry II or	5	CHEM 2220, 2229*	Organic Chemistry II (3) and Lab* (1) CHEM 2220 applies to the degree as 3 of 9 required science elective credits. *CHEM 2229 is not a degree requirement; transfers as general elective credit.	8
CIS 246	Advanced C Using C++	4	COMP SCI 1500	Computational Problem Solving	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. ***At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.**					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
ENG 105 or ENG 106 or ENG 103 or ENG 104 or **HIST 103*** or **HIST 104*** or Literature	Survey of English Literature or Survey of English Literature or American Literature or American Literature or **History of the US to 1865*** or **History of the US, 1865 to Present*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or American Literature: 1600 to 1865 or American Literature: 1865 to Present or **American History to 1877*** or **American History Since 1877*** or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
HIST 105 or **HIST 106*** or GEOG 102 or PHIL 101 or PHIL 104 or **PSCI 101*** or PSYC 101 or ECON 104 or ECON 103 or Foreign Language	History of Civilization I or **History of Civilization II*** or World Regional Geography or Intro to Philosophy or Intro to Logic or **American National Government*** or General Psychology or Principles of Economics II (Microeconomics) or Principles of Economics I (Macroeconomics) or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6	HISTORY 1100 or **HISTORY 1200*** or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or **POL SCI 1200*** or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	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
Humanities, Arts, and Social Sciences ENGLISH 3560 required.					
ENG 130	Technical Writing and Communication	3	ENGLISH 3560	Technical Writing	3
	No free electives applied to the degree.	0		Maximum Free Electives	0
	Group 2 Major Requirements	46		Group 2 Major Requirements	44
	Group 1 Core Requirements	31		Group 1 Core Requirements	27
	Total Hours	77		Total Hours*	71
				*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

Joliet Junior College		Semester	Missouri S&T		
EGR 101	Engineering Graphical Communications	4	MECH ENG 1720	Intro to Engineering Design	3
ENG 102 or ENG 130 or COMM 101	Rhetoric or Technical Writing and Communication or Principles of Communication	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 101	General Chemistry I	5	CHEM 1310*, 1319	General Chemistry I and Lab *CHEM 1310 will be substituted for CHEM 1305.	5
GEOL 101	Principles of Physical Geology	4	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
EGR 201	Analytical Mechanics - Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 202	Analytical Mechanics - Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. ***At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.**					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
ENG 105 or ENG 106 or ENG 103 or ENG 104 or **HIST 103*** or **HIST 104*** or Literature	Survey of English Literature or Survey of English Literature or American Literature or American Literature or **History of the US to 1865*** or **History of the US, 1865 to Present*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or American Literature: 1600 to 1865 or American Literature: 1865 to Present or **American History to 1877*** or **American History Since 1877*** or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
HIST 105 or **HIST 106*** or GEOG 102 or PHIL 101 or PHIL 104 or **PSCI 101*** or PSYC 101 or ECON 104 or ECON 103 or Foreign Language	History of Civilization I or **History of Civilization II*** or World Regional Geography or Intro to Philosophy or Intro to Logic or **American National Government*** or General Psychology or Principles of Economics II (Microeconomics) or Principles of Economics I (Macroeconomics) or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6	HISTORY 1100 or **HISTORY 1200*** or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or **POL SCI 1200*** or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	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
Humanities, Arts, and Social Sciences Select 3 hours.					
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	37		Group 2 Major Requirements	34
	Group 1 Core Requirements	31		Group 1 Core Requirements	27
	Total Hours	68		Total Hours*	61
				*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

Joliet Junior College		Semester	Missouri S&T		Semester
COMM 101	Principles of Communication	3	SPMS 1185	Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHEM 101	General Chemistry I	5	CHEM 1310*, 1319	General Chemistry I and Lab *CHEM 1310 will be substituted for CHEM 1305.	5
CIS 246	Advanced C Using C++	4	COMP SCI 1500	Computational Problem Solving	3
EGR 201 and EGR 202 BOTH of the courses above or ONE of the courses below. OR CHEM 209	Analytical Mechanics-Statics (3) and Analytical Mechanics-Dynamics (3) Both courses above combined or any one of the following courses will satisfy a required engineering science elective. OR Organic Chemistry I (5)	5	CIV ENG 2200 and MECH ENG 2350 BOTH of the courses above or ONE of the courses below. OR CHEM 2210, 2219*	Engineering Mechanics-Statics (3) and Engineering Mechanics-Dynamics (3) Both courses above combined or any one of the following courses will satisfy a required engineering science elective. OR Organic Chemistry I (3) and Lab* (1) *CHEM 2219 is not a degree requirement; transfers as general elective credit.	3
MATH 210	Linear Algebra	3	MATH 3108	Linear Algebra Satisfies a required math elective.	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. ***At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.**					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
ENG 105 or ENG 106 or ENG 103 or ENG 104 or **HIST 103*** or **HIST 104*** or Literature	Survey of English Literature or Survey of English Literature or American Literature or American Literature or **History of the US to 1865*** or **History of the US, 1865 to Present*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or American Literature: 1600 to 1865 or American Literature: 1865 to Present or **American History to 1877*** or **American History Since 1877*** or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
HIST 105 or **HIST 106*** or GEOG 102 or PHIL 101 or PHIL 104 or **PSCI 101*** or PSYC 101 or ECON 104 or ECON 103 or Foreign Language	History of Civilization I or **History of Civilization II*** or World Regional Geography or Intro to Philosophy or Intro to Logic or **American National Government*** or General Psychology or Principles of Economics II (Microeconomics) or Principles of Economics I (Macroeconomics) or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6	HISTORY 1100 or **HISTORY 1200*** or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or **POL SCI 1200*** or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	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
Humanities, Arts, and Social Sciences Select 3 hours.					
ENG 102 or ENG 130	Rhetoric or Technical Writing and Communication	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
Electives	Maximum Free Electives	3	Electives	Maximum Free Electives	3
	Group 2 Major Requirements	38		Group 2 Major Requirements	35
	Group 1 Core Requirements	31		Group 1 Core Requirements	27
	Total Hours	69		Total Hours*	62
				*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

Joliet Junior College		Semester	Missouri S&T		
EGR 101	Engineering Graphical Communications	4	MECH ENG 1720	Intro to Engineering Design	3
COMM 101	Principles of Communication	3	SPMS 1185	Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHEM 101	General Chemistry I	5	CHEM 1310*, 1319	General Chemistry I and Lab *CHEM 1310 will be substituted for CHEM 1305.	5
CIS 246	Advanced C Using C++	4	COMP SCI 1500	Computational Problem Solving	3
EGR 201 and EGR 202 BOTH of the courses above or ONE of the courses below. OR CHEM 209	Analytical Mechanics-Statics (3) and Analytical Mechanics-Dynamics (3) Both courses above combined or any one of the following courses will satisfy a required engineering science elective. OR Organic Chemistry I (5)	5	CIV ENG 2200 and MECH ENG 2350 BOTH of the courses above or ONE of the courses below. OR CHEM 2210, 2219*	Engineering Mechanics-Statics (3) and Engineering Mechanics-Dynamics (3) Both courses above combined or any one of the following courses will satisfy a required engineering science elective. OR Organic Chemistry I (3) and Lab* (1) *CHEM 2219 is not a degree requirement; transfers as general elective credit.	3
MATH 210	Linear Algebra	3	MATH 3108	Linear Algebra	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. ***At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.**					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
ENG 105 or ENG 106 or ENG 103 or ENG 104 or **HIST 103*** or **HIST 104*** or Literature	Survey of English Literature or Survey of English Literature or American Literature or American Literature or **History of the US to 1865*** or **History of the US, 1865 to Present*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or American Literature: 1600 to 1865 or American Literature: 1865 to Present or **American History to 1877*** or **American History Since 1877*** or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
HIST 105 or **HIST 106*** or GEOG 102 or PHIL 101 or PHIL 104 or **PSCI 101*** or PSYC 101 or ECON 104 or ECON 103 or Foreign Language	History of Civilization I or **History of Civilization II*** or World Regional Geography or Intro to Philosophy or Intro to Logic or **American National Government*** or General Psychology or Principles of Economics II (Microeconomics) or Principles of Economics I (Macroeconomics) or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6	HISTORY 1100 or **HISTORY 1200*** or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or **POL SCI 1200*** or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	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
Humanities, Arts, and Social Sciences Select 3 hours.					
ENG 102 or ENG 130	Rhetoric or Technical Writing and Communication	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
Electives	Maximum Free Electives	6	Electives	Maximum Free Electives	6
	Group 2 Major Requirements	45		Group 2 Major Requirements	41
	Group 1 Core Requirements	31		Group 1 Core Requirements	27
	Total Hours	76		Total Hours*	68

*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

Joliet Junior College		Semester	Missouri S&T		
EGR 101	Engineering Graphical Communications	4	MECH ENG 1720	Intro to Engineering Design	3
COMM 101	Principles of Communication	3	SPMS 1185	Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHEM 101	General Chemistry I	5	CHEM 1310, 1319	General Chemistry I and Lab	5
EGR 201	Analytical Mechanics - Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 202	Analytical Mechanics - Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. ***At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.**					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
ENG 105 or ENG 106 or ENG 103 or ENG 104 or **HIST 103*** or **HIST 104*** or Literature	Survey of English Literature or Survey of English Literature or American Literature or American Literature or **History of the US to 1865*** or **History of the US, 1865 to Present*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or American Literature: 1600 to 1865 or American Literature: 1865 to Present or **American History to 1877*** or **American History Since 1877*** or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines to include PSYCH 1101.					
PSYC 101	General Psychology	3	PSYCH 1101	General Psychology Required	3
HIST 105 or **HIST 106*** or GEOG 102 or PHIL 101 or PHIL 104 or **PSCI 101*** or ECON 104 or ECON 103 or Foreign Language	History of Civilization I or **History of Civilization II*** or World Regional Geography or Intro to Philosophy or Intro to Logic or **American National Government*** or Principles of Economics II (Microeconomics) or Principles of Economics I (Macroeconomics) or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	3	HISTORY 1100 or **HISTORY 1200*** or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or **POL SCI 1200*** or ECON 1100 or ECON 1200 or Foreign Language	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
Humanities, Arts, and Social Sciences Select 3 hours.					
ENG 102 or ENG 130	Rhetoric or Technical Writing and Communication	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	33		Group 2 Major Requirements	31
	Group 1 Core Requirements	31		Group 1 Core Requirements	27
	Total Hours	64		Total Hours*	61
				*S&T advisor permission is required to transfer more than 61 credits toward the S&T Engineering Management degree.	

Environmental Engineering Group 2 Major Requirements

Joliet Junior College			Semester	Missouri S&T		
EGR 101	Engineering Graphical Communications	4		MECH ENG 1720	Intro to Engineering Design	3
ENG 102 or ENG 130 or COMM 101	Rhetoric or Technical Writing and Communication or Principles of Communication	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
GEOL 101	Principles of Physical Geology	4		GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
CHEM 101	General Chemistry I	5		CHEM 1310, 1319	General Chemistry I and Lab	5
CHEM 102	General Chemistry II	5		CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) *CHEM 1510 is not a degree requirement, transfers as general elective credit.	3
BIO 151	General Biology I	5		BIO SCI 1113, 1219*	General Biology (3) and Lab* (1) *The lab is not a degree requirement, transfers as general elective credit.	3
EGR 201	Analytical Mechanics-Statics	3		CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 202	Analytical Mechanics-Dynamics	3		MECH ENG 2350	Engineering Mechanics-Dynamics	2
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 12 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. ***At least one course must be selected from HISTORY 1200, 1300, or 1310 to satisfy the State of Missouri government requirement and a degree-specific gen ed requirement.**						
Humanities and Fine Arts Select 6 hours from at least two specific disciplines. At least one course in either the HFA or the BSS (below) section must be selected from HISTORY 1200, 1300, or 1310.						
ENG 105 or ENG 106 or ENG 103 or ENG 104 or **HIST 103*** or **HIST 104*** or Literature	Survey of English Literature or Survey of English Literature or American Literature or American Literature or **History of the US to 1865*** or **History of the US, 1865 to Present*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6		ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or American Literature: 1600 to 1865 or American Literature: 1865 to Present or **American History to 1877*** or **American History Since 1877*** or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.. At least one course in either the HFA (above) or the BSS section must be selected from HISTORY 1200, 1300, or 1310.						
HIST 106* or PHIL 101 or PHIL 104 or PSYC 101 or ECON 104 or ECON 103 or Foreign Language	**History of Civilization II*** or Intro to Philosophy or Intro to Logic or General Psychology or Principles of Economics II (Microeconomics) or Principles of Economics I (Macroeconomics) or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6		**HISTORY 1200*** or PHILOS 1105 or PHILOS 1115 or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	**Modern Western Civilization*** or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement and a degree-specific gen ed requirement.**	6
	No free electives applied to the degree.	0			Maximum Free Electives	0
	Group 2 Major Requirements	44			Group 2 Major Requirements	37
	Group 1 Core Requirements	31			Group 1 Core Requirements	27
	Total Hours	75			Total Hours*	64
					*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

Joliet Junior College			Semester	Missouri S&T		
EGR 101	Engineering Graphical Communications	4		MECH ENG 1720	Intro to Engineering Design	3
ENG 130	Technical Writing and Communication	3		ENGLISH 3560	Technical Writing Applies to degree as Gen Ed Communication requirement.	3
CHEM 101	General Chemistry I	5		CHEM 1310*, 1319	General Chemistry I and Lab *CHEM 1310 will be substituted for CHEM 1305.	5
GEOL 101	Principles of Physical Geology	4		GEO ENG 1150 (GEOLOGY 1110)	Physical and Environmental Geology	3
EGR 201	Analytical Mechanics-Statics	3		CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 202	Analytical Mechanics-Dynamics	4		MECH ENG 2350	Engineering Mechanics-Dynamics	2
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. ***At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.**						
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.						
ENG 105 or ENG 106 or ENG 103 or ENG 104 or **HIST 103*** or **HIST 104*** or Literature	Survey of English Literature or Survey of English Literature or American Literature or American Literature or **History of the US to 1865*** or **History of the US, 1865 to Present*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6		ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or American Literature: 1600 to 1865 or American Literature: 1865 to Present or **American History to 1877*** or **American History Since 1877*** or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.						
HIST 105 or **HIST 106*** or GEOG 102 or PHIL 101 or PHIL 104 or **PSCI 101*** or PSYC 101 or ECON 104 or ECON 103 or Foreign Language	History of Civilization I or **History of Civilization II*** or World Regional Geography or Intro to Philosophy or Intro to Logic or **American National Government*** or General Psychology or Principles of Economics II (Microeconomics) or Principles of Economics I (Macroeconomics) or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6		HISTORY 1100 or **HISTORY 1200*** or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or **POL SCI 1200*** or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	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
Humanities, Arts, and Social Sciences Select 3 hours.						
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	38			Group 2 Major Requirements	34
	Group 1 Core Requirements	31			Group 1 Core Requirements	27
	Total Hours	69			Total Hours*	64
					*S&T advisor permission is required to transfer more than 65 credits toward the S&T Geological Engineering degree.	

Mechanical Engineering Group 2 Major Requirements

Joliet Junior College		Semester	Missouri S&T		
EGR 101	Engineering Graphical Communications	4	MECH ENG 1720	Intro to Engineering Design	3
ENG 102 or ENG 130 or COMM 101	Rhetoric or Technical Writing and Communication or Principles of Communication	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 101	General Chemistry I	5	CHEM 1310*, 1319	General Chemistry I and Lab *CHEM 1310 will be substituted for CHEM 1305.	5
EGR 201	Analytical Mechanics - Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
MATH 210	Linear Algebra	3	MATH 3108	Linear Algebra I Satisfies the Advanced Math/Statistics elective requirement.	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. ***At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.**					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
ENG 105 or ENG 106 or ENG 103 or ENG 104 or **HIST 103*** or **HIST 104*** or Literature	Survey of English Literature or Survey of English Literature or American Literature or American Literature or **History of the US to 1865*** or **History of the US, 1865 to Present*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or American Literature: 1600 to 1865 or American Literature: 1865 to Present or **American History to 1877*** or **American History Since 1877*** or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
HIST 105 or **HIST 106*** or GEOG 102 or PHIL 101 or PHIL 104 or **PSCI 101*** or PSYC 101 or ECON 104 or ECON 103 or Foreign Language	History of Civilization I or **History of Civilization II*** or World Regional Geography or Intro to Philosophy or Intro to Logic or **American National Government*** or General Psychology or Principles of Economics II (Microeconomics) or Principles of Economics I (Macroeconomics) or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6	HISTORY 1100 or **HISTORY 1200*** or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or **POL SCI 1200*** or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	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
Humanities, Arts, and Social Sciences Select 3 hours.					
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	33		Group 2 Major Requirements	32
	Group 1 Core Requirements	31		Group 1 Core Requirements	27
	Total Hours	64		Total Hours*	59
				*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

Joliet Junior College		Semester	Missouri S&T		
EGR 101	Engineering Graphical Communications	4	MECH ENG 1720	Intro to Engineering Design	3
ENG 102 or ENG 130 or COMM 101	Rhetoric or Technical Writing and Communication or Principles of Communication	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
CIS 246	Advanced C Using C++	4	COMP SCI 1500	Computational Problem Solving	3
EGR 201	Analytical Mechanics - Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
CHEM 101	General Chemistry I	5	CHEM 1310, 1319	General Chemistry I and Lab	5
CHEM 102	General Chemistry II	5	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 209 or PHYS 203	Organic Chemistry I (5) or Engineering Physics III (3)	3	CHEM 2210 or PHYSICS 2305	Organic Chemistry I (3) or Intro to Modern Physics (3) Not specifically required for the degree but will satisfy out-of-department technical elective requirement	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. ***At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.**					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
ENG 105 or ENG 106 or ENG 103 or ENG 104 or **HIST 103*** or **HIST 104*** or Literature	Survey of English Literature or Survey of English Literature or American Literature or American Literature or **History of the US to 1865*** or **History of the US, 1865 to Present*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or American Literature: 1600 to 1865 or American Literature: 1865 to Present or **American History to 1877*** or **American History Since 1877*** or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
HIST 105 or **HIST 106*** or GEOG 102 or PHIL 101 or PHIL 104 or **PSCI 101*** or PSYC 101 or ECON 104 or ECON 103 or Foreign Language	History of Civilization I or **History of Civilization II*** or World Regional Geography or Intro to Philosophy or Intro to Logic or **American National Government*** or General Psychology or Principles of Economics II (Microeconomics) or Principles of Economics I (Macroeconomics) or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6	HISTORY 1100 or **HISTORY 1200*** or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or **POL SCI 1200*** or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	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
Humanities, Arts, and Social Sciences Select 3 hours.					
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	42		Group 2 Major Requirements	38
	Group 1 Core Requirements	31		Group 1 Core Requirements	27
	Total Hours	73		Total Hours*	68
				*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

Joliet Junior College		Semester	Missouri S&T		
EGR 101	Engineering Graphical Communications	4	MECH ENG 1720	Intro to Engineering Design	3
ENG 102 or ENG 130 or COMM 101	Rhetoric or Technical Writing and Communication or Principles of Communication	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 101	General Chemistry I	5	CHEM 1310, 1319	General Chemistry I and Lab	5
EGR 201	Analytical Mechanics - Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 202	Analytical Mechanics - Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
GEOL 101	Principles of Physical Geology	4	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 12 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. ***At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.**					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
ENG 105 or ENG 106 or ENG 103 or ENG 104 or **HIST 103*** or **HIST 104*** or Literature	Survey of English Literature or Survey of English Literature or American Literature or American Literature or **History of the US to 1865*** or **History of the US, 1865 to Present*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or American Literature: 1600 to 1865 or American Literature: 1865 to Present or **American History to 1877*** or **American History Since 1877*** or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
HIST 105 or **HIST 106*** or GEOG 102 or PHIL 101 or PHIL 104 or **PSCI 101*** or PSYC 101 or ECON 104 or ECON 103 or Foreign Language	History of Civilization I or **History of Civilization II*** or World Regional Geography or Intro to Philosophy or Intro to Logic or **American National Government*** or General Psychology or Principles of Economics II (Microeconomics) or Principles of Economics I (Macroeconomics) or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6	HISTORY 1100 or **HISTORY 1200*** or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or **POL SCI 1200*** or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	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	34		Group 2 Major Requirements	31
	Group 1 Core Requirements	31		Group 1 Core Requirements	27
	Total Hours	65		Total Hours*	58

*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

Joliet Junior College		Semester	Missouri S&T		
EGR 101	Engineering Graphical Communications	4	MECH ENG 1720	Intro to Engineering Design	3
ENG 102 or ENG 130 or COMM 101	Rhetoric or Technical Writing and Communication or Principles of Communication	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 101	General Chemistry I	5	CHEM 1310, 1319	General Chemistry I and Lab	5
MATH 210	Linear Algebra	3	MATH 3108	Linear Algebra I	3
EGR 201	Analytical Mechanics - Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PHYS 203	Engineering Physics III	3	PHYSICS 2305	Intro to Modern Physics	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. ***At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.**					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
ENG 105 or ENG 106 or ENG 103 or ENG 104 or **HIST 103*** or **HIST 104*** or Literature	Survey of English Literature or Survey of English Literature or American Literature or American Literature or **History of the US to 1865*** or **History of the US, 1865 to Present*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or American Literature: 1600 to 1865 or American Literature: 1865 to Present or **American History to 1877*** or **American History Since 1877*** or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines to include either ECON 1100 or 1200.					
ECON 104 or ECON 103	Principles of Economics II (Microeconomics) or Principles of Economics I (Macroeconomics)	3	ECON 1100 or ECON 1200	Principles of Microeconomics or Principles of Macroeconomics	3
HIST 105 or **HIST 106*** or GEOG 102 or PHIL 101 or PHIL 104 or **PSCI 101*** or PSYC 101 or Foreign Language	History of Civilization I or **History of Civilization II*** or World Regional Geography or Intro to Philosophy or Intro to Logic or **American National Government*** or General Psychology or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	3	HISTORY 1100 or **HISTORY 1200*** or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or **POL SCI 1200*** or PSYCH 1101 or Foreign Language	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
Humanities, Arts, and Social Sciences Select 3 hours.					
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
	Maximum Free Electives	0		Maximum Free Electives	0
	Group 2 Major Requirements	36		Group 2 Major Requirements	35
	Group 1 Core Requirements	31		Group 1 Core Requirements	27
	Total Hours	67		Total Hours*	62
				*S&T advisor permission is required to transfer more than 69 credits toward the S&T Nuclear Engineering degree.	

Petroleum Engineering Group 2 Major Requirements

Joliet Junior College			Semester	Missouri S&T		
ENG 102 or ENG 130 or COMM 101	Rhetoric or Technical Writing and Communication or Principles of Communication	3		ENGLISH 3560 or ENGLISH 1160 or ENGLISH 1600	Technical Writing (preferred) or Writing and Research or Intro to Technical Communications Applies to degree as Gen Ed Communications requirement.	3
CHEM 101	General Chemistry I	5		CHEM 1310*, 1319	General Chemistry I and Lab *CHEM 1310 will be substituted for CHEM 1305.	5
CIS 246	Advanced C Using C++	4		COMP SCI 1500	Computational Problem Solving	3
GEOL 101	Principles of Physical Geology	4		GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
EGR 201	Analytical Mechanics - Statics	3		CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 202	Analytical Mechanics - Dynamics	3		MECH ENG 2350	Engineering Mechanics-Dynamics	2
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. ***At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.**						
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.						
ENG 105 or ENG 106 or ENG 103 or ENG 104 or **HIST 103*** or **HIST 104*** or Literature	Survey of English Literature or Survey of English Literature or American Literature or American Literature or **History of the US to 1865*** or **History of the US, 1865 to Present*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6		ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or American Literature: 1600 to 1865 or American Literature: 1865 to Present or **American History to 1877*** or **American History Since 1877*** or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.						
HIST 105 or **HIST 106*** or GEOG 102 or PHIL 101 or PHIL 104 or **PSCI 101*** or PSYC 101 or ECON 104 or ECON 103 or Foreign Language	History of Civilization I or **History of Civilization II*** or World Regional Geography or Intro to Philosophy or Intro to Logic or **American National Government*** or General Psychology or Principles of Economics II (Microeconomics) or Principles of Economics I (Macroeconomics) or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6		HISTORY 1100 or **HISTORY 1200*** or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or **POL SCI 1200*** or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	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
Humanities, Arts, and Social Sciences Select 3 hours.						
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	37			Group 2 Major Requirements	34
	Group 1 Core Requirements	31			Group 1 Core Requirements	27
	Total Hours	68			Total Hours*	61
					*S&T advisor permission is required to transfer more than 69 credits toward the S&T Petroleum Engineering degree.	

Semiconductor Engineering-Device Engineering Emphasis
Group 2 Major Requirements

Joliet Junior College		Semester	Missouri S&T		
EGR 101	Engineering Graphical Communications	4	MECH ENG 1720	Intro to Engineering Design	3
ENG 102 or ENG 130 or COMM 101	Rhetoric or Technical Writing and Communication or Principles of Communication	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 101	General Chemistry I	5	CHEM 1310, 1319	General Chemistry I and Lab	5
CHEM 102	General Chemistry II	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) *CHEM 1510 is not a degree requirement, transfers as general elective credit.	3
CIS 246	Advanced C Using C++	4	COMP SCI 1500	Computational Problem Solving	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. ***At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.**					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
ENG 105 or ENG 106 or ENG 103 or ENG 104 or **HIST 103*** or **HIST 104*** or Literature	Survey of English Literature or Survey of English Literature or American Literature or American Literature or **History of the US to 1865*** or **History of the US, 1865 to Present*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or American Literature: 1600 to 1865 or American Literature: 1865 to Present or **American History to 1877*** or **American History Since 1877*** or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
HIST 105 or **HIST 106*** or GEOG 102 or PHIL 101 or PHIL 104 or **PSCI 101*** or PSYC 101 or ECON 104 or ECON 103 or Foreign Language	History of Civilization I or **History of Civilization II*** or World Regional Geography or Intro to Philosophy or Intro to Logic or **American National Government*** or General Psychology or Principles of Economics II (Microeconomics) or Principles of Economics I (Macroeconomics) or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6	HISTORY 1100 or **HISTORY 1200*** or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or **POL SCI 1200*** or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	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
Humanities, Arts, and Social Sciences Select 3 hours.					
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
	Maximum Free Electives	3		Maximum Free Electives	3
	Group 2 Major Requirements	39		Group 2 Major Requirements	35
	Group 1 Core Requirements	31		Group 1 Core Requirements	27
	Total Hours	70		Total Hours*	62
				*S&T advisor permission is required to transfer more than 68 credits toward the S&T Ceramic Engineering degree.	

Semiconductor Engineering-Process Engineering Emphasis
Group 2 Major Requirements

Joliet Junior College		Semester	Missouri S&T		
EGR 101	Engineering Graphical Communications	4	MECH ENG 1720	Intro to Engineering Design	3
ENG 102 or ENG 130 or COMM 101	Rhetoric or Technical Writing and Communication or Principles of Communication	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 101	General Chemistry I	5	CHEM 1310, 1319	General Chemistry I and Lab	5
CHEM 102	General Chemistry II	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) *CHEM 1510 is not a degree requirement, transfers as general elective credit.	3
CIS 246	Advanced C Using C++	4	COMP SCI 1500	Computational Problem Solving	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. ***At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.**					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
ENG 105 or ENG 106 or ENG 103 or ENG 104 or **HIST 103*** or **HIST 104*** or Literature	Survey of English Literature or Survey of English Literature or American Literature or American Literature or **History of the US to 1865*** or **History of the US, 1865 to Present*** or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or **HISTORY 1300*** or **HISTORY 1310*** or Literature	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present or American Literature: 1600 to 1865 or American Literature: 1865 to Present or **American History to 1877*** or **American History Since 1877*** or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
HIST 105 or **HIST 106*** or GEOG 102 or PHIL 101 or PHIL 104 or **PSCI 101*** or PSYC 101 or ECON 104 or ECON 103 or Foreign Language	History of Civilization I or **History of Civilization II*** or World Regional Geography or Intro to Philosophy or Intro to Logic or **American National Government*** or General Psychology or Principles of Economics II (Microeconomics) or Principles of Economics I (Macroeconomics) or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6	HISTORY 1100 or **HISTORY 1200*** or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or **POL SCI 1200*** or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	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
Humanities, Arts, and Social Sciences Select 3 hours.					
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
	Maximum Free Electives	3		Maximum Free Electives	3
	Group 2 Major Requirements	39		Group 2 Major Requirements	35
	Group 1 Core Requirements	31		Group 1 Core Requirements	27
	Total Hours	70		Total Hours*	62
				*S&T advisor permission is required to transfer more than 68 credits toward the S&T Ceramic Engineering degree.	