

Metropolitan Community Colleges — 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.

Metropolitan Community Colleges			Semester	Missouri S&T		
MATH 180	Analytic Geometry and Calculus I	5		MATH 1214	Calculus I	4
MATH 190	Analytic Geometry and Calculus II	5		MATH 1215	Calculus II	4
MATH 210	Analytic Geometry and Calculus III	5		MATH 2222	Calculus III	4
MATH 230	Differential Equations	3		MATH 3304	Elementary Differential Equations	3
PHYS 220	Engineering Physics I	5		PHYSICS 1135	Engineering Physics I	4
PHYS 221	Engineering Physics II	5		PHYSICS 2135	Engineering Physics II	4
ENGR 101	Intro to the Engineering Profession	1		FR ENG 1100	Study and Careers in Engineering and Computing	1
ENGL 101	Composition and Reading I	3		ENGLISH 1120	Exposition and Argumentation	3
		Total Hours	32			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

Metropolitan Community Colleges			Semester	Missouri S&T	
ENGR 113	Engineering Design Microcomputer Applications	3	MECH ENG 1720	Intro to Engineering Design	3
ENGL 102 or ENGL 215 or COMM 100 or	Composition and Reading II or Technical Writing or Fundamentals of Speech	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 111	General College Chemistry I	5	CHEM 1310*, 1319	General Chemistry I and Lab *CHEM 1310 will be substituted for CHEM 1305.	5
CSIS 223 or ENGR 204	Object-Oriented Programming with C++ or Programming for Engineers and Scientists	3	COMP SCI 1971, 1981 or COMP SCI 1972, 1982	Intro to Programming Method and Lab (C++) (3) or Intro to MATLAB Programming and Lab (3)	3
ENGR 233	Circuit Analysis I	4	ELEC ENG 2800	Electrical Circuits	3
ENGR 229	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
ENGR 230	Dynamics	3	AERO ENG 2360	Dynamics	3
ENGR 223	Thermodynamics and Heat Transfer	4	MECH ENG 2519	Thermodynamics	3
ENGR 240	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	3
ENGR 215	Engineering Statistics and Computation	3	STAT 3115*	Engineering Statistics* Satisfies the Advanced Math/Stat elective requirement. *STAT 3115 will be substituted for STAT 3113, pending approval.	3
PHIL 203	Ethics or other engineering, business, bio, social ethics approved by advisor	3	PHILOS 1130	How Should I Live? An Intro to Ethics or other engineering, business, bio, social 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.					
ENGL 220 or ENGL 221 or ENGL 222 or ENGL 223 or ENGL 254 or HIST 120* or HIST 121* or ART 108 or MUSI 108 or SPDR 106 or Literature	British Literature to 1750 or British Literature 1750-Present or American Literature to 1860 or American Literature 1860-Present or World Literature I or United States History to 1865* or United States History since 1865* or Survey of Art or Music Appreciation or Theatre Appreciation 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 ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	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 Art Appreciation or Music Appreciation or Theatre via Video 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 133 or HIST 134* or GEOG 105 or PHIL 100 or PHIL 103 or PHIL 200 or POLS 136* or PSYC 140 or ECON 211 or ECON 210 or Foreign Language	Foundations of Western Civilization or Modern Western Civilization* or World Geography or Intro to Philosophy or Intro to Critical Thinking or Logic or Intro to US National Politics* or General Psychology or Microeconomics or 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		55	Group 2 Major Requirements		53
Group 1 Core Requirements		32	Group 1 Core Requirements		27
Total Hours		87			Total Hours* 80
*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

Metropolitan Community Colleges			Semester	Missouri S&T	
ENGR 113	Engineering Design Microcomputer Applications	3	MECH ENG 1720	Intro to Engineering Design	3
ENGL 102 or ENGL 215 or COMM 100 or	Composition and Reading II or Technical Writing or Fundamentals of Speech	3	ENGLISH 1160 or ENGLISH 3560 or SPMS 1185	Writing and Research or Technical Writing or Principles of Speech <i>Applies to degree as Gen Ed Communication requirement.</i>	3
CHEM 111	General College Chemistry I	5	CHEM 1310*, 1319	General Chemistry I and Lab *CHEM 1310 will be substituted for CHEM 1305.	5
ENGR 229	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
ENGR 230	Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
ENGR 223	Thermodynamics and Heat Transfer	4	MECH ENG 2527 or MECH ENG 2519*	Thermal Analysis or Thermodynamics* *Will be substituted for MECH ENG 2527.	3
ENGR 240	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	3
SRVY 135	Elementary Surveying	3	CIV ENG 2401	Fundamentals of Surveying	3
ENGR 215	Engineering Statistics and Computation	3	STAT 3115	Engineering Statistics Will be substituted for STAT 3113.	3
GEOL 101	Physical Geology	5	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.					
ENGL 220 or ENGL 221 or ENGL 222 or ENGL 223 or ENGL 254 or HIST 120* or HIST 121* or MUSI 108 or SPDR 106 or Literature	British Literature to 1750 or British Literature 1750-Present or American Literature to 1860 or American Literature 1860-Present or World Literature I or United States History to 1865* or United States History since 1865* or Music Appreciation or Theatre Appreciation 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 ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or MUSIC 1150 or THEATRE 1190 or Literature	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 Appreciation or Theatre via Video 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 134*	Modern Western Civilization* *Satisfies the State of Missouri Government requirement.	3	HISTORY 1200*	Modern Western Civilization* *Satisfies the State of Missouri Government requirement.	3
PHIL 100 or PHIL 103 or PHIL 200 or POLS 136* or PSYC 140 or ECON 211 or ECON 210 or Foreign Language	Intro to Philosophy or Intro to Critical Thinking or Logic or Intro to US National Politics* or General Psychology or Microeconomics or 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		47	Group 2 Major Requirements		43
Group 1 Core Requirements		32	Group 1 Core Requirements		27
Total Hours		79	Total Hours*		70
*S&T advisor permission is required to transfer more than 69 credits toward the S&T Architectural Engineering degree.					

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Biomedical Engineering-Biomanufacturing Group 2 Major Requirements

Metropolitan Community Colleges			Semester	Missouri S&T		
COMM 100	Fundamentals of Speech	3	SP&MS 1185	Principles of Speech	3	
CHEM 111	General College Chemistry I	5	CHEM 1310, 1319	General Chemistry I and Lab	5	
CHEM 112	General College Chemistry II	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis* (2)	3	
CHEM 221	Organic Chemistry I	5	CHEM 2210, 2219	Organic Chemistry I and Lab	4	
CHEM 222 or BIOL 101 or BIOL 123 or BIOL 204	Organic Chemistry II (5) or General Biology (5) or General Biology for Majors I (4) or Genetics (3)	3	CHEM 2220, 2229 or BIO SCI 1113, 1219 or BIO SCI 1213*, 1219 or BIO SCI 2223	Organic Chemistry II and Lab or General Biology and Lab or Principles of Biology* and Lab or General Genetics	4	
CSIS 271 or CSIS 223 or ENGR 204	Data Structures and Algorithm Analysis or Object-Oriented Programming with C++ or Programming for Engineers and Scientists	3	COMP SCI 1500 or COMP SCI 1971,1981* or COMP SCI 1972, 1982*	Computational Problem Solving (3) or Intro to Programming Methodology and Lab*(C++) (3) or Intro to MATLAB Programming and Lab* (3)	3	
ENGR 223	Thermodynamics and Heat Transfer	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	
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.						
ENGL 220 or ENGL 221 or ENGL 222 or ENGL 223 or ENGL 254 or HIST 120* or HIST 121* or ART 108 or MUSI 108 or SPDR 106 or Literature	British Literature to 1750 or British Literature 1750-Present or American Literature to 1860 or American Literature 1860-Present or World Literature I or United States History to 1865* or United States History since 1865* or Survey of Art or Music Appreciation or Theatre Appreciation 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 ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	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 Art Appreciation or Music Appreciation or Theatre via Video 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 133 or HIST 134* or GEOG 105 or POLS 136* or PSYC 140 or ECON 211 or ECON 210 or Foreign Language	Foundations of Western Civilization or Modern Western Civilization* or World Geography or Intro to US National Politics* or General Psychology or Microeconomics or 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 PSYC 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.						
ENGL 215	Technical Writing	3	ENGLISH 3560	Technical Writing	3	
No free electives applied to the degree.						
		0	Maximum Free Electives		0	
		43	Group 2 Major Requirements		40	
		32	Group 1 Core Requirements		27	
Total Hours		75			Total Hours*	
					67	
*S&T advisor permission is required to transfer more than 69 credit hours toward the degree.						

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Biomedical Engineering-Biomaterials Group 2 Major Requirements

Metropolitan Community Colleges			Semester	Missouri S&T	
COMM 100	Fundamentals of Speech	3	SP&MS 1185	Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHEM 111	General College Chemistry I	5	CHEM 1310, 1319	General Chemistry I and Lab	5
CHEM 112	General College 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 221	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 222	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 101 or BIOL 123	General Biology (5) or General Biology for Majors I (4)	4	BIO SCI 1113*, 1219* or BIO SCI 1213*, 1219*	General Biology* and Lab* or Principles of Biology* and Lab* *Applies to degree as Track Elective (Non-engineering). BIO SCI 1213 will be substituted for BIO SCI 1113.	4
CSIS 271 or CSIS 223 or ENGR 204	Data Structures and Algorithm Analysis or Object-Oriented Programming with C++ or Programming for Engineers and Scientists	3	COMP SCI 1500 or COMP SCI 1971, 1981* or COMP SCI 1972, 1982*	Computational Problem Solving (3) or Intro to Programming Methodology and Lab* (C++) (3) or Intro to MATLAB Programming and Lab* (3) *Will be substituted for COMP SCI 1500.	3
ENGR 229	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
ENGR 233, 234	Circuit Analysis I (4) and Lab (1)	5	ELEC ENG 2100*, 2101	Circuits I* (3) and Circuit Analysis Lab (1) *A passing grade on the Missouri S&T ELEC ENG 2100 final exam is required to receive credit for ELEC ENG 2100. Applies to the degree as a Track Elective (Engineering).	4
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.					
ENGL 220 or ENGL 221 or ENGL 222 or ENGL 223 or ENGL 254 or HIST 120* or HIST 121* or ART 108 or MUSI 108 or SPDR 106 or Literature	British Literature to 1750 or British Literature 1750-Present or American Literature to 1860 or American Literature 1860-Present or World Literature I or United States History to 1865* or United States History since 1865* or Survey of Art or Music Appreciation or Theatre Appreciation 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 ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	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 Art Appreciation or Music Appreciation or Theatre via Video 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 133 or HIST 134* or GEOG 105 or POLS 136* or PSYC 140 or ECON 211 or ECON 210 or Foreign Language	Foundations of Western Civilization or Modern Western Civilization* or World Geography or Intro to US National Politics* or General Psychology or Microeconomics or 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.					
ENGL 215	Technical Writing	3	ENGLISH 3560	Technical Writing	3
No free electives applied to the degree.		0	Maximum Free Electives		0
Group 2 Major Requirements		53	Group 2 Major Requirements		48
Group 1 Core Requirements		32	Group 1 Core Requirements		27
Total Hours		85	Total Hours*		75
*S&T advisor permission is required to transfer more than 69 credits toward the S&T Biomedical Engineering degree.					

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Ceramic Engineering Group 2 Major Requirements

Metropolitan Community Colleges			Semester	Missouri S&T		
ENGR 113	Engineering Design Microcomputer Applications	3		MECH ENG 1720	Intro to Engineering Design	3
ENGL 102 or ENGL 215 or COMM 100 or	Composition and Reading II or Technical Writing or Fundamentals of Speech	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 229	Statics	3		CIV ENG 2200	Engineering Mechanics-Statics	3
ENGR 240	Mechanics of Materials	3		CIV ENG 2210	Mechanics of Materials	3
CHEM 111	General College Chemistry I	5		CHEM 1310, 1319	General Chemistry I and Lab	5
CHEM 112	General College 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
CSIS 271 or CSIS 223 or ENGR 204	Data Structures and Algorithm Analysis or Object-Oriented Programming with C++ or Programming for Engineers and Scientists	3		COMP SCI 1500 or COMP SCI 1971, 1981* or COMP SCI 1972, 1982*	Computational Problem Solving (3) or Intro to Programming Methodology and Lab*(C++) (3) or Intro to MATLAB Programming and Lab* (3) *Will be substituted for COMP SCI 1500.	3
ENGR 215	Engineering Statistics and Computation	3		STAT 3115*	Engineering Statistics* any statistics course 3000-level or higher. Satisfies statistics elective requirement. *STAT 3115 will be substituted for this 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.						
ENGL 220 or ENGL 221 or ENGL 222 or ENGL 223 or ENGL 254 or HIST 120* or HIST 121* or ART 108 or MUSI 108 or SPDR 106 or Literature	British Literature to 1750 or British Literature 1750-Present or American Literature to 1860 or American Literature 1860-Present or World Literature I or United States History to 1865* or United States History since 1865* or Survey of Art or Music Appreciation or Theatre Appreciation 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 ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	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 Art Appreciation or Music Appreciation or Theatre via Video 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 133 or HIST 134* or GEOG 105 or PHIL 100 or PHIL 103 or PHIL 200 or POLS 136* or PSYC 140 or ECON 211 or ECON 210 or Foreign Language	Foundations of Western Civilization or Modern Western Civilization* or World Geography or Intro to Philosophy or Intro to Critical Thinking or Logic or Intro to US National Politics* or General Psychology or Microeconomics or 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		46		Group 2 Major Requirements		44
Group 1 Core Requirements		32		Group 1 Core Requirements		27
Total Hours		78		Total Hours*		71
*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

Metropolitan Community Colleges			Semester	Missouri S&T	
ENGR 113	Engineering Design Microcomputer Applications	3	MECH ENG 1720	Intro to Engineering Design	3
COMM 100	Fundamentals of Speech	3	SP&MS 1185	Principles of Speech	3
CHEM 111	General College Chemistry I	5	CHEM 1310, 1319	Applies to degree as Gen Ed Communication requirement. General Chemistry I and Lab	5
CHEM 112	General College 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 221	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 222	Organic Chemistry II	5	CHEM 2220, 2229*	Organic Chemistry II (3) and Lab* (1) CHEM 2220 Will satisfy 3 of 9 required hours of science electives CHEM 2229 is not required for the degree, will transfer as general credit.	8
BIOL 208	Microbiology	5	BIO SCI 3313, 3319	Microbiology and Lab (5) Will satisfy 5 of 9 required hours of science electives .	5
CSIS 271 or CSIS 223 or ENGR 204	Data Structures and Algorithm Analysis or Object-Oriented Programming with C++ or Programming for Engineers and Scientists	3	COMP SCI 1500 or COMP SCI 1971, 1981* or COMP SCI 1972, 1982*	Computational Problem Solving (3) or Intro to Programming Methodology and Lab*(C++) (3) or Intro to MATLAB Programming and Lab* (3) *Will be substituted for COMP SCI 1500.	3
ENGR 215	Engineering Statistics and Computation	3	STAT 3115*	Engineering Statistics* be substituted for STAT 3113.	*Will 3
ENGR 223	Thermodynamics and Heat Transfer	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
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.					
ENGL 220 or ENGL 221 or ENGL 222 or ENGL 223 or ENGL 254 or HIST 120* or HIST 121* or ART 108 or MUSI 108 or SPDR 106 or Literature	British Literature to 1750 or British Literature 1750-Present or American Literature to 1860 or American Literature 1860-Present or World Literature I or United States History to 1865* or United States History since 1865* or Survey of Art or Music Appreciation or Theatre Appreciation 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 ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	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 Art Appreciation or Music Appreciation or Theatre via Video 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 133 or HIST 134* or GEOG 105 or PHIL 100 or PHIL 103 or PHIL 200 or POLS 136* or PSYC 140 or ECON 211 or ECON 210 or Foreign Language	Foundations of Western Civilization or Modern Western Civilization* or World Geography or Intro to Philosophy or Intro to Critical Thinking or Logic or Intro to US National Politics* or General Psychology or Microeconomics or 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.					
ENGL 215	Technical Writing	3	ENGLISH 3560	Technical Writing	3
No free electives applied to the degree.		0		Maximum Free Electives	0
Group 2 Major Requirements		59		Group 2 Major Requirements	58
Group 1 Core Requirements		32		Group 1 Core Requirements	27
Total Hours		91			Total Hours* 85
*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

Metropolitan Community Colleges			Semester	Missouri S&T	
ENGR 113	Engineering Design Microcomputer Applications	3	MECH ENG 1720	Intro to Engineering Design	3
ENGL 102 or ENGL 215 or COMM 100 or	Composition and Reading II or Technical Writing or Fundamentals of Speech	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 111	General College Chemistry I	5	CHEM 1310*, 1319	General Chemistry I and Lab *CHEM 1310 will be substituted for CHEM 1305.	5
GEO 101	Physical Geology	5	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
ENGR 229	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
ENGR 230	Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
ENGR 240	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	3
SRVY 135	Elementary Surveying	3	CIV ENG 2401	Fundamentals of Surveying	3
ENGR 215	Engineering Statistics and Computation	3	STAT 3115	Engineering Statistics Will be substituted for STAT 3113.	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.					
ENGL 220 or ENGL 221 or ENGL 222 or ENGL 223 or ENGL 254 or HIST 120* or HIST 121* or ART 108 or MUSI 108 or SPDR 106 or Literature	British Literature to 1750 or British Literature 1750-Present or American Literature to 1860 or American Literature 1860-Present or World Literature I or United States History to 1865* or United States History since 1865* or Survey of Art or Music Appreciation or Theatre Appreciation 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 ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	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 Art Appreciation or Music Appreciation or Theatre via Video 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 133 or HIST 134* or GEOG 105 or PHIL 100 or PHIL 103 or PHIL 200 or POLS 136* or PSYC 140 or ECON 211 or ECON 210 or Foreign Language	Foundations of Western Civilization or Modern Western Civilization* or World Geography or Intro to Philosophy or Intro to Critical Thinking or Logic or Intro to US National Politics* or General Psychology or Microeconomics or 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		46	Group 2 Major Requirements		43
Group 1 Core Requirements		32	Group 1 Core Requirements		27
Total Hours		78			Total Hours*
					70
*S&T advisor permission is required to transfer more than 69 credits toward the S&T Civil Engineering degree.					

Computer Engineering Group 2 Major Requirements

<u>Metropolitan Community Colleges</u>		<u>Semester</u>	<u>Missouri S&T</u>	
COMM 100	Fundamentals of Speech	3	SPMS 1185	Principles of Speech Applies to degree as Gen Ed Communication requirement.
CHEM 111	General College Chemistry I	5	CHEM 1310*, 1319	General Chemistry I and Lab *CHEM 1310 will be substituted for CHEM 1305.
MATH 121* and MATH 122*	Discrete Structures for Computer Science I* and Discrete Structures for Computer Science II* *The combination of MCC MATH 121 AND 122 is equivalent to Missouri S&T COMP SCI 1200. Both courses must be taken to receive credit for Missouri S&T COMP SCI 1200.	6	COMP SCI 1200	Discrete Math for Computer Science
CSIS 271 or CSIS 223	Data Structures and Algorithm Analysis or Object-Oriented Programming with C++	3	COMP SCI 1500 or COMP SCI 1971, 1981*	Computational Problem Solving (3) or Intro to Programming Methodology and Lab* (C++) (3) *Will be substituted for COMP SCI 1500.
ENGR 229 and ENGR 230 BOTH of the courses above or ONE of the courses below. OR ENGR 223 or CHEM 221 or BIOL 214	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 and Heat Transfer (4) or Organic Chemistry I (5) or Principles of 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 2223	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 Thermodynamics (3) or Organic Chemistry I (4) or General Genetics (3)
ENGR 233, 234	Circuit Analysis I (4) and Lab (1)	5	ELEC ENG 2100*, 2101	Circuits I* (3) and Circuit Analysis Lab (1) *A passing grade on the Missouri S&T ELEC ENG 2100 final exam is required to receive credit for ELEC ENG 2100.
ENGR 215	Engineering Statistics and Computation	3	STAT 3115	Engineering Statistics Will be substituted for STAT 3117.
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.				
ENGL 220 or ENGL 221 or ENGL 222 or ENGL 223 or ENGL 254 or HIST 120* or HIST 121* or ART 108 or MUSI 108 or SPDR 106 or Literature	British Literature to 1750 or British Literature 1750-Present or American Literature to 1860 or American Literature 1860-Present or World Literature I or United States History to 1865* or United States History since 1865* or Survey of Art or Music Appreciation or Theatre Appreciation 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 ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	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 Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. *Satisfies the State of Missouri government requirement.
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.				
HIST 133 or HIST 134* or GEOG 105 or PHIL 100 or PHIL 103 or PHIL 200 or POLS 136* or PSYC 140 or ECON 211 or ECON 210 or Foreign Language	Foundations of Western Civilization or Modern Western Civilization* or World Geography or Intro to Philosophy or Intro to Critical Thinking or Logic or Intro to US National Politics* or General Psychology or Microeconomics or 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.
Humanities, Arts, and Social Sciences Select 3 hours.				
ENGL 102 or ENGL 215	Composition and Reading II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing
Electives	Maximum Free Electives	3	Electives	Maximum Free Electives
	Group 2 Major Requirements	50		Group 2 Major Requirements
	Group 1 Core Requirements	32		Group 1 Core Requirements
	Total Hours	82		Total Hours*
				72

*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

Metropolitan Community Colleges			Semester	Missouri S&T		
ENGR 113	Engineering Design Microcomputer Applications	3	MECH ENG 1720	Intro to Engineering Design	3	
COMM 100	Fundamentals of Speech	3	SPMS 1185	Principles of Speech Applies to degree as Gen Ed Communication requirement.	3	
CHEM 111	General College Chemistry I	5	CHEM 1310*, 1319	General Chemistry I and Lab *CHEM 1310 will be substituted for CHEM 1305.	5	
CSIS 271 or CSIS 223	Data Structures and Algorithm Analysis or Object-Oriented Programming with C++	3	COMP SCI 1500 or COMP SCI 1971,1981*	Computational Problem Solving (3) or Intro to Programming Methodology and Lab*(C++) (3) *Will be substituted for COMP SCI 1500.	3	
ENGR 229 and ENGR 230	Statics (3) and Dynamics (3)	4	CIV ENG 2200 and MECH ENG 2350	Engineering Mechanics-Statics (3) and Engineering Mechanics-Dynamics (3)	3	
BOTH of the courses above or ONE of the following courses will satisfy a required engineering science elective. OR			BOTH of the courses above or ONE of the following courses will satisfy a required engineering science elective. OR			
ENGR 223 or CHEM 221 or BIOL 214	Thermodynamics and Heat Transfer (4) or Organic Chemistry I (5) or Principles of Genetics (4)		MECH ENG 2519 or CHEM 2210 or BIO SCI 2223	Thermodynamics (3) or Organic Chemistry I (4) or General Genetics (3)		
ENGR 233, 234	Circuit Analysis I (4) and Lab (1)		ELEC ENG 2100*, 2101	Circuits I* (3) and Circuit Analysis Lab (1) *A passing grade on the Missouri S&T ELEC ENG 2100 final exam is required to receive credit for ELEC ENG 2100.		4
ENGR 215	Engineering Statistics and Computation	3	STAT 3115	Engineering Statistics Will be substituted for STAT 3117.	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.						
ENGL 220 or ENGL 221 or ENGL 222 or ENGL 223 or ENGL 254 or HIST 120* or HIST 121* or ART 108 or MUSI 108 or SPDR 106 or Literature	British Literature to 1750 or British Literature 1750-Present or American Literature to 1860 or American Literature 1860-Present or World Literature I or United States History to 1865* or United States History since 1865* or Survey of Art or Music Appreciation or Theatre Appreciation 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 ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	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 Art Appreciation or Music Appreciation or Theatre via Video 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 133 or HIST 134* or GEOG 105 or PHIL 100 or PHIL 103 or PHIL 200 or POLS 136* or PSYC 140 or ECON 211 or ECON 210 or Foreign Language	Foundations of Western Civilization or Modern Western Civilization* or World Geography or Intro to Philosophy or Intro to Critical Thinking or Logic or Intro to US National Politics* or General Psychology or Microeconomics or 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.						
ENGL 102 or ENGL 215	Composition and Reading II or Technical Writing	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	50		Group 2 Major Requirements	48	
	Group 1 Core Requirements	32		Group 1 Core Requirements	27	
	Total Hours	82		Total Hours*	75	
				*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

Metropolitan Community Colleges			Semester	Missouri S&T		
ENGR 113	Engineering Design Microcomputer Applications	3	MECH ENG 1720	Intro to Engineering Design	3	
COMM 100	Fundamentals of Speech		SPMS 1185	Principles of Speech	3	
CHEM 111	General College Chemistry I	5	CHEM 1310, 1319	General Chemistry I and Lab	5	
CSIS 223 or	Object-Oriented Programming with C++ or		COMP SCI 1971, 1981 or	Intro to Programming Method and Lab (C++) (3) or		
ENGR 204	Programming for Engineers and Scientists	3	COMP SCI 1972, 1982	Intro to MATLAB Programming and Lab (3)	3	
ENGR 233	Circuit Analysis I	4	ELEC ENG 2800	Electrical Circuits	3	
ENGR 229	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3	
ENGR 230	Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2	
ENGR 223	Thermodynamics and Heat Transfer	4	MECH ENG 2527	Thermal Analysis	3	
ENGR 240	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	3	
ENGR 215	Engineering Statistics and Computation	3	STAT 3115	Engineering Statistics	3	
				Will be substituted for STAT 3117.		
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.						
ENGL 220 or	British Literature to 1750 or		ENGLISH 1211 or	British Literature I: The Beginnings to 1800 or		
ENGL 221 or	British Literature 1750-Present or		ENGLISH 1212 or	British Literature II: 1800 to Present		
ENGL 222 or	American Literature to 1860 or		ENGLISH 1221 or	American Literature: 1600 to 1865 or		
ENGL 223 or	American Literature 1860-Present or		ENGLISH 1222 or	American Literature: 1865 to Present or		
ENGL 254 or	World Literature I or		ENGLISH 1231 or	World Literature I: Beginnings to the Renaissance or		
HIST 120* or	United States History to 1865* or		HISTORY 1300* or	American History to 1877* or		
HIST 121* or	United States History since 1865* or	6	HISTORY 1310* or	American History Since 1877* or	6	
ART 108 or	Survey of Art or		ART 1180 or	Art Appreciation or		
MUSI 108 or	Music Appreciation or		MUSIC 1150 or	Music Appreciation or		
SPDR 106 or	Theatre Appreciation or		THEATRE 1190 or	Theatre via Video or		
Literature	Any literature with prerequisite of no more than English Composition I.		Literature	Any literature with prerequisite of no more than ENGLISH 1120.		
	*Satisfies the State of Missouri government requirement.			*Satisfies the State of Missouri government requirement.		
Behavioral and Social Sciences						
Select 6 hours from at least two specific disciplines to include PSYCH 1101.						
PSYC 140	General Psychology	3	PSYCH 1101	General Psychology Required	3	
HIST 133 or	Foundations of Western Civilization or		HISTORY 1100 or	Early Western Civilization or		
HIST 134* or	Modern Western Civilization* or		HISTORY 1200* or	Modern Western Civilization* or		
GEOG 105 or	World Geography or		HISTORY 2110 or	World Regional Geography or		
PHIL 100 or	Intro to Philosophy or		PHILOS 1105 or	Self and World: Intro to Philosophy or		
PHIL 103 or	Intro to Critical Thinking or		PHILOS 1115 or	Logic and Reasoning: An Introduction or		
PHIL 200 or	Logic or	3	POL SCI 1200* or	American Government* or	3	
POLS 136* or	Intro to US National Politics* or		ECON 1100 or	Principles of Microeconomics or		
ECON 211 or	Microeconomics or		ECON 1200 or	Principles of Macroeconomics or		
ECON 210 or	Macroeconomics or		Foreign Language	Elementary or Intermediate Foreign Language		
Foreign Language	Elementary or Intermediate Foreign Language			*Satisfies the State of Missouri government requirement.		
	*Satisfies the State of Missouri government requirement.					
Humanities, Arts, and Social Sciences						
Select 3 hours.						
ENGL 102 or	Composition and Reading II or		ENGLISH 1160 or	Writing and Research or		
ENGL 215	Technical Writing	3	ENGLISH 3560	Technical Writing	3	
No free electives applied to the degree.						
	Group 2 Major Requirements	0	Electives	Maximum Free Electives	0	
	Group 2 Major Requirements	49		Group 2 Major Requirements	49	
	Group 1 Core Requirements	32		Group 1 Core Requirements	27	
	Total Hours	81		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

Metropolitan Community Colleges			Semester	Missouri S&T				
ENGR 113	Engineering Design Microcomputer Applications	3		MECH ENG 1720	Intro to Engineering Design	3		
ENGL 102 or ENGL 215 or COMM 100 or	Composition and Reading II or Technical Writing or Fundamentals of Speech	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		
GEO 101	Physical Geology	5		GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3		
CHEM 111	General College Chemistry I	5		CHEM 1310, 1319	General Chemistry I and Lab	5		
CHEM 112	General College 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		
BIOL 101 or BIOL 123	General Biology (5) or General Biology for Majors I (4) or	4		BIO SCI 1113, 1219* or BIO SCI 1213*, 1219	General Biology (3) and Lab* (1) or Principles of Biology* and Lab *The lab is not a degree requirement, transfers as general elective credit.	3		
ENGR 229	Statics	3		CIV ENG 2200	Engineering Mechanics-Statics	3		
ENGR 230	Dynamics	3		MECH ENG 2350	Engineering Mechanics-Dynamics	2		
ENGR 240	Mechanics of Materials	3		CIV ENG 2210	Mechanics of Materials	3		
ENGR 215	Engineering Statistics and Computation	3		STAT 3115	Engineering Statistics Will be substituted for STAT 3113.	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, 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.								
ENGL 220 or ENGL 221 or ENGL 222 or ENGL 223 or ENGL 254 or HIST 120* or HIST 121* or ART 108 or MUSI 108 or SPDR 106 or Literature	British Literature to 1750 or British Literature 1750-Present or American Literature to 1860 or American Literature 1860-Present or World Literature I or United States History to 1865* or United States History since 1865* or Survey of Art or Music Appreciation or Theatre Appreciation 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 ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	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 Art Appreciation or Music Appreciation or Theatre via Video 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 134* or PHIL 100 or PHIL 103 or PHIL 200 or PSYC 140 or ECON 211 or ECON 210 or Foreign Language	Modern Western Civilization* or Intro to Philosophy or Intro to Critical Thinking or Logic or General Psychology or Microeconomics or Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement and a degree-specific gen ed 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		
<i>No free electives applied to the degree.</i>			0	Maximum Free Electives			0	
Group 2 Major Requirements			49	Group 2 Major Requirements			43	
Group 1 Core Requirements			32	Group 1 Core Requirements			27	
Total Hours			81				Total Hours*	70
*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

Metropolitan Community Colleges			Semester	Missouri S&T	
ENGR 113	Engineering Design Microcomputer Applications	3	MECH ENG 1720	Intro to Engineering Design	3
ENGL 215	Technical Writing	3	ENGLISH 3560	Technical Writing Applies to degree as Gen Ed Communication requirement.	3
CHEM 111	General College Chemistry I	5	CHEM 1310*, 1319	General Chemistry I and Lab *CHEM 1310 will be substituted for CHEM 1305.	5
GEO 101	Physical Geology	5	GEO ENG 1150 (GEOLOGY 1110)	Physical and Environmental Geology	3
ENGR 229	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
ENGR 230	Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
ENGR 240	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	3
ENGR 215	Engineering Statistics and Computation	3	STAT 3115	Engineering Statistics Will be substituted for STAT 3113.	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.					
ENGL 220 or ENGL 221 or ENGL 222 or ENGL 223 or ENGL 254 or HIST 120* or HIST 121* or ART 108 or MUSI 108 or SPDR 106 or Literature	British Literature to 1750 or British Literature 1750-Present or American Literature to 1860 or American Literature 1860-Present or World Literature I or United States History to 1865* or United States History since 1865* or Survey of Art or Music Appreciation or Theatre Appreciation 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 ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	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 Art Appreciation or Music Appreciation or Theatre via Video 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 133 or HIST 134* or GEOG 105 or PHIL 100 or PHIL 103 or PHIL 200 or POLS 136* or PSYC 140 or ECON 211 or ECON 210 or Foreign Language	Foundations of Western Civilization or Modern Western Civilization* or World Geography or Intro to Philosophy or Intro to Critical Thinking or Logic or Intro to US National Politics* or General Psychology or Microeconomics or 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		43	Group 2 Major Requirements		40
Group 1 Core Requirements		32	Group 1 Core Requirements		27
Total Hours		75			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

Metropolitan Community Colleges			Semester	Missouri S&T		
ENGR 113	Engineering Design Microcomputer Applications	3		MECH ENG 1720	Intro to Engineering Design	3
ENGL 102 or ENGL 215 or COMM 100 or	Composition and Reading II or Technical Writing or Fundamentals of Speech	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 111	General College Chemistry I	5		CHEM 1310*, 1319	General Chemistry I and Lab *CHEM 1310 will be substituted for CHEM 1305.	5
CSIS 223 or ENGR 204	Object-Oriented Programming with C++ or Programming for Engineers and Scientists	3		COMP SCI 1971, 1981 or COMP SCI 1972, 1982	Intro to Programming Method and Lab (C++) (3) or Intro to MATLAB Programming and Lab (3)	3
ENGR 233	Circuit Analysis I	4		ELEC ENG 2800	Electrical Circuits	3
ENGR 229	Statics	3		CIV ENG 2200	Engineering Mechanics-Statics	3
ENGR 230	Dynamics	3		MECH ENG 2360	Dynamics	3
ENGR 223	Thermodynamics and Heat Transfer	4		MECH ENG 2519	Thermodynamics	3
ENGR 240	Mechanics of Materials	3		CIV ENG 2210	Mechanics of Materials	3
ENGR 215	Engineering Statistics and Computation	3		STAT 3115*	Engineering Statistics* Satisfies the Advanced Math/Comp Sci elective requirement. *STAT 3115 will be substituted for STAT 3113. pending approval.	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.						
ENGL 220 or ENGL 221 or ENGL 222 or ENGL 223 or ENGL 254 or HIST 120* or HIST 121* or ART 108 or MUSI 108 or SPDR 106 or Literature	British Literature to 1750 or British Literature 1750-Present or American Literature to 1860 or American Literature 1860-Present or World Literature I or United States History to 1865* or United States History since 1865* or Survey of Art or Music Appreciation or Theatre Appreciation 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 ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	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 Art Appreciation or Music Appreciation or Theatre via Video 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 133 or HIST 134* or GEOG 105 or PHIL 100 or PHIL 103 or PHIL 200 or POLS 136* or PSYC 140 or ECON 211 or ECON 210 or Foreign Language	Foundations of Western Civilization or Modern Western Civilization* or World Geography or Intro to Philosophy or Intro to Critical Thinking or Logic or Intro to US National Politics* or General Psychology or Microeconomics or 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 PSYC 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		52		Group 2 Major Requirements		50
Group 1 Core Requirements		32		Group 1 Core Requirements		27
Total Hours		84		Total Hours*		77
*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

Metropolitan Community Colleges			Semester	Missouri S&T	
ENGR 113	Engineering Design Microcomputer Applications	3	MECH ENG 1720	Intro to Engineering Design	3
ENGL 102 or ENGL 215 or COMM 100 or	Composition and Reading II or Technical Writing or Fundamentals of Speech	3	ENGLISH 1160 or ENGLISH 3560 or SPMS 1185	Writing and Research or Technical Writing or Principles of Speech <i>Applies to degree as Gen Ed Communication requirement.</i>	3
CSIS 271 or CSIS 223 or ENGR 204	Data Structures and Algorithm Analysis or Object-Oriented Programming with C++ or Programming for Engineers and Scientists	3	COMP SCI 1500 or COMP SCI 1971,1981* or COMP SCI 1972, 1982*	Computational Problem Solving (3) or Intro to Programming Methodology and Lab* (C++) (3) or Intro to MATLAB Programming and Lab* (3) <i>*Will be substituted for COMP SCI 1500.</i>	3
ENGR 215	Engineering Statistics and Computation	3	STAT 3115	Engineering Statistics <i>Will be substituted for STAT 3113.</i>	3
ENGR 229	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
ENGR 240	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	3
CHEM 111	General College Chemistry I	5	CHEM 1310, 1319	General Chemistry I and Lab	5
CHEM 112	General College Chemistry II	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <i>*CHEM 1510 is not a degree requirement, transfers as general elective credit.</i>	3
CHEM 221 or ENGR 233	Organic Chemistry 1 or Circuit Analysis I	4	CHEM 2210 or ELEC ENG 2800	Organic Chemistry I (3) or Electrical Circuits (3) <i>Not specifically required for the degree but satisfies out-of-department technical elective requirement</i>	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.					
ENGL 220 or ENGL 221 or ENGL 222 or ENGL 223 or ENGL 254 or HIST 120* or HIST 121* or ART 108 or MUSI 108 or SPDR 106 or Literature	British Literature to 1750 or British Literature 1750-Present or American Literature to 1860 or American Literature 1860-Present or World Literature I or United States History to 1865* or United States History since 1865* or Survey of Art or Music Appreciation or Theatre Appreciation or Any literature with prerequisite of no more than English Composition I. <i>*Satisfies the State of Missouri government requirement.</i>	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	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 Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. <i>*Satisfies the State of Missouri government requirement.</i>	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
HIST 133 or HIST 134* or GEOG 105 or PHIL 100 or PHIL 103 or PHIL 200 or POLS 136* or PSYC 140 or ECON 211 or ECON 210 or Foreign Language	Foundations of Western Civilization or Modern Western Civilization* or World Geography or Intro to Philosophy or Intro to Critical Thinking or Logic or Intro to US National Politics* or General Psychology or Microeconomics or Macroeconomics or Elementary or Intermediate Foreign Language <i>*Satisfies the State of Missouri government requirement.</i>	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 <i>*Satisfies the State of Missouri government requirement.</i>	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
<i>No free electives applied to the degree.</i>		3	Maximum Free Electives		0
Group 2 Major Requirements		53	Group 2 Major Requirements		47
Group 1 Core Requirements		32	Group 1 Core Requirements		27
Total Hours		85	Total Hours*		68
<i>*S&T advisor permission is required to transfer more than 68 credits toward the S&T Metallurgical Engineering degree.</i>					

Mining Engineering Group 2 Major Requirements

Metropolitan Community Colleges			Semester	Missouri S&T		
ENGR 113	Engineering Design Microcomputer Applications	3	MECH ENG 1720	Intro to Engineering Design	3	
ENGL 102 or ENGL 215 or COMM 100 or	Composition and Reading II or Technical Writing or Fundamentals of Speech	3	ENGLISH 1160 or ENGLISH 3560 or SPMS 1185	Writing and Research or Technical Writing or Principles of Speech <i>Applies to degree as Gen Ed Communication requirement.</i>	3	
ENGR 215	Engineering Statistics and Computation	3	STAT 3115	Engineering Statistics <i>Will be substituted for STAT 3113.</i>	3	
CHEM 111	General College Chemistry I	5	CHEM 1310, 1319	General Chemistry I and Lab	5	
ENGR 229	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3	
ENGR 230	Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2	
ENGR 223	Thermodynamics and Heat Transfer	4	MECH ENG 2527	Thermal Analysis	3	
ENGR 240	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	3	
GEO 101	Physical Geology	5	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.						
ENGL 220 or ENGL 221 or ENGL 222 or ENGL 223 or ENGL 254 or HIST 120* or HIST 121* or ART 108 or MUSI 108 or SPDR 106 or Literature	British Literature 1750 or British Literature 1750-Present or American Literature to 1860 or American Literature 1860-Present or World Literature I or United States History to 1865* or United States History since 1865* or Survey of Art or Music Appreciation or Theatre Appreciation or Any literature with prerequisite of no more than English Composition I. <i>*Satisfies the State of Missouri government requirement.</i>	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	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 Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. <i>*Satisfies the State of Missouri government requirement.</i>	6	
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.						
HIST 133 or HIST 134* or GEOG 105 or PHIL 100 or PHIL 103 or PHIL 200 or POLS 136* or PSYC 140 or ECON 211 or ECON 210 or Foreign Language	Foundations of Western Civilization or Modern Western Civilization* or World Geography or Intro to Philosophy or Intro to Critical Thinking or Logic or Intro to US National Politics* or General Psychology or Microeconomics or Macroeconomics or Elementary or Intermediate Foreign Language <i>*Satisfies the State of Missouri government requirement.</i>	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 <i>*Satisfies the State of Missouri government requirement.</i>	6	
No free electives applied to the degree.		0	Maximum Free Electives		0	
Group 2 Major Requirements		44	Group 2 Major Requirements		40	
Group 1 Core Requirements		32	Group 1 Core Requirements		27	
Total Hours		76			Total Hours*	67
<i>*S&T advisor permission is required to transfer more than 68 credits toward the S&T Mining Engineering degree.</i>						

Nuclear Engineering Group 2 Major Requirements

Metropolitan Community Colleges			Semester	Missouri S&T		
ENGR 113	Engineering Design Microcomputer Applications	3	MECH ENG 1720	Intro to Engineering Design	3	
ENGL 102 or ENGL 215 or COMM 100 or	Composition and Reading II or Technical Writing or Fundamentals of Speech	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 111	General College Chemistry I	5	CHEM 1310, 1319	General Chemistry I and Lab	5	
CSIS 223 or ENGR 204	Object-Oriented Programming with C++ or Programming for Engineers and Scientists	3	COMP SCI 1971, 1981 or COMP SCI 1972, 1982	Intro to Programming Method and Lab (C++) (3) or Intro to MATLAB Programming and Lab (3)	3	
ENGR 229	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3	
ENGR 240	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	3	
ENGR 215	Engineering Statistics and Computation	3	STAT 3115	Engineering Statistics Will be substituted for the statistics requirement.	3	
ENGR 233	Circuit Analysis I	4	ELEC ENG 2800	Electrical Circuits	3	
ENGR 223	Thermodynamics and Heat Transfer	4	MECH ENG 2519	Thermodynamics	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.						
ENGL 220 or ENGL 221 or ENGL 222 or ENGL 223 or ENGL 254 or HIST 120* or HIST 121* or ART 108 or MUSI 108 or SPDR 106 or Literature	British Literature to 1750 or British Literature 1750-Present or American Literature to 1860 or American Literature 1860-Present or World Literature I or United States History to 1865* or United States History since 1865* or Survey of Art or Music Appreciation or Theatre Appreciation 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 ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	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 Art Appreciation or Music Appreciation or Theatre via Video 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 211 or ECON 210	Microeconomics or Macroeconomics	3	ECON 1100 or ECON 1200	Principles of Microeconomics or Principles of Macroeconomics	3	
HIST 133 or HIST 134* or GEOG 105 or PHIL 100 or PHIL 103 or PHIL 200 or POLS 136* or PSYC 140 or Foreign Language	Foundations of Western Civilization or Modern Western Civilization* or World Geography or Intro to Philosophy or Intro to Critical Thinking or Logic or Intro to US National Politics* 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		49	Group 2 Major Requirements		47	
Group 1 Core Requirements		32	Group 1 Core Requirements		27	
Total Hours		81			Total Hours*	74
*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

Metropolitan Community Colleges		Semester	Missouri S&T		
ENGL 102 or ENGL 215 or COMM 100 or	Composition and Reading II or Technical Writing or Fundamentals of Speech	3	ENGLISH 3560 or ENGLISH 1160 or ENGLISH 1600	Technical Writing (preferred) or Writing and Research or Intro to Technical Communications <i>Applies to degree as Gen Ed Communications requirement.</i>	3
CHEM 111	General College Chemistry I	5	CHEM 1310*, 1319	General Chemistry I and Lab <i>*CHEM 1310 will be substituted for CHEM 1305.</i>	5
CSIS 271	Data Structures and Algorithm Analysis	3	COMP SCI 1500	Computational Problem Solving	3
ENGR 204	Programming for Engineers and Scientists	3	COMP SCI 1972, 1982	Intro to MATLAB Programming and Lab	3
GEO 101	Physical Geology	5	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
ENGR 229	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
ENGR 230	Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
ENGR 240	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	3
		4	MECH ENG 2527 or MECH ENG 2519*	Thermal Analysis or Thermodynamics* <i>*Will be substituted for MECH ENG 2527.</i>	3
ENGR 223	Thermodynamics and Heat Transfer				
ENGR 215	Engineering Statistics and Computation	3	STAT 3115	Engineering Statistics <i>Will be substituted for the statistics requirement.</i>	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.					
ENGL 220 or ENGL 221 or ENGL 222 or ENGL 223 or ENGL 254 or HIST 120* or HIST 121* or ART 108 or MUSI 108 or SPDR 106 or Literature	British Literature to 1750 or British Literature 1750-Present or American Literature to 1860 or American Literature 1860-Present or World Literature I or United States History to 1865* or United States History since 1865* or Survey of Art or Music Appreciation or Theatre Appreciation or Any literature with prerequisite of no more than English Composition I. <i>*Satisfies the State of Missouri government requirement.</i>	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	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 Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. <i>*Satisfies the State of Missouri government requirement.</i>	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
HIST 133 or HIST 134* or GEOG 105 or PHIL 100 or PHIL 103 or PHIL 200 or POLS 136* or PSYC 140 or ECON 211 or ECON 210 or Foreign Language	Foundations of Western Civilization or Modern Western Civilization* or World Geography or Intro to Philosophy or Intro to Critical Thinking or Logic or Intro to US National Politics* or General Psychology or Microeconomics or Macroeconomics or Elementary or Intermediate Foreign Language <i>*Satisfies the State of Missouri government requirement.</i>	6	HISTORY 1100 or HISTORY 1200* or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or POL SCI 1200* or PSYC 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 <i>*Satisfies the State of Missouri government requirement.</i>	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		50	Group 2 Major Requirements		46
Group 1 Core Requirements		32	Group 1 Core Requirements		27
Total Hours		82	Total Hours*		73
<i>*S&T advisor permission is required to transfer more than 69 credits toward the S&T Petroleum Engineering degree.</i>					

Semiconductor Engineering-Device Engineering Emphasis Group 2 Major Requirements

Metropolitan Community Colleges		Semester	Missouri S&T			
ENGR 113	Engineering Design Microcomputer Applications	3	MECH ENG 1720	Intro to Engineering Design	3	
ENGL 102 or ENGL 215 or COMM 100 or	Composition and Reading II or Technical Writing or Fundamentals of Speech	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 111	General College Chemistry I	5	CHEM 1310, 1319	General Chemistry I and Lab	5	
CHEM 112	General College 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	
ENGR 233, 234	Circuit Analysis I (4) and Lab (1)	5	ELEC ENG 2100*, 2101	Circuits I* (3) and Circuit Analysis Lab (1) *A passing grade on the Missouri S&T ELEC ENG 2100 final exam is required to receive credit for ELEC ENG 2100.	4	
ENGR 215	Engineering Statistics and Computation	3	STAT 3115	Engineering Statistics Will be substituted for STAT 3117.	3	
CSIS 271 or CSIS 223	Data Structures and Algorithm Analysis or Object-Oriented Programming with C++	3	COMP SCI 1500 or COMP SCI 1971,1981*	Computational Problem Solving (3) or Intro to Programming Methodology and Lab* (C++) (3) *Will be substituted for COMP SCI 1500.	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.						
ENGL 220 or ENGL 221 or ENGL 222 or ENGL 223 or ENGL 254 or HIST 120* or HIST 121* or ART 108 or MUSI 108 or SPDR 106 or Literature	British Literature to 1750 or British Literature 1750-Present or American Literature to 1860 or American Literature 1860-Present or World Literature I or United States History to 1865* or United States History since 1865* or Survey of Art or Music Appreciation or Theatre Appreciation 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 ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	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 Art Appreciation or Music Appreciation or Theatre via Video 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 133 or HIST 134* or GEOG 105 or PHIL 100 or PHIL 103 or PHIL 200 or POLS 136* or PSYC 140 or ECON 211 or ECON 210 or Foreign Language	Foundations of Western Civilization or Modern Western Civilization* or World Geography or Intro to Philosophy or Intro to Critical Thinking or Logic or Intro to US National Politics* or General Psychology or Microeconomics or 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		48	Group 2 Major Requirements		45	
Group 1 Core Requirements		32	Group 1 Core Requirements		27	
Total Hours		80			Total Hours*	72
*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

Metropolitan Community Colleges			Semester	Missouri S&T	
ENGR 113	Engineering Design Microcomputer Applications	3	MECH ENG 1720	Intro to Engineering Design	3
ENGL 102 or ENGL 215 or COMM 100 or	Composition and Reading II or Technical Writing or Fundamentals of Speech	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 111	General College Chemistry I	5	CHEM 1310, 1319	General Chemistry I and Lab	5
CHEM 112	General College 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
ENGR 233, 234	Circuit Analysis I (4) and Lab (1)	5	ELEC ENG 2100*, 2101	Circuits I* (3) and Circuit Analysis Lab (1) *A passing grade on the Missouri S&T ELEC ENG 2100 final exam is required to receive credit for ELEC ENG 2100.	4
ENGR 215	Engineering Statistics and Computation	3	STAT 3115	Engineering Statistics Will be substituted for STAT 3113.	3
CSIS 271 or CSIS 223 or ENGR 204	Data Structures and Algorithm Analysis or Object-Oriented Programming with C++ or Programming for Engineers and Scientists	3	COMP SCI 1500 or COMP SCI 1971,1981* or COMP SCI 1972, 1982*	Computational Problem Solving (3) or Intro to Programming Methodology and Lab*(C++) (3) or Intro to MATLAB Programming and Lab* (3) *Will be substituted for COMP SCI 1500.	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.					
ENGL 220 or ENGL 221 or ENGL 222 or ENGL 223 or ENGL 254 or HIST 120* or HIST 121* or ART 108 or MUSI 108 or SPDR 106 or Literature	British Literature to 1750 or British Literature 1750-Present or American Literature to 1860 or American Literature 1860-Present or World Literature I or United States History to 1865* or United States History since 1865* or Survey of Art or Music Appreciation or Theatre Appreciation 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 ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	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 Art Appreciation or Music Appreciation or Theatre via Video 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 133 or HIST 134* or GEOG 105 or PHIL 100 or PHIL 103 or PHIL 200 or POLS 136* or PSYC 140 or ECON 211 or ECON 210 or Foreign Language	Foundations of Western Civilization or Modern Western Civilization* or World Geography or Intro to Philosophy or Intro to Critical Thinking or Logic or Intro to US National Politics* or General Psychology or Microeconomics or 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		48	Group 2 Major Requirements		45
Group 1 Core Requirements		32	Group 1 Core Requirements		27
Total Hours		80	Total Hours*		72
*S&T advisor permission is required to transfer more than 68 credits toward the S&T Ceramic Engineering degree.					

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