

Joliet Junior College — Missouri S&T

General Engineering Transfer Guide

Effective as of Fall 2020

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

Group 1 - Core Requirements: All Majors Take All Courses

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

| <u>Joliet Junior College</u> | | | <u>Semester</u> | <u>Missouri S&T</u> | | | |
|------------------------------|---|---|-----------------|-------------------------|--|---|----|
| EGR 105 | Intro to Engineering | 2 | | FR ENG 1100 | Study and Careers in Engineering and Computing | 1 | |
| MATH 170 | Calculus with Analytic Geometry I | 5 | | MATH 1214 | Calculus for Engineers I <small>Grade of C or better is required.</small> | 4 | |
| MATH 171 | Calculus with Analytic Geometry II | 4 | | MATH 1215 | Calculus for Engineers II <small>Grade of C or better is required.</small> | 4 | |
| | | | | MATH 2222 | Calculus with Analytic Geometry III <small>Grade of C or better is required.</small> | 4 | |
| MATH 172 | Calculus with Analytic Geometry III | 4 | | | | | |
| MATH 220 | Differential Equations and Orthogonal Functions | 3 | | MATH 3304 | Elementary Differential Equations | 3 | |
| PHYS 201 | Engineering Physics I | 5 | | PHYSICS 1135 | Engineering Physics I <small>Grade of C or better is required.</small> | 4 | |
| PHYS 202 | Engineering Physics II | 5 | | PHYSICS 2135 | Engineering Physics II <small>Grade of C or better is required.</small> | 4 | |
| CHEM 101 | General Chemistry | 5 | | CHEM 1310, 1319 | General Chemistry I and Lab | 5 | |
| ENG 101 | Rhetoric | 3 | | ENGLISH 1120 | Exposition and Argumentation | 3 | |
| ECON 104 or | Principles of Economics II (Microeconomics) or | 3 | | ECON 1100 or | Principles of Microeconomics or | 3 | |
| ECON 103 | Principles of Economics I (Macroeconomics) | 3 | | ECON 1200 | Principles of Macroeconomics | 3 | |
| Total Hours | | | 39 | Total Hours | | | 35 |

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

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

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

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

Engineering Major Requirements are detailed on the following pages.

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

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

Aerospace Engineering Group 2 Major Requirements

| <u>Joliet Junior College</u> | | <u>Semester</u> | <u>Missouri S&T</u> | | |
|---|--|-----------------|---|--|----|
| HIST 103 or HIST 104 or HIST 106 or PSCI 101 | History of the US to 1865 or History of the US, 1865 to Present or History of Civilization II or American National Government | 3 | HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200 | American History to 1877 or American History since 1877 or Modern Western Civilization or American Government | 3 |
| ENG 102 or COMM 101 or ENG 130 | Rhetoric or Principles of Communication or Technical Writing and Communication | 3 | ENGLISH 1160 or SPMS 1185 or ENGLISH 3560 | Writing and Research or Principles of Speech or Technical Writing | 3 |
| EGR 220 | Electrical Circuit Analysis | 4 | EE 2800 | Circuit Analysis I | 3 |
| EGR 201 | Analytical Mechanics-Statics | 3 | CIV ENG 2200 | Engineering Mechanics-Statics | 3 |
| EGR 203 | Mechanics: Strength of Materials | 3 | CIV ENG 2210 | Mechanics of Materials | 3 |
| MATH 210 | Linear Algebra | 3 | MATH 3108 | Linear Algebra I (Will satisfy the Advanced Math/Comp Sci elective requirement.) | 3 |
| | Literature Elective | 3 | | Literature Elective | 3 |
| | Ethics Elective | 3 | | Ethics Elective | 3 |
| | <i>No free electives applied to the degree.</i> | 0 | | Maximum Free Electives | 0 |
| | Group 2 Major Requirements | 31 | | Group 2 Major Requirements | 30 |
| | Group 1 Core Requirements | 39 | | Group 1 Core Requirements | 35 |
| | Total Hours | 70 | | Total Hours* | 65 |

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

Architectural Engineering Group 2 Major Requirements

| <u>Joliet Junior College</u> | | <u>Semester</u> | <u>Missouri S&T</u> | | |
|---|---|-----------------|---|---|----|
| HIST 106 (or HIST 103 or HIST 104) | History of Civilization II (History of the US to 1865 or History of the US, 1865 to Present) | 3 | HISTORY 1200* (or HISTORY 1300 or HISTORY 1310) | Modern Western Civilization* (or American History to 1877 or American History since 1877) <small>*HISTORY 1200 is preferred; 1300 or 1310 will also be accepted.</small> | 3 |
| GEOL 101 | Principles of Physical Geology | 4 | GEOLOGY 1110 (GEO ENG 1150) | Physical and Environmental Geology | 3 |
| EGR 201 | Analytical Mechanics-Statics | 3 | CIV ENG 2200 | Engineering Mechanics-Statics | 3 |
| EGR 202 | Analytical Mechanics-Dynamics | 3 | MECH ENG 2350 | Engineering Mechanics-Dynamics | 3 |
| EGR 203 | Mechanics: Strength of Materials | 3 | CIV ENG 2210 | Mechanics of Materials | 3 |
| ENG 102 or COMM 101 or HSS Elective | Rhetoric or Principles of Communication or Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language | 3 | ENGLISH 1160 or SPMS 1185 or HSS Elective | Writing and Research or Public Speaking or Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language | 3 |
| | <i>No free electives applied to the degree.</i> | 0 | | Maximum Free Electives | 0 |
| | Group 2 Major Requirements | 22 | | Group 2 Major Requirements | 21 |
| | Group 1 Core Requirements | 39 | | Group 1 Core Requirements | 35 |
| | Total Hours | 61 | | Total Hours* | 56 |

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

Ceramic Engineering Group 2 Major Requirements

| Joliet Junior College | | Semester | Missouri S&T | | |
|---|---|----------|---|---|----|
| HIST 103 or HIST 104 or HIST 106 or PSCI 101 | History of the US to 1865 or History of the US, 1865 to Present or History of Civilization II or American National Government | 3 | HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200 | American History to 1877 or American History since 1877 or Modern Western Civilization or American Government | 3 |
| EGR 201 | Analytical Mechanics-Statics | 3 | CIV ENG 2200 | Engineering Mechanics-Statics | 3 |
| EGR 203 | Mechanics: Strength of Materials | 3 | CIV ENG 2210 | Mechanics of Materials | 3 |
| CHEM 209 | Organic Chemistry I | 5 | CHEM 2210 | Organic Chemistry I (Not a specific requirement. Will satisfy the advanced chemistry elective requirement.) | 3 |
| CHEM 102 | General Chemistry II | 5 | CHEM 1320 | General Chemistry II | 3 |
| PHYS 203 | Engineering Physics III | 3 | PHYS 2305 | Intro to Modern Physics | 3 |
| ENG 102 or COMM 101 or HSS Elective | Rhetoric or Principles of Communication or Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language | 3 | ENGLISH 1160 or SPMS 1185 or HSS Elective | Writing and Research or Public Speaking or Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language | 3 |
| | Humanities/Social Science Elective | 3 | | Humanities/Social Science Elective | 3 |
| | <i>No free electives applied to the degree.</i> | 0 | | Maximum Free Electives | 0 |
| | Group 2 Major Requirements | 28 | | Group 2 Major Requirements | 24 |
| | Group 1 Core Requirements | 39 | | Group 1 Core Requirements | 35 |
| | Total Hours | 67 | | Total Hours* | 59 |

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

Chemical Engineering Group 2 Major Requirements

| Joliet Junior College | | Semester | Missouri S&T | | |
|---|--|----------|---|--|----|
| ENG 102 or ENG 130 | Rhetoric or Technical Writing and Communication | 3 | ENGLISH 1160 or ENGLISH 3560 | Writing and Research or Technical Writing | 3 |
| HIST 103 or HIST 104 or HIST 106 or PSCI 101 | History of the US to 1865 or History of the US, 1865 to Present or History of Civilization II or American National Government | 3 | HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200 | American History to 1877 or American History since 1877 or Modern Western Civilization or American Government | 3 |
| CHEM 102 | General Chemistry II | 5 | CHEM 1320 | General Chemistry II | 3 |
| CHEM 209 | Organic Chemistry I | 5 | CHEM 2210, 2219 | Organic Chemistry I and Lab | 4 |
| CHEM 210 | Organic Chemistry II or | | CHEM 2220 | Organic Chemistry II (Will satisfy science elective requirement.) | 3 |
| CIS 246 | Advanced C Using C++ | 4 | CS 1500 | Computational Problem Solving | 3 |
| COMM 101 | Principles of Communication | 3 | SP&MS 1185 | Principles of Speech | 3 |
| | Humanities/Social Science Elective | 3 | | Humanities/Social Science Elective | 3 |
| | <i>No free electives applied to the degree.</i> | 0 | | Maximum Free Electives | 0 |
| | Group 2 Major Requirements | 29 | | Group 2 Major Requirements | 28 |
| | Group 1 Core Requirements | 39 | | Group 1 Core Requirements | 35 |
| | Total Hours | 68 | | Total Hours* | 63 |

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

Chemical Engineering - Biochemical Engineering Emphasis Group 2 Major Requirements

| <u>Joliet Junior College</u> | | <u>Semester</u> | <u>Missouri S&T</u> | | |
|---|--|-----------------|---|--|----|
| ENG 102 or ENG 130 | Rhetoric or Technical Writing and Communication | 3 | ENGLISH 1160 or ENGLISH 3560 | Writing and Research or Technical Writing | 3 |
| HIST 103 or HIST 104 or HIST 106 or PSCI 101 | History of the US to 1865 or History of the US, 1865 to Present or History of Civilization II or American National Government | 3 | HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200 | American History to 1877 or American History since 1877 or Modern Western Civilization or American Government | 3 |
| CHEM 102 | General Chemistry II | 5 | CHEM 1320 | General Chemistry II | 3 |
| CHEM 209 | Organic Chemistry I | 5 | CHEM 2210, 2219 | Organic Chemistry I and Lab | 4 |
| CHEM 210 | Organic Chemistry II or | | CHEM 2220 | Organic Chemistry II (Will satisfy science elective requirement.) | 3 |
| CIS 246 | Advanced C Using C++ | 4 | CS 1500 | Computational Problem Solving | 3 |
| COMM 101 | Principles of Communication | 3 | SP&MS 1185 | Principles of Speech | 3 |
| | Humanities/Social Science Elective | 3 | | Humanities/Social Science Elective | 3 |
| | <i>No free electives applied to the degree.</i> | 0 | | Maximum Free Electives | 0 |
| | Group 2 Major Requirements | 29 | | Group 2 Major Requirements | 28 |
| | Group 1 Core Requirements | 39 | | Group 1 Core Requirements | 35 |
| | Total Hours | 68 | | Total Hours* | 63 |

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

Civil Engineering Group 2 Major Requirements

| <u>Joliet Junior College</u> | | <u>Semester</u> | <u>Missouri S&T</u> | | |
|---|--|-----------------|---|--|----|
| ENG 102 or COMM 101 or ENG 130 | Rhetoric or Principles of Communication or Technical Writing and Communication | 3 | ENGLISH 1160 or SPMS 1185 or ENGLISH 3560 | Writing and Research or Public Speaking or Technical Writing | 3 |
| HIST 103 or HIST 104 or HIST 106 or PSCI 101 | History of the US to 1865 or History of the US, 1865 to Present or History of Civilization II or American National Government | 3 | HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200 | American History to 1877 or American History since 1877 or Modern Western Civilization or American Government | 3 |
| GEOL 101 | Principles of Physical Geology | 4 | GEOLOGY 1110 (GEO ENG 1150) | Physical and Environmental Geology | 3 |
| EGR 201 | Analytical Mechanics-Statics | 3 | CIV ENG 2200 | Engineering Mechanics-Statics | 3 |
| EGR 202 | Analytical Mechanics-Dynamics | 3 | MECH ENG 2350 | Engineering Mechanics-Dynamics | 3 |
| EGR 203 | Mechanics: Strength of Materials | 3 | CIV ENG 2210 | Mechanics of Materials | 3 |
| | Humanities/Social Science Elective | 3 | | Humanities/Social Science Elective | 3 |
| | <i>No free electives applied to the degree.</i> | 0 | | Maximum Free Electives | 0 |
| | Group 2 Major Requirements | 22 | | Group 2 Major Requirements | 21 |
| | Group 1 Core Requirements | 39 | | Group 1 Core Requirements | 35 |
| | Total Hours | 61 | | Total Hours* | 56 |

*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>Joliet Junior College</u> | | <u>Semester</u> | <u>Missouri S&T</u> | | |
|---|--|-----------------|---|--|----|
| COMM 101 | Principles of Communication | 3 | SPMS 1185 | Public Speaking | 3 |
| ENG 102 or ENG 130 | Rhetoric or Technical Writing and Communication | 3 | ENGLISH 1160 or ENGLISH 3560 | Writing and Research or Technical Writing | 3 |
| HIST 103 or HIST 104 or HIST 106 or PSCI 101 | History of the US to 1865 or History of the US, 1865 to Present or History of Civilization II or American National Government | 3 | HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200 | American History to 1877 or American History since 1877 or Modern Western Civilization or American Government | 3 |
| CIS 246 | Advanced C Using C++ | 4 | CS 1500 | Computational Problem Solving | 3 |
| EGR 201 and EGR 202 (BOTH of the courses above or ONE of the courses below.) OR CHEM 209 | Analytical Mechanics-Statics (3) and Analytical Mechanics-Dynamics (3) (Both courses above combined or any one of the following courses will satisfy a required engineering science elective.) OR Organic Chemistry I (5) | 3 | CIV ENG 2200 and MECH ENG 2350 (BOTH of the courses above or ONE of the courses below.) OR CHEM 2210 | Engineering Mechanics-Statics (3) and Engineering Mechanics-Dynamics (3) (Both courses above combined or any one of the following courses will satisfy a required engineering science elective.) OR Organic Chemistry I (4) | 3 |
| EGR 220 | Electrical Circuit Analysis | 4 | EE 2100** | Circuits I **A passing grade on the Missouri S&T EE Advancement Exam I is required to receive credit for EE 2100. | 3 |
| MATH 210 | Linear Algebra | 3 | MATH 3108 | Linear Algebra (Will satisfy a required math elective.) | 3 |
| | Humanities/Social Science Elective | 3 | | Humanities/Social Science Elective | 3 |
| | <i>See your advisor for course options.</i> | 0 | | Maximum Free Electives | 3 |
| | Group 2 Major Requirements | 29 | | Group 2 Major Requirements | 30 |
| | Group 1 Core Requirements | 39 | | Group 1 Core Requirements | 35 |
| | Total Hours | 68 | | Total Hours* | 65 |

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

Electrical Engineering Group 2 Major Requirements

| <u>Joliet Junior College</u> | | <u>Semester</u> | <u>Missouri S&T</u> | | |
|---|--|-----------------|---|--|----|
| COMM 101 | Principles of Communication | 3 | SPMS 1185 | Public Speaking | 3 |
| ENG 102 or ENG 130 | Rhetoric or Technical Writing and Communication | 3 | ENGLISH 1160 or ENGLISH 3560 | Writing and Research or Technical Writing | 3 |
| HIST 103 or HIST 104 or HIST 106 or PSCI 101 | History of the US to 1865 or History of the US, 1865 to Present or History of Civilization II or American National Government | 3 | HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200 | American History to 1877 or American History since 1877 or Modern Western Civilization or American Government | 3 |
| CIS 246 | Advanced C Using C++ | 4 | CS 1500 | Computational Problem Solving | 3 |
| EGR 201 and EGR 202 (BOTH of the courses above or ONE of the courses below.) OR CHEM 209 | Analytical Mechanics-Statics (3) and Analytical Mechanics-Dynamics (3) (Both courses above combined or any one of the following courses will satisfy a required engineering science elective.) OR Organic Chemistry I (5) | 3 | CIV ENG 2200 and MECH ENG 2350 (BOTH of the courses above or ONE of the courses below.) OR CHEM 2210 | Engineering Mechanics-Statics (3) and Engineering Mechanics-Dynamics (3) (Both courses above combined or any one of the following courses will satisfy a required engineering science elective.) OR Organic Chemistry I (4) | 3 |
| EGR 220 | Electrical Circuit Analysis | 4 | EE 2100** | Circuits I **A passing grade on the Missouri S&T EE Advancement Exam I is required to receive credit for EE 2100. | 3 |
| MATH 210 | Linear Algebra | 3 | MATH 3108 | Linear Algebra | 3 |
| | Humanities/Social Science Elective | 3 | | Humanities/Social Science Elective | 3 |
| | <i>See your advisor for course options.</i> | 3 | | Maximum Free Electives | 3 |
| | Group 2 Major Requirements | 32 | | Group 2 Major Requirements | 30 |
| | Group 1 Core Requirements | 39 | | Group 1 Core Requirements | 35 |
| | Total Hours | 71 | | Total Hours* | 65 |

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

Engineering Management Group 2 Major Requirements

| <u>Joliet Junior College</u> | | <u>Semester</u> | <u>Missouri S&T</u> | | |
|---|--|-----------------|---|---|----|
| PSYC 101 | General Psychology | 3 | PSYCH 1101 | General Psychology | 3 |
| HIST 103 or HIST 104 or HIST 106 or | History of the US to 1865 or History of the US, 1865 to Present or History of Civilization II or | 3 | HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or | American History to 1877 or American History since 1877 or Modern Western Civilization or | 3 |
| PSCI 101 | American National Government | | POL SCI 1200 | American Government | |
| ENG 102 or COMM 101 or ENG 130 | Rhetoric or Principles of Communication or Technical Writing and Communication | 3 | ENGLISH 1160 or SPMS 1185 or ENGLISH 3560 | Writing and Research or Principles of Speech or Technical Writing | 3 |
| EGR 220 | Electrical Circuit Analysis | 4 | EE 2800 | Circuit Analysis I | 3 |
| EGR 201 | Analytical Mechanics-Statics | 3 | CIV ENG 2200 | Engineering Mechanics-Statics | 3 |
| EGR 202 | Analytical Mechanics-Dynamics | 3 | MECH ENG 2350 | Engineering Mechanics-Dynamics | 3 |
| EGR 203 | Mechanics: Strength of Materials | 3 | CIV ENG 2210 | Mechanics of Materials | 3 |
| | Humanities/Social Science Elective | 3 | | Humanities/Social Science Elective | 3 |
| | <i>See your advisor for course options.</i> | 3 | | Maximum Free Electives | 3 |
| | Group 2 Major Requirements | 31 | | Group 2 Major Requirements | 30 |
| | Group 1 Core Requirements | 39 | | Group 1 Core Requirements | 35 |
| | Total Hours | 70 | | Total Hours* | 65 |

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

Environmental Engineering Group 2 Major Requirements

| <u>Joliet Junior College</u> | | <u>Semester</u> | <u>Missouri S&T</u> | | |
|--|---|-----------------|--|--|----|
| ENG 102 or COMM 101 or ENG 130 | Rhetoric or Principles of Communication or Technical Writing and Communication | 3 | ENGLISH 1160 or SPMS 1185 or ENGLISH 3560 | Writing and Research or Public Speaking or Technical Writing | 3 |
| HIST 103 or HIST 104 or HIST 106 | History of the US to 1865 or History of the US, 1865 to Present or History of Civilization II | 3 | HISTORY 1300 or HISTORY 1310 or HISTORY 1200 | American History to 1877 or American History since 1877 or Modern Western Civilization | 3 |
| CHEM 102 | General Chemistry II | 5 | CHEM 1320 | General Chemistry II | 3 |
| BIO 151 | General Biology I | 5 | BIO SCI 1113 | General Biology | 4 |
| GEOL 101 | Principles of Physical Geology | 4 | GEOLOGY 1110 (GEO ENG 1150) | Physical and Environmental Geology | 3 |
| EGR 201 | Analytical Mechanics-Statics | 3 | CIV ENG 2200 | Engineering Mechanics-Statics | 3 |
| EGR 202 | Analytical Mechanics-Dynamics | 3 | MECH ENG 2350 | Engineering Mechanics-Dynamics | 3 |
| EGR 203 | Mechanics: Strength of Materials | 3 | CIV ENG 2210 | Mechanics of Materials | 3 |
| | Humanities/Social Science Elective | 3 | | Humanities/Social Science Elective | 3 |
| | <i>No free electives applied to the degree.</i> | 0 | | Maximum Free Electives | 0 |
| | Group 2 Major Requirements | 32 | | Group 2 Major Requirements | 28 |
| | Group 1 Core Requirements | 39 | | Group 1 Core Requirements | 35 |
| | Total Hours | 71 | | Total Hours* | 63 |

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

Geological Engineering Group 2 Major Requirements

| <u>Joliet Junior College</u> | | <u>Semester</u> | <u>Missouri S&T</u> | | |
|---|--|-----------------|---|--|----|
| ENG 102 or COMM 101 or ENG 130 | Rhetoric or Principles of Communication or Technical Writing and Communication | 3 | ENGLISH 1160 or SPMS 1185 or ENGLISH 3560 | Writing and Research or Public Speaking or Technical Writing | 3 |
| HIST 103 or HIST 104 or HIST 106 or PSCI 101 | History of the US to 1865 or History of the US, 1865 to Present or History of Civilization II or American National Government | 3 | HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200 | American History to 1877 or American History since 1877 or Modern Western Civilization or American Government | 3 |
| GEOL 101 | Principles of Physical Geology | 4 | GEO ENG 1150 (GEOLOGY 1110) | Physical and Environmental Geology | 3 |
| EGR 201 | Analytical Mechanics-Statics | 3 | CIV ENG 2200 | Engineering Mechanics-Statics | 3 |
| EGR 202 | Analytical Mechanics-Dynamics | 3 | MECH ENG 2350 | Engineering Mechanics-Dynamics | 3 |
| EGR 203 | Mechanics: Strength of Materials | 3 | CIV ENG 2210 | Mechanics of Materials | 3 |
| BIO 151 or CHEM 102 or CHEM 209 | General Biology I or General Chemistry II or Organic Chemistry I | 5 | BIO SCI 1113 or CHEM 1320 or CHEM 2210 | General Biology or General Chemistry II or Organic Chemistry I <small>or any 3-hour course in chemistry, geochemistry, or biology. Satisfies chemistry/geochemistry elective requirement.</small> | 3 |
| | Humanities/Social Science Elective | 3 | | Humanities/Social Science Elective | 3 |
| | Humanities/Social Science Elective | 3 | | Humanities/Social Science Elective | 3 |
| | <i>No free electives applied to the degree.</i> | 0 | | Maximum Free Electives | 0 |
| | Group 2 Major Requirements | 30 | | Group 2 Major Requirements | 27 |
| | Group 1 Core Requirements | 39 | | Group 1 Core Requirements | 35 |
| | Total Hours | 69 | | Total Hours* | 62 |

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

Mechanical Engineering Group 2 Major Requirements

| <u>Joliet Junior College</u> | | <u>Semester</u> | <u>Missouri S&T</u> | | |
|---|--|-----------------|---|--|----|
| HIST 103 or HIST 104 or HIST 106 or PSCI 101 | History of the US to 1865 or History of the US, 1865 to Present or History of Civilization II or American National Government | 3 | HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200 | American History to 1877 or American History since 1877 or Modern Western Civilization or American Government | 3 |
| ENG 102 or COMM 101 or ENG 130 | Rhetoric or Principles of Communication or Technical Writing and Communication | 3 | ENGLISH 1160 or SPMS 1185 or ENGLISH 3560 | Writing and Research or Principles of Speech or Technical Writing | 3 |
| EGR 220 | Electrical Circuit Analysis | 4 | EE 2800 | Circuit Analysis I | 3 |
| EGR 201 | Analytical Mechanics-Statics | 3 | CIV ENG 2200 | Engineering Mechanics-Statics | 3 |
| EGR 203 | Mechanics: Strength of Materials | 3 | CIV ENG 2210 | Mechanics of Materials | 3 |
| MATH 210 | Linear Algebra | 3 | MATH 3108 | Linear Algebra I <small>(Will satisfy the Advanced Math/Comp Sci elective requirement.)</small> | 3 |
| | Literature Elective | 3 | | Literature Elective | 3 |
| | Humanities/Social Science Elective | 3 | | Humanities/Social Science Elective | 3 |
| | <i>No free electives applied to the degree.</i> | 0 | | Maximum Free Electives | 0 |
| | Group 2 Major Requirements | 31 | | Group 2 Major Requirements | 30 |
| | Group 1 Core Requirements | 39 | | Group 1 Core Requirements | 35 |
| | Total Hours | 70 | | Total Hours* | 65 |

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

Metallurgical Engineering Group 2 Major Requirements

| <u>Joliet Junior College</u> | | <u>Semester</u> | <u>Missouri S&T</u> | | |
|---|--|-----------------|---|--|----|
| ENG 102 or COMM 101 or ENG 130 | Rhetoric or Principles of Communication or Technical Writing and Communication | 3 | ENGLISH 1160 or SPMS 1185 or ENGLISH 3560 | Writing and Research or Public Speaking or Technical Writing | 3 |
| HIST 103 or HIST 104 or HIST 106 or PSCI 101 | History of the US to 1865 or History of the US, 1865 to Present or History of Civilization II or American National Government | 3 | HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200 | American History to 1877 or American History since 1877 or Modern Western Civilization or American Government | 3 |
| EGR 201 | Analytical Mechanics-Statics | 3 | CIV ENG 2200 | Engineering Mechanics-Statics | 3 |
| EGR 203 | Mechanics: Strength of Materials | 3 | CIV ENG 2210 | Mechanics of Materials | 3 |
| CHEM 102 | General Chemistry II | 5 | CHEM 1320 | General Chemistry II | 3 |
| CHEM 209 or EGR 220 or PHYS 203 | Organic Chemistry I (5) or Electrical Circuit Analysis (4) or Engineering Physics III (3) | 3 | CHEM 2210 or EE 2800 or PHYSICS 2305 | Organic Chemistry I (4) or Electrical Circuits (3) or Intro to Modern Physics (3) | 3 |
| | | | | <i>Not specifically required for the degree but will satisfy Out-of-Department Technical Elective Requirement.</i> | |
| | Humanities/Social Science Elective | 3 | | Humanities/Social Science Elective | 3 |
| | Humanities/Social Science Elective | 3 | | Humanities/Social Science Elective | 3 |
| | <i>See your advisor for course options.</i> | 5 | | Maximum Free Electives | 5 |
| | Group 2 Major Requirements | 31 | | Group 2 Major Requirements | 29 |
| | Group 1 Core Requirements | 39 | | Group 1 Core Requirements | 35 |
| | Total Hours | 70 | | Total Hours* | 64 |

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

Mining Engineering Group 2 Major Requirements

| <u>Joliet Junior College</u> | | <u>Semester</u> | <u>Missouri S&T</u> | | |
|---|--|-----------------|---|--|----|
| ENG 102 or ENG 130 | Rhetoric or Technical Writing and Communication | 3 | ENGLISH 1160 or ENGLISH 3560 | Writing and Research or Technical Writing | 3 |
| HIST 103 or HIST 104 or HIST 106 or PSCI 101 | History of the US to 1865 or History of the US, 1865 to Present or History of Civilization II or American National Government | 3 | HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200 | American History to 1877 or American History since 1877 or Modern Western Civilization or American Government | 3 |
| EGR 201 | Analytical Mechanics-Statics | 3 | CIV ENG 2200* | Engineering Mechanics-Statics | 3 |
| EGR 202 | Analytical Mechanics-Dynamics | 3 | MECH ENG 2350 | Engineering Mechanics-Dynamics | 3 |
| EGR 203 | Mechanics: Strength of Materials | 3 | CIV ENG 2210 | Mechanics of Materials | 3 |
| GEOL 101 | Principles of Physical Geology | 4 | GEOLOGY 1110 (GEO ENG 1150) | Physical and Environmental Geology | 3 |
| | Humanities/Social Science Elective | 3 | | Humanities/Social Science Elective | 3 |
| | Humanities/Social Science Elective | 3 | | Humanities/Social Science Elective | 3 |
| | <i>No free electives applied to the degree.</i> | 0 | | Maximum Free Electives | 0 |
| | Group 2 Major Requirements | 28 | | Group 2 Major Requirements | 27 |
| | Group 1 Core Requirements | 39 | | Group 1 Core Requirements | 35 |
| | Total Hours | 67 | | Total Hours* | 62 |

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

Nuclear Engineering Group 2 Major Requirements

| Nuclear Engineering Group 2 Major Requirements | | | | | | |
|---|--|----|-----------------|---|--|----|
| <u>Joliet Junior College</u> | | | <u>Semester</u> | <u>Missouri S&T</u> | | |
| ENG 102 or ENG 130 | Rhetoric or Technical Writing and Communication | 3 | | ENGLISH 1160 or ENGLISH 3560 | Writing and Research or Technical Writing | 3 |
| HIST 103 or HIST 104 or HIST 106 or PSCI 101 | History of the US to 1865 or History of the US, 1865 to Present or History of Civilization II or American National Government | 3 | | HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200 | American History to 1877 or American History since 1877 or Modern Western Civilization or American Government | 3 |
| MATH 210 | Linear Algebra | 3 | | MATH 3108 | Linear Algebra I | 3 |
| EGR 201 | Analytical Mechanics-Statics | 3 | | CIV ENG 2200 | Engineering Mechanics-Statics | 3 |
| EGR 203 | Mechanics: Strength of Materials | 3 | | CIV ENG 2210 | Mechanics of Materials | 3 |
| PHYS 203 | Engineering Physics III | 3 | | PHYSICS 2305 | Intro to Modern Physics | 3 |
| | Humanities/Social Science Elective | 3 | | | Humanities/Social Science Elective | 3 |
| | Humanities/Social Science Elective | 3 | | | Humanities/Social Science Elective | 3 |
| | <i>See your advisor for course options.</i> | 6 | | | Maximum Free Electives | 6 |
| | Group 2 Major Requirements | 30 | | | Group 2 Major Requirements | 30 |
| | Group 1 Core Requirements | 39 | | | Group 1 Core Requirements | 35 |
| | Total Hours | 69 | | | Total Hours* | 65 |

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

Petroleum Engineering Group 2 Major Requirements

| Petroleum Engineering Group 2 Major Requirements | | | | | | |
|---|--|----|-----------------|---|--|----|
| <u>Joliet Junior College</u> | | | <u>Semester</u> | <u>Missouri S&T</u> | | |
| ENG 102 or ENG 130 | Rhetoric or Technical Writing and Communication | 3 | | ENGLISH 1160 or ENGLISH 3560 | Writing and Research or Technical Writing | 3 |
| HIST 103 or HIST 104 or HIST 106 or PSCI 101 | History of the US to 1865 or History of the US, 1865 to Present or History of Civilization II or American National Government | 3 | | HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200 | American History to 1877 or American History since 1877 or Modern Western Civilization or American Government | 3 |
| GEOL 101 | Principles of Physical Geology | 4 | | GEOLOGY 1110 (GEO ENG 1150) | Physical and Environmental Geology | 3 |
| EGR 201 | Analytical Mechanics-Statics | 3 | | CIV ENG 2200 | Engineering Mechanics-Statics | 3 |
| EGR 202 | Analytical Mechanics-Dynamics | 3 | | MECH ENG 2350 | Engineering Mechanics-Dynamics | 3 |
| EGR 203 | Mechanics: Strength of Materials | 3 | | CIV ENG 2210 | Mechanics of Materials | 3 |
| | Humanities/Social Science Elective | 3 | | | Humanities/Social Science Elective | 3 |
| | Humanities/Social Science Elective | 3 | | | Humanities/Social Science Elective | 3 |
| | <i>No free electives applied to the degree.</i> | 0 | | | Maximum Free Electives | 0 |
| | Group 2 Major Requirements | 28 | | | Group 2 Major Requirements | 27 |
| | Group 1 Core Requirements | 39 | | | Group 1 Core Requirements | 35 |
| | Total Hours | 67 | | | Total Hours* | 62 |

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