

Morehouse College — Missouri S&T

General Engineering

Transfer Guide Effective as of Fall 2024

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

Group 1 - Core Requirements: All Majors Take All Courses

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

Morehouse College		Semester	Missouri S&T		
MTH 161	Calculus I	4	MATH 1214	Calculus I Grade of C or better is required.	4
MTH 162* and MTH 263*	Calculus II* and Calculus III* <small>*The combination of Morehouse MTH 162 and 263 is equivalent to the combination of Missouri S&T MATH 1215 and 2222. Both courses must be taken to receive credit.</small>	8	MATH 1215* and MATH 2222*	Calculus II* and Calculus III* A grade of C or better is required in both courses. <small>*The combination of Morehouse MTH 162 and 263 is equivalent to the combination of Missouri S&T MATH 1215 and 2222. Both courses must be taken to receive credit.</small>	8
MTH 321	Intro to Ordinary Differential Equations	3	MATH 3304	Elementary Differential Equations	3
PHY 154	Mechanics	4	PHYSICS 1135	Engineering Physics I Grade of C or better is required.	4
PHY 253	Electricity and Magnetism	4	PHYSICS 2135	Engineering Physics II Grade of C or better is required.	4
EGR 101* and EGR 103*	Freshmann Engineering Design* (3) and Engineering Graphics* (3) <small>The combination of Morehouse EGR 101 and EGR 103 is equivalent to the combination of Missouri S&T FR ENG 1100 and MECH ENG 1720. Both courses must be taken to receive credit.</small>	6	FR ENG 1100* and MECH ENG 1720*	Study/Careers in Engineering and Computing* (1) and Engineering Design with Computer Applications* (3) <small>The combination of Morehouse EGR 101 and 103 is equivalent to the combination of Missouri S&T FR ENG 1100 and MECH ENG 1720. Both courses must be taken to receive credit. MECH ENG 1720 is not an S&T degree requirement for Computer Engineering or Biomedical Engineering.</small>	4
CHE 111, 111L	Elementary Inorganic Chemistry I and Lab	4	CHEM 1310, 1319	General Chemistry I and Lab	5
ENG 101 or ENG 103	English Composition I01 or Honors English Composition	3	ENGLISH 1120	Exposition and Argumentation	3
ECO 202 or ECO 201	Principles of Microeconomics or Principles of Macroeconomics	3	ECON 1100 or ECON 1200	Principles of Microeconomics or Principles of Macroeconomics	3
Total Hours					39
					Total Hours
					38

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/Biomufacturing or Biomaterials
Ceramic Engineering
Chemical Engineering and Biochemistry Emphasis
Civil Engineering
Computer Engineering
Electrical Engineering

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

Engineering Major Requirements are detailed on the following pages.

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

Humanities/Social Science (HSS) Electives: HSS electives may include any art, English and technical communication, etymology, foreign language, music, philosophy, speech and media studies, or theatre. Your campus may have additional acceptable options. Consult with your advisor or email transfer@mst.edu with questions. See Missouri S&T online catalog at <https://catalog.mst.edu/undergraduate/degreeprogramsandcourses/> for more information.

Aerospace Engineering Group 2 Major Requirements

<u>Morehouse College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HIS 112 or HIS 215 or HIS 216 or PSC 251	World History: Topical Approaches or History of the United States to 1876 or History of the United States Since 1876 or National Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
ENG 102 or COM 253 or ENG 393	English Composition or Public Speaking or Business and Professional Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
CSC 110 or CSC 160	Computer Programming I or Computer Programming II	3	CS 1971,1981	Intro to Programming Methodology and Lab* C++)	3
EGR 205	Engineering Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 206	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	3
MTH 271 or MTH 341	Intro to Linear Algebra or Probability and Statistics I	3	MATH 3108 or STAT 3115	Linear Algebra I or Engineering Statistics <small>Will satisfy the Advanced Math/Comp Sci elective requirement.</small>	3
	Literature Elective	3		Literature Elective	3
Ethics	Ethics Elective <small>or other engineering, business, bio, social ethics approved by advisor</small>	3	Ethics	Ethics Elective <small>or other engineering, business, bio, social ethics approved by advisor</small>	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	24		Group 2 Major Requirements	24
	Group 1 Core Requirements	39		Group 1 Core Requirements	38
	Total Hours	63		Total Hours*	62

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

Architectural Engineering Group 2 Major Requirements

<u>Morehouse College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 101* and EGR 103*	Freshmann Engineering Design* (3) and Engineering Graphics* (3) <small>The combination of Morehouse EGR 101 and EGR 103 is equivalent to the combination of Missouri S&T FR ENG 1100 and MECH ENG 1720. Both courses must be taken to receive credit.</small>	6	FR ENG 1100* and MECH ENG 1720*	StudyCareers in Engineering and Computing* (1) and Engineering Design with Computer Applications* (3) <small>The combination of Morehouse EGR 101 and 103 is equivalent to the combination of Missouri S&T FR ENG 1100 and MECH ENG 1720. Both courses must be taken to receive credit.</small>	4
HIS 112* (or HIS 215 or HIS 216)	World History: Topical Approaches* (or History of the United States to 1876 or History of the United States Since 1876) <small>*HISTORY 112 is preferred; 215 or 216 will also be accepted.</small>	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
EGR 205	Engineering Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 208	Engineering Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
EGR 206	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	3
MTH 341	Probability and Statistics I	3	STAT 3115*	Engineering Statistics* <small>*Will be substituted for STAT 3113.</small>	3
Humanities or Social Science or Communication	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language or one communication course from this list: ENG 102, ENG 393, or SPMSCOM 253.	3	Humanities or Social Science or Communication	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language or one communication course from this list: ENGLISH 1160, 1600, 3560 or SPMS 1185.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	24		Group 2 Major Requirements	21
	Group 1 Core Requirements	39		Group 1 Core Requirements	38
	Total Hours	63		Total Hours*	59

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

Biomedical Engineering-Biomanufacturing Group 2 Major Requirements

<u>Morehouse College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
COM 253	Public Speaking	3	SP&MS 1185	Principles of Speech	3
ENG 393	Business and Professional Writing	3	ENGLISH 3560	Technical Writing	3
HIS 112 or HIS 215 or HIS 216 or PSC 251	World History:Topical Approaches or History of the United States to 1876 or History of the United States Since 1876 or National Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
CHE 112, 112L	Elementary Inorganic Chemistry II and Lab	4	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&T degree requirement. Will transfer as general credit.</small>	3
CHE 231, 231L	Elementary Organic Chemistry I and Lab	4	CHEM 2210, 2219	Organic Chemistry I and Lab	4
CHE 232, 232L or BIO 111, 111L or BIO 215	Elementary Organic Chemistry II and Lab or Cell and Molecular Biology or Molecular Genetics	4	CHEM 2220, 2229 or BIO SCI 1113, 1219 or BIO SCI 2223	Organic Chemistry II and Lab or General Biology and Lab or General Genetics <small>Applies to degree as Track Elective.</small>	4
BIO 351, 351L	Cell Biology and Lab	4	BIO SCI 2213, 2219	Cell Biology and Lab	4
CSC 110 or CSC 160	Computer Programming I or Computer Programming II	3	CS 1971,1981*	Intro to Programming Methodology and Lab* C++ <small>*Will be substituted for CS 1500.</small>	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	28		Group 2 Major Requirements	30
	Group 1 Core Requirements	39		Group 1 Core Requirements	38
	Total Hours	67		Total Hours*	68

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

Biomedical Engineering-Biomaterials Group 2 Major Requirements

<u>Morehouse College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
COM 253	Public Speaking	3	SP&MS 1185	Principles of Speech	3
ENG 393	Business and Professional Writing	3	ENGLISH 3560	Technical Writing	3
HIS 112 or HIS 215 or HIS 216 or PSC 251	World History:Topical Approaches or History of the United States to 1876 or History of the United States Since 1876 or National Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
CHE 112, 112L	Elementary Inorganic Chemistry II and Lab	4	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&T degree requirement. Will transfer as general credit.</small>	3
CHE 231, 231L	Elementary Organic Chemistry I and Lab	4	CHEM 2210, 2219*	Organic Chemistry I and Lab* <small>*CHEM 2219 Lab applies to the degree as a Track Elective (non-engineering).</small>	4
CHE 232, 232L	Elementary Organic Chemistry II and Lab	4	CHEM 2220, 2229*	Organic Chemistry II and Lab* <small>CHEM 2229 Lab applies to the degree as a Track Elective (non-engineering).</small>	4
BIO 111, 111L	Cell and Molecular Biology	4	BIO SCI 1113*, 1219*	General General Biology* and Lab* <small>*Applies to degree as Track Elective (Non-engineering).</small>	4
BIO 351, 351L	Cell Biology and Lab	4	BIO SCI 2213, 2219	Cell Biology and Lab	4
CSC 110 or CSC 160	Computer Programming I or Computer Programming II	3	CS 1971,1981*	Intro to Programming Methodology and Lab* C++ <small>*Will be substituted for CS 1500.</small>	3
EGR 205	Engineering Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	35		Group 2 Major Requirements	34
	Group 1 Core Requirements	39		Group 1 Core Requirements	38
	Total Hours	74		Total Hours*	72

*S&T advisor permission is required to transfer more than 65 credits toward the S&T Biomedical Engineering degree.

Ceramic Engineering Group 2 Major Requirements

Morehouse College		Semester	Missouri S&T		
HIS 112 or HIS 215 or HIS 216 or PSC 251	World History: Topical Approaches or History of the United States to 1876 or History of the United States Since 1876 or National Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
EGR 205	Engineering Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 206	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	3
CHE 231 or CHE 321	Elementary Organic Chemistry I (4) or Elementary Physical Chemistry (3)	3	CHEM 2210, 2219* or CHEM 2310	Organic Chemistry I (3) and Lab* (1) or Inorganic Chemistry I (3) <small>Will satisfy the advanced chemistry elective requirement. *CHEM 2219 is not a Missouri S&T degree requirement, will transfer as general elective credit.</small>	3
CHE 112	Elementary Inorganic Chemistry II	3	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&T degree requirement. Will transfer as general credit.</small>	3
MTH 341	Probability and Statistics	3	STAT 3115	Engineering Statistics <small>or any statistics course 3000-level or higher. Satisfies statistics elective requirement.</small>	3
PHY 254	Optics and Modern Physics	4	PHYS 2305	Intro to Modern Physics	3
ENG 102 or COM 253 or HSS Elective	English Composition or Public Speaking 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 Principles of Speech or Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	31		Group 2 Major Requirements	30
	Group 1 Core Requirements	39		Group 1 Core Requirements	38
	Total Hours	70		Total Hours*	68

*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

Morehouse College		Semester	Missouri S&T		
COM 253	Public Speaking	3	SP&MS 1185	Principles of Speech	3
ENG 393	Business and Professional Writing	3	ENGLISH 3560	Technical Writing	3
HIS 112 or HIS 215 or HIS 216 or PSC 251	World History: Topical Approaches or History of the United States to 1876 or History of the United States Since 1876 or National Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
CHE 112, 112L	Elementary Inorganic Chemistry II and Lab	4	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&T degree requirement. Will transfer as general credit.</small>	3
CHE 231, 231L	Elementary Organic Chemistry I and Lab	4	CHEM 2210, 2219*	Organic Chemistry I and Lab* <small>*The lab will apply to the degree as 1 of the 9 science elective credits (below).</small>	4
CHE 232, 232L or BIO 351, 351L or BIO 321-322, 321-322L	Elementary Organic Chemistry II and Lab (4) or Cell Biology and Lab (4) or Special Topics: Principles of Microbiology and Lab (4) <small>Select up to 9 hours from these options or CHEM 2219 Organic Chemistry Lab.</small>	8	CHEM 2220 or BIO SCI 2213, 2219 or BIO SCI 3313, 3319	Organic Chemistry II (3) or Cell Biology and Lab (4) or Microbiology and Lab (5) <small>Will satisfy science elective requirement. Select up to 9 hours from these options or CHEM 2219 Organic Chemistry Lab.</small>	8
CSC 110 or CSC 160	Computer Programming I or Computer Programming II	3	CS 1971, 1981*	Intro to Programming Methodology and Lab* C++ <small>*Will be substituted for CS 1500.</small>	3
MTH 341	Probability and Statistics I	3	STAT 3115*	Engineering Statistics* <small>*Will be substituted for STAT 3113.</small>	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	34		Group 2 Major Requirements	33
	Group 1 Core Requirements	39		Group 1 Core Requirements	38
	Total Hours	73		Total Hours*	71

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

Civil Engineering Group 2 Major Requirements

<u>Morehouse College</u>		<u>Semester</u>	<u>Missouri S&T</u>	
ENG 102 or COM 253 or ENG 393	English Composition or Public Speaking or Business and Professional Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing
HIS 112 or HIS 215 or HIS 216 or PSC 251	World History: Topical Approaches or History of the United States to 1876 or History of the United States Since 1876 or National Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government
EGR 205	Engineering Statics	3	CIV ENG 2200	Engineering Mechanics-Statics
EGR 208	Engineering Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics
EGR 206	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials
MTH 341	Probability and Statistics I	3	STAT 3115*	Engineering Statistics*
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives
	Group 2 Major Requirements	21		Group 2 Major Requirements
	Group 1 Core Requirements	39		Group 1 Core Requirements
	Total Hours	60		Total Hours*
				58

*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

Morehouse College		Semester	Missouri S&T		
COM 253	Public Speaking	3	SPMS 1185	Principles of Speech	3
ENG 102 or ENG 393	English Composition or Business and Professional Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIS 112 or HIS 215 or HIS 216 or PSC 251	World History:Topical Approaches or History of the United States to 1876 or History of the United States Since 1876 or National Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
MTH 211 or CSC 285	Intro to Discrete Mathematics or Discrete Structures	3	CS 1200	Discrete Math for Computer Science	3
CSC 110 or CSC 160	Computer Programming I or Computer Programming II	3	CS 1971,1981*	Intro to Programming Methodology and Lab* <small>*Will be substituted for CS 1500.</small>	3
EGR 205 or EGR 308 or PHY 254 or CHE 231, 231L or BIO 111 or BIO 215	Engineering Statics (3) or Engineering Dynamics (3) or Optics & Modern Physics (4) or Elementary Organic Chemistry I (3) and Lab (1) or Cell and Molecular Biology (4) or Molecular Genetics (3)	3	CIV ENG 2200 or MECH ENG 2350 or PHYSICS 2305 or CHEM 2210, 2219* or BIO SCI 2213 or BIO SCI 2223	Engineering Mechanics-Statics (3) or Engineering Mechanics-Dynamics (2) or Intro to Modern Physics (3) or Organic Chemistry I (3) and Lab* (1) or Cell Biology (3) or General Genetics (3) <small>Satisfies a required engineering/science elective. *CHEM 2219 is not a Missouri S&T degree requirement, will transfer as general elective credit.</small>	3
MTH 271 or MTH 255	Intro to Linear Algebra or Intro to Set Theory	3	MATH 3108 or MATH 3109	Linear Algebra or Foundations of Mathematics <small>Will satisfy a required math elective.</small>	3
MTH 341	Probability and Statistics I	3	STAT 3115*	Engineering Statistics* <small>*Will be substituted for STAT 3117.</small>	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Electives	Maximum Free Electives	3	Electives	Maximum Free Electives	3
	Group 2 Major Requirements	30		Group 2 Major Requirements	30
	Group 1 Core Requirements	39		Group 1 Core Requirements	38
	Total Hours	69		Total Hours*	68

*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

Morehouse College		Semester	Missouri S&T		
COM 253	Public Speaking	3	SPMS 1185	Principles of Speech	3
ENG 102 or ENG 393	English Composition or Business and Professional Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIS 112 or HIS 215 or HIS 216 or PSC 251	World History:Topical Approaches or History of the United States to 1876 or History of the United States Since 1876 or National Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
CSC 110 or CSC 160	Computer Programming I or Computer Programming II	3	CS 1971,1981*	Intro to Programming Methodology and Lab* <small>*Will be substituted for CS 1500.</small>	3
EGR 205 and EGR 308 (BOTH of the courses above or the course below.) OR PHY 254 or CHE 231, 231Lor BIO 111 or BIO 215	Engineering Statics (3) and Engineering Dynamics (3) <small>(Both courses above combined or the one course below will satisfy a required engineering science elective.)</small> OR Optics and Modern Physics or Elementary Organic Chemistry I (3) and Lab* (1) or Cell and Molecular Biology (4) or Molecular Genetics (3)	3	CIV ENG 2200 and MECH ENG 2350 <small>BOTH of the courses above or ONE of the courses below.</small> OR PHYSICS 2305 or CHEM 2210, 2219* or BIO SCI 2213 or BIO SCI 2223	Engineering Mechanics-Statics (3) and Engineering Mechanics-Dynamics (2) <small>Both courses above combined or any one of the following courses will satisfy a required engineering science elective.</small> OR Intro to Modern Physics (3) or Organic Chemistry I (3) and Lab* (1) or Cell Biology (3) or General Genetics (3) <small>Satisfies a required engineering/science elective. *CHEM 2219 is not a Missouri S&T degree requirement, will transfer as general elective credit.</small>	3
MTH 271	Intro to Linear Algebra	3	MATH 3108	Linear Algebra	3
MTH 341	Probability and Statistics I	3	STAT 3115*	Engineering Statistics* <small>*Will be substituted for STAT 3117.</small>	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Electives	Maximum Free Electives	3	Electives	Maximum Free Electives	3
	Group 2 Major Requirements	27		Group 2 Major Requirements	27
	Group 1 Core Requirements	39		Group 1 Core Requirements	38
	Total Hours	66		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>Morehouse College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
PSY 101	Intro to Psychology	3	PSYCH 1101	General Psychology	3
HIS 112 or HIS 215 or HIS 216 or PSC 251	World History: Topical Approaches or History of the United States to 1876 or History of the United States Since 1876 or National Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
ENG 102 or ENG 393	English Composition or Business and Professional Writing	3	SPMS 1185	Principles of Speech	3
CSC 110 or CSC 160	Computer Programming I or Computer Programming II	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
EGR 205	Engineering Statics	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
EGR 208	Engineering Dynamics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 206	Mechanics of Materials	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
MTH 341	Probability and Statistics I	3	CIV ENG 2210	Mechanics of Materials	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	STAT 3115	Engineering Statistics	3
	<i>No free electives applied to the degree.</i>	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	Group 2 Major Requirements	30	Electives	Maximum Free Electives	0
	Group 1 Core Requirements	39		Group 2 Major Requirements	29
	Total Hours	69		Group 1 Core Requirements	38
				Total Hours*	61

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

Environmental Engineering Group 2 Major Requirements

<u>Morehouse College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 102 or COM 253 or ENG 393	English Composition or Public Speaking or Business and Professional Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
HIS 112 or HIS 215 or HIS 216	World History: Topical Approaches or History of the United States to 1876 or History of the United States Since 1876	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310	Modern Western Civilization or American History to 1877 or American History since 1877	3
CHE 112	Elementary Inorganic Chemistry II	3	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&T degree requirement. Will transfer as general credit.</small>	3
BIO 101 or BIO 113	Biological Science for Non-Majors (3) or Comprehensive Biology (4)	3	BIO SCI 1113	General Biology	3
EGR 205	Engineering Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 208	Engineering Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
EGR 206	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	3
MTH 341	Probability and Statistics I	3	STAT 3115*	Engineering Statistics* <small>*Will be substituted for STAT 3113.</small>	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	27		Group 2 Major Requirements	26
	Group 1 Core Requirements	39		Group 1 Core Requirements	38
	Total Hours	66		Total Hours*	64

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

Geological Engineering Group 2 Major Requirements

<u>Morehouse College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 393	Business and Professional Writing	3	ENGLISH 3560	Technical Writing	3
HIS 112 or HIS 215 or HIS 216 or PSC 251	World History: Topical Approaches or History of the United States to 1876 or History of the United States Since 1876 or National Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
CSC 110 or CSC 160	Computer Programming I or Computer Programming II	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
EGR 205	Engineering Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 208	Engineering Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
EGR 206	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	3
MTH 341	Probability and Statistics I	3	STAT 3115	Engineering Statistics	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	27		Group 2 Major Requirements	26
	Group 1 Core Requirements	39		Group 1 Core Requirements	38
	Total Hours	66		Total Hours*	64

*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>Morehouse College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HIS 112 or HIS 215 or HIS 216 or PSC 251	World History: Topical Approaches or History of the United States to 1876 or History of the United States Since 1876 or National Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
ENG 102 or COM 253 or ENG 393	English Composition or Public Speaking or Business and Professional Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
CSC 110 or CSC 160	Computer Programming I or Computer Programming II	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
EGR 205	Engineering Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 206	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	3
MTH 271 or MTH 341	Intro to Linear Algebra or Probability and Statistics I	3	MATH 3108 or STAT 3115	Linear Algebra I or Engineering Statistics	3
	Literature Elective	3		Will satisfy the Advanced Math/Comp Sci elective requirement. Literature Elective	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	24		Group 2 Major Requirements	24
	Group 1 Core Requirements	39		Group 1 Core Requirements	38
	Total Hours	63		Total Hours*	62

*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>Morehouse College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 102 or COM 253 or ENG 393	English Composition or Public Speaking or Business and Professional Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
HIS 112 or HIS 215 or HIS 216 or PSC 251	World History: Topical Approaches or History of the United States to 1876 or History of the United States Since 1876 or National Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
EGR 205	Engineering Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
MTH 341	Probability and Statistics I	3	STAT 3115	Engineering Statistics	3
EGR 206	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	3
CHE 112	Elementary Inorganic Chemistry II	3	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&T degree requirement. Will transfer as general credit.</small>	3
CHE 231, 231L or CHE 321 or PHY 254	Elementary Organic Chemistry I (3) and Lab* (1) or Elementary Physical Chemistry (3) or Optics and Modern Physics (3)	3	CHEM 2210 or CHEM 3410 or PHYSICS 2305	Organic Chemistry I (3) and Lab* (1) or Chemical Thermodynamics I (3) or Intro to Modern Physics (3) <small>Not specifically required for the degree but will satisfy out-of-department technical elective requirement. *CHEM 2219 is not a Missouri S&T degree requirement, will transfer as general elective credit.</small>	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Electives	Maximum Free Electives	5	Electives	Maximum Free Electives	3
	Group 2 Major Requirements	29		Group 2 Major Requirements	30
	Group 1 Core Requirements	39		Group 1 Core Requirements	38
	Total Hours	68		Total Hours*	68

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

Mining Engineering Group 2 Major Requirements

<u>Morehouse College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 102 or COM 253	English Composition or Public Speaking	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIS 112 or HIS 215 or HIS 216 or PSC 251	World History: Topical Approaches or History of the United States to 1876 or History of the United States Since 1876 or National Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
MTH 341	Probability and Statistics I	3	STAT 3115	Engineering Statistics	3
EGR 205	Engineering Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 208	Engineering Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
EGR 206	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	24		Group 2 Major Requirements	23
	Group 1 Core Requirements	39		Group 1 Core Requirements	38
	Total Hours	63		Total Hours*	61

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

Nuclear Engineering Group 2 Major Requirements

<u>Morehouse College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 102 or COM 253 or ENG 393	English Composition or Public Speaking or Business and Professional Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
HIS 112 or HIS 215 or HIS 216 or PSC 251	World History: Topical Approaches or History of the United States to 1876 or History of the United States Since 1876 or National Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
CSC 110 or CSC 160	Computer Programming I or Computer Programming II	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
MTH 271 or MTH 255	Intro to Linear Algebra or Intro to Set Theory	3	MATH 3108 or MATH 3109	Linear Algebra or Foundations of Mathematics	3
EGR 205	Engineering Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 206	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	3
MTH 341	Probability and Statistics I	3	STAT 3115	Engineering Statistics	3
PHY 254	Optics and Modern Physics	3	PHYSICS 2305	Intro to Modern Physics	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Electives	Maximum Free Electives	6	Electives	Maximum Free Electives	6
	Group 2 Major Requirements	36		Group 2 Major Requirements	36
	Group 1 Core Requirements	39		Group 1 Core Requirements	38
	Total Hours	75		Total Hours*	74

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

Petroleum Engineering Group 2 Major Requirements

<u>Morehouse College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 102 or COM 253	English Composition or Public Speaking	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIS 112 or HIS 215 or HIS 216 or PSC 251	World History: Topical Approaches or History of the United States to 1876 or History of the United States Since 1876 or National Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
EGR 205	Engineering Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 208	Engineering Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
EGR 206	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	21		Group 2 Major Requirements	20
	Group 1 Core Requirements	39		Group 1 Core Requirements	38
	Total Hours	60		Total Hours*	58

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