

Missouri Southern State University — Missouri S&T

General Engineering Transfer Guide

Effective as of Fall 2023

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>Missouri Southern State University</u>			<u>Semester</u>	<u>Missouri S&T</u>		
MATH 0150	Calculus with Analytic Geometry I	5		MATH 1214	Calculus I	Grade of C or better is required. 4
MATH 0250	Calculus with Analytic Geometry II	5		MATH 1215	Calculus II	Grade of C or better is required. 4
MATH 0260	Calculus with Analytic Geometry III	5		MATH 2222	Calculus III	Grade of C or better is required. 4
MATH 0322	Differential Equations	3		MATH 3304	Elementary Differential Equations	3
PHYS 0250 and PHYS 0260	General Physics I and General Physics II*	5		PHYSICS 1135	Engineering Physics I	Grade of C or better is required. 4
*Both PHYS 0250 and 0260 must be taken to receive credit for S&T PHYSICS 1135.						
PHYS 0290 and PHYS 0291	General Physics III and Lab	5		PHYSICS 2135	Engineering Physics II	Grade of C or better is required. 4
CHEM 0140,141	General Chemistry I and Lab	4		CHEM 1310, 1319	General Chemistry I and Lab	5
ENG 0101	College Composition I	3		ENGLISH 1120	Exposition and Argumentation	3
ECON 0202 or ECON 0201	Principles of Economics (Micro) or Principles of Economics (Macro)	3		ECON 1100 or ECON 1200	Principles of Microeconomics or Principles of Macroeconomics	3
Total Hours			38	Total Hours		34

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 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>Missouri Southern State University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HIST 0140 or HIST 0110 or HIST 0120 or PSC 0120	Western Civilization since 1660 or US History 1492-1877 or US History 1877-present or Government: US, State, Local	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 0102 or COMM 0100 or ENG 0313	English Composition or Oral Communications or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
CIS 0110	Programming I	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
PHYS 0372	Electronics for Experimental Physicists	4	EE 2800	Electrical Circuits	3
MATH 0351	Linear Algebra	3	MATH 3108	Linear Algebra I or <small>Will satisfy the Advanced Math/Comp Sci elective requirement.)</small>	3
ENG 0271 or ENG 0281 or ENG 0261	British Literature I or American Literature I or World Literature I <small>(or other literature elective)</small>	3	ENGLISH 1211 or ENGLISH 1221 or ENGLISH 1231	British Literature I: The Beginnings to 1800 or American Literature: 1600 to 1865 or World Literature I <small>(or other literature elective)</small>	3
	Ethics Elective	3		Ethics Elective <small>Engineering, business, bio, social or other ethics approved by advisor.</small>	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	38		Group 1 Core Requirements	34
	Total Hours	60		Total Hours*	55

*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>Missouri Southern State University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HIST 0140* (or HIST 0110 or HIST 0120)	Western Civilization since 1660* (or US History 1492-1877 or US History 1877-present) <small>*HISTORY 0140 is preferred; 0120 or 0140 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
PHYS 0322	Classical Mechanics	3	MECH ENG 2350	Dynamics	3
HSS Elective	Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language	3	HSS Elective	Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language	3
GEOL 0120	Intro to Geology	4	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
PHYS 0341	Thermal Physics	4	MECH ENG 2527	Thermal Analysis	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	17		Group 2 Major Requirements	15
	Group 1 Core Requirements	38		Group 1 Core Requirements	34
	Total Hours	55		Total Hours*	49

*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

<u>Missouri Southern State University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HIST 0140 or HIST 0110 or HIST 0120 or PSC 0120	Western Civilization since 1660 or US History 1492-1877 or US History 1877-present or Government: US, State, Local	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
CHEM 0301	Organic Chemistry I	5	CHEM 2210	Organic Chemistry I (Will satisfy the advanced chemistry elective requirement.)	3
CHEM 0142	General Chemistry II	5	CHEM 1320	General Chemistry II	3
PHYS 0301	Modern Physics	4	PHYS 2305	Intro to Modern Physics	3
ENG 0102 or COMM 0100 or HSS Elective	English Composition or Oral Communications 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 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	23		Group 2 Major Requirements	18
	Group 1 Core Requirements	38		Group 1 Core Requirements	34
	Total Hours	61		Total Hours*	52

*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

<u>Missouri Southern State University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 0313	Technical Writing	3	ENGLISH 3560	Technical Writing	3
HIST 0140 or HIST 0110 or HIST 0120 or PSC 0120	Western Civilization since 1660 or US History 1492-1877 or US History 1877-present or Government: US, State, Local	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
CHEM 0142	General Chemistry II	5	CHEM 1320	General Chemistry II	3
CHEM 0301	Organic Chemistry I	5	CHEM 2210, 2219*	Organic Chemistry I and Lab* *The lab is not required for the degree, will transfer as 1 of the 9 science elective credits (below).	4
CHEM 0302 or BIO 0231	Organic Chemistry II General and Medical Microbiology	8	CHEM 2220 or BIO SCI 3313, 3319	Organic Chemistry II (3) or Microbiology and Lab (5) or (Will satisfy science elective requirement. Select up to 9 hours from these options or CHEM 2219 Organic Chemistry Lab.)	8
CIS 0110 or CIS 0210 or CIS 0350	Programming I or Programming II or Data Structures	3	CS 1971, 1981* or CS 1500 or CS 1500	Intro to Programming Methodology and Lab* (C++) or Computational Problem Solving or Computational Problem Solving or *Course will be substituted for CS 1500.	3
COM 0100	Oral Communications	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	33		Group 2 Major Requirements	30
	Group 1 Core Requirements	38		Group 1 Core Requirements	34
	Total Hours	71		Total Hours*	64

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

Chemical Engineering - Biochemical Engineering Emphasis Group 2 Major Requirements

<u>Missouri Southern State University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 0313	Technical Writing	3	ENGLISH 3560	Technical Writing	3
HIST 0140 or HIST 0110 or HIST 0120 or PSC 0120	Western Civilization since 1660 or US History 1492-1877 or US History 1877-present or Government: US, State, Local	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
CHEM 0142	General Chemistry II	5	CHEM 1320	General Chemistry II	3
CHEM 0301	Organic Chemistry I	5	CHEM 2210, 2219*	Organic Chemistry I and Lab* <small>*The lab is not required for the degree, will transfer as 1 of the 9 science elective credits (below).</small>	4
CHEM 0302 BIO 0231	Organic Chemistry II or General and Medical Microbiology	5	CHEM 2220 or BIO SCI 3313, 3319	Organic Chemistry II or Microbiology and Lab <small>(Will satisfy science elective requirement. Select up to 9 hours from these options or CHEM 2219 Organic Chemistry Lab.)</small>	8
CIS 0110 or CIS 0210 or CIS 0350	Programming I or Programming II or Data Structures	3	CS 1971, 1981* or CS 1500	Intro to Programming Methodology and Lab* (C++) or Computational Problem Solving <small>Course will be substituted for CS 1500.</small>	3
COM 0100	Oral Communications	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	30		Group 2 Major Requirements	30
	Group 1 Core Requirements	38		Group 1 Core Requirements	34
	Total Hours	68		Total Hours*	64

*S&T advisor permission is required to transfer more than 70 credits toward the S&T Chemical/Biochemical Engineering degree.

Civil Engineering Group 2 Major Requirements

<u>Missouri Southern State University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 0102 or COMM 0100 or ENG 0313	English Composition or Oral Communications or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
HIST 0140 or HIST 0110 or HIST 0120 or PSC 0120	Western Civilization since 1660 or US History 1492-1877 or US History 1877-present or Government: US, State, Local	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
GEOL 0120	Intro to Geology	4	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
PHYS 0322	Classical Mechanics	3	MECH ENG 2350	Dynamics	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	16		Group 2 Major Requirements	15
	Group 1 Core Requirements	38		Group 1 Core Requirements	34
	Total Hours	54		Total Hours*	49

*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>Missouri Southern State University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
COM 0100	Oral Communications	3	SPMS 1185	Principles of Speech	3
ENG 0102 or ENG 0313	English Composition or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIST 0140 or HIST 0110 or HIST 0120 or PSC 0120	Western Civilization since 1660 or US History 1492-1877 or US History 1877-present or Government: US, State, Local	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
CIS 0210 or CIS 0350	Programming II or Data Structures	3	CS 1500	Computational Problem Solving	3
PHYS 0322 or PHYS 0341 or PHYS 0301 or CHEM 0301	Engineering Mechanics-Dynamics (3) or Thermal Physics (4) or Modern Physics (4) or Organic Chemistry I (5)	3	MECH ENG 2350 or MECH 2527 or PHYSICS 2305 or CHEM 2210	Engineering Mechanics-Dynamics (2) or Thermal Analysis (3) or Intro to Modern Physics (3) or Organic Chemistry I (4)	2
PHYS 0372	Electronics for Experimental Physicists	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 0351 or MATH 0300	Linear Algebra or Fundamentals of Mathematical Thought	3	MATH 3108 or MATH 3109	Linear Algebra or Foundations of Mathematics (Will satisfy a required math elective.)	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	Maximum Free Electives	3		Maximum Free Electives	3
	Group 2 Major Requirements	28		Group 2 Major Requirements	26
	Group 1 Core Requirements	38		Group 1 Core Requirements	34
	Total Hours	66		Total Hours*	60

*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>Missouri Southern State University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
COM 0100	Oral Communications	3	SPMS 1185	Principles of Speech	3
ENG 0102 or ENG 0313	English Composition or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIST 0140 or HIST 0110 or HIST 0120 or PSC 0120	Western Civilization since 1660 or US History 1492-1877 or US History 1877-present or Government: US, State, Local	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
CIS 0210 or CIS 0350	Programming II or Data Structures	3	CS 1500	Computational Problem Solving	3
PHYS 0322 and S&T CIV ENG 2200 (BOTH of the courses above or ONE of the courses below.) OR	Engineering Mechanics-Dynamics (3 hours) in combination with S&T CIV Eng 2200 Statics. (Both courses above combined or any one of the following courses will satisfy a required engineering science elective.) OR	4	CIV ENG 2200 and MECH ENG 2350 (BOTH of the courses above or ONE of the courses below.) OR	Engineering Mechanics-Statics (3) and Engineering Mechanics-Dynamics (2) (Both courses above combined or any one of the following courses will satisfy a required engineering science elective.) OR	3
PHYS 0341 or PHYS 0301 or CHEM 0301	Thermal Physics (4) or Modern Physics (4) or Organic Chemistry I (5)	4	MECH 2527 or PHYSICS 2305 or CHEM 2210	Thermal Analysis (3) or Intro to Modern Physics (3) or Organic Chemistry I (3)	3
PHYS 0372	Electronics for Experimental Physicists	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 0351	Linear Algebra	3	MATH 3108	Linear Algebra	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	Maximum Free Electives	3		Maximum Free Electives	3
	Group 2 Major Requirements	29		Group 2 Major Requirements	27
	Group 1 Core Requirements	38		Group 1 Core Requirements	34
	Total Hours	67		Total Hours*	61

*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>Missouri Southern State University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
PSYC 0100	General Psychology	3	PSYC 1101	General Psychology	3
HIST 0140 or HIST 0110 or HIST 0120 or PSC 0120	Western Civilization since 1660 or US History 1492-1877 or US History 1877-present or Government: US, State, Local	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
COMM 0100	Oral Communications	3	SPMS 1185	Principles of Speech	3
ENG 0102 or ENG 0313	English Composition or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
CIS 0110	Programming I	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
PHYS 0372	Electronics for Experimental Physicists	4	EE 2800	Electrical Circuits	3
PHYS 0322	Classical Mechanics	3	MECH ENG 2350	Dynamics	3
PHYS 0341	Thermal Physics	4	MECH 2527	Thermal Analysis	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	Maximum Free Electives	3		Maximum Free Electives	3
	Group 2 Major Requirements	32		Group 2 Major Requirements	30
	Group 1 Core Requirements	38		Group 1 Core Requirements	34
	Total Hours	70		Total Hours*	64

*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>Missouri Southern State University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 0102 or COMM 0100 or ENG 0313	English Composition or Oral Communications or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
HIST 0140 or HIST 0110 or HIST 0120	Western Civilization since 1660 or US History 1492-1877 or US History 1877-present	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310	Modern Western Civilization or American History to 1877 or American History since 1877	3
GEOL 0120	Intro to Geology	4	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
CHEM 0142	General Chemistry II	5	CHEM 1320	General Chemistry II	3
BIO 0101	General Biology	4	BIO SCI 1113	General Biology	4
PHYS 0322	Classical Mechanics	3	MECH ENG 2350	Dynamics	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	25		Group 2 Major Requirements	22
	Group 1 Core Requirements	38		Group 1 Core Requirements	34
	Total Hours	63		Total Hours*	56

*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>Missouri Southern State University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 0313	Technical Writing	3	ENGLISH 3560	Technical Writing	3
HIST 0140 or HIST 0110 or HIST 0120 or PSC 0120	Western Civilization since 1660 or US History 1492-1877 or US History 1877-present or Government: US, State, Local	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
GEOL 0120	Intro to Geology	4	GEO ENG 1150 (GEOLOGY 1110)	Physical and Environmental Geology	3
PHYS 0322	Classical Mechanics	3	MECH ENG 2350	Dynamics	3
BIO 0101 or CHEM 152 or CHEM 0301	General Biology or General Chemistry II or Organic Chemistry I	4	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	23		Group 2 Major Requirements	21
	Group 1 Core Requirements	38		Group 1 Core Requirements	34
	Total Hours	61		Total Hours*	55

*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>Missouri Southern State University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HIST 0140 or HIST 0110 or HIST 0120 or PSC 0120	Western Civilization since 1660 or US History 1492-1877 or US History 1877-present or Government: US, State, Local	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 0102 or COMM 0100 or ENG 0313	English Composition or Oral Communications or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
CIS 0110	Programming I	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
PHYS 0372	Electronics for Experimental Physicists	4	EE 2800	Electrical Circuits	3
MATH 0351	Linear Algebra	3	MATH 3108	Linear Algebra I <small>(Will satisfy the Advanced Math/Computer Science elective requirement.)</small>	3
ENG 0271 or ENG 0281 or ENG 0261	British Literature I or American Literature I or World Literature I <small>(or other literature elective)</small>	3	ENGLISH 1211 or ENGLISH 1221 or ENGLISH 1231	British Literature I: The Beginnings to 1800 or American Literature: 1600 to 1865 or World Literature I <small>(or other literature elective)</small>	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	38		Group 1 Core Requirements	34
	Total Hours	60		Total Hours*	55

*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>Missouri Southern State University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 0102 or COMM 0100 or ENG 0313	English Composition or Oral Communications or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
HIST 0140 or HIST 0110 or HIST 0120 or PSC 0120	Western Civilization since 1660 or US History 1492-1877 or US History 1877-present or Government: US, State, Local	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
CHEM 0142	General Chemistry II	5	CHEM 1320	General Chemistry II	3
CHEM 0301 or PHYS 0372 or PHYS 0301	Organic Chemistry I (5) or Electronics for Experimental Physicists (4) or Modern Physics (4)	4	CHEM 2210 or EE 2800 or PHYSICS 2305	Organic Chemistry I (4) or Electrical Circuits (3) or Intro to Modern Physics (3)	3
	Humanities/Social Science Elective	3		Not specifically required for the degree but will satisfy Out-of-Department Technical Elective Requirement.	
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	Maximum Free Electives	5		Humanities/Social Science Elective	3
	Group 2 Major Requirements	26		Maximum Free Electives	3
	Group 1 Core Requirements	38		Group 2 Major Requirements	21
	Total Hours	64		Group 1 Core Requirements	34
				Total Hours*	55

*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>Missouri Southern State University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 0102 or ENG 0313	English Composition or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIST 0140 or HIST 0110 or HIST 0120 or PSC 0120	Western Civilization since 1660 or US History 1492-1877 or US History 1877-present or Government: US, State, Local	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
PHYS 0322	Classical Mechanics	3	MECH ENG 2350	Dynamics	3
PHYS 0341	Thermal Physics	4	MECH ENG 2527	Thermal Analysis	3
GEOL 0120	Intro to Geology	4	GEOLGY 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	23		Group 2 Major Requirements	21
	Group 1 Core Requirements	38		Group 1 Core Requirements	34
	Total Hours	61		Total Hours*	55

*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>Missouri Southern State University</u>		<u>Semester</u>	<u>Missouri S&T</u>	
ENG 0102 or COMM 0100 or ENG 0313	English Composition or Oral Communications or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing
HIST 0140 or HIST 0110 or HIST 0120 or PSC 0120	Western Civilization since 1660 or US History 1492-1877 or US History 1877-present or Government: US, State, Local	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
CIS 0110	Programming I	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)
MATH 0351 or MATH 0300	Linear Algebra or Fundamentals of Mathematical Thought	3	MATH 3108 or MATH 3109	Linear Algebra or Foundations of Mathematics
PHYS 0301	Modern Physics	3	PHYSICS 2305	Intro to Modern Physics
PHYS 0372	Electronics for Experimental Physicists	4	EE 2800	Electrical Circuits
	Humanities/Social Science Elective	3		Humanities/Social Science Elective
	Humanities/Social Science Elective	3		Humanities/Social Science Elective
	Maximum Free Electives	6		Maximum Free Electives
	Group 2 Major Requirements	31		Group 2 Major Requirements
	Group 1 Core Requirements	38		Group 1 Core Requirements
	Total Hours	69		Total Hours*
				64

*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>Missouri Southern State University</u>		<u>Semester</u>	<u>Missouri S&T</u>	
ENG 0313 or ENG 0102 or	English Composition or Technical Writing	3	ENGLISH 3560 or ENGLISH 1160	Technical Writing (preferred) or Writing and Research
HIST 0140 or HIST 0110 or HIST 0120 or PSC 0120	Western Civilization since 1660 or US History 1492-1877 or US History 1877-present or Government: US, State, Local	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
GEOL 0120	Intro to Geology	4	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology
PHYS 0322	Classical Mechanics	3	MECH ENG 2350	Dynamics
PHYS 0341	Thermal Physics	4	MECH ENG 2527	Thermal Analysis
	Humanities/Social Science Elective	3		Humanities/Social Science Elective
	Humanities/Social Science Elective	3		Humanities/Social Science Elective
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives
	Group 2 Major Requirements	23		Group 2 Major Requirements
	Group 1 Core Requirements	38		Group 1 Core Requirements
	Total Hours	61		Total Hours*
				55

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