

Lindenwood University — 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.

<u>Lindenwood University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
MTH 27100	Calculus I	4	MATH 1214	Calculus I <small>Grade of C or better is required.</small>	4
MTH 27200	Calculus II	4	MATH 1215	Calculus II <small>Grade of C or better is required.</small>	4
MTH 30300	Calculus III	4	MATH 2222	Calculus III <small>Grade of C or better is required.</small>	4
MTH 31100	Differential Equations	3	MATH 3304	Elementary Differential Equations	3
PHY 30100	General Physics I	4	PHYSICS 1135	Engineering Physics I <small>Grade of C or better is required.</small>	4
PHY 30200	General Physics II	4	PHYSICS 2135	Engineering Physics II <small>Grade of C or better is required.</small>	4
CHM 23100, 24100	General Chemistry II and Lab	4	CHEM 1310, 1319	General Chemistry I and Lab	5
ENGL 15000	Composition I	3	ENGLISH 1120	Exposition and Argumentation	3
ECON 23020 or ECON 23030	Principles of Microeconomics or Principles of Macroeconomics	3	ECON 1100 or ECON 1200	Principles of Microeconomics or Principles of Macroeconomics	3
Total Hours		33	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
Biomedical Engineering/Biomanufacturing 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>Lindenwood University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HIST 11100 or HIST 11200 or PS 15500	US History: Colony to New Republic or US History: New Republic to World Power or American Government: The Nation	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
ENGL 17000 or COM 11000 or ENGL 31200	Composition II or Fundamentals of Oral Communication or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
CSC 14400	Computer Science I	4	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
EGR 36100	Circuit Theory I	3	EE 2800	Electrical Circuits	3
MTH 31500	Linear Algebra I	3	MATH 3108	Linear Algebra I <small>Will satisfy the Advanced Math/Comp Sci elective requirement.</small>	3
	Literature Elective	3		Literature Elective	3
Ethics	Ethics Elective <small>Engineering, business, bio, social or other ethics approved by advisor.</small>	3	Ethics	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	33		Group 1 Core Requirements	34
	Total Hours	55		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>Lindenwood University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HIST 11100 or HIST 11200	US History: Colony to New Republic or US History: New Republic to World Power	3	HISTORY 1300 or HISTORY 1310	American History to 1877 or American History since 1877 <small>*HISTORY 1200 is preferred; 1300 or 1310 will also be accepted.</small>	3
ESC 10000	Physical Geology with Lab	4	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	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: ENGL 17000, ENGL 31200, or COM 11000.	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	10		Group 2 Major Requirements	9
	Group 1 Core Requirements	33		Group 1 Core Requirements	34
	Total Hours	43		Total Hours*	43

*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>Lindenwood University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
COM 11000	Fundamentals of Oral Communication	3	SP&MS 1185	Principles of Speech	3
ENGL 31200	Technical Writing	3	ENGLISH 3560	Technical Writing	3
HIST 11100 or HIST 11200 or PS 15500	US History: Colony to New Republic or US History: New Republic to World Power or American Government: The Nation	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
CHM 23200, 24200	General Chemistry III 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
CHM 36100	Organic Chemistry I	4	CHEM 2210, 2219	Organic Chemistry I and Lab	4
CHM 36200 or BSC 40800	Organic Chemistry II or Genetics	4	CHEM 2220, 2229 or BIO SCI 2223	Organic Chemistry II and Lab or General Genetics <small>Applies to degree as Track Elective.</small>	4
BSC 40400	Cell Biology	4	BIO SCI 2213, 2219	Cell Biology and Lab	4
DSCI 11000 or CSC 24400 or CSC 36000 or CSC 14400*	Intro to Data Science (3) or Computer Science II (4) or Data Structures and Algorithms (3) or Computer Science I* (4)	3	CS 1500 or CS 1971,1981*	Computational Problem Solving (3) or 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	31		Group 2 Major Requirements	30
	Group 1 Core Requirements	33		Group 1 Core Requirements	34
	Total Hours	64		Total Hours*	64

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

Biomedical Engineering-Biomaterials Group 2 Major Requirements

<u>Lindenwood University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
COM 11000	Fundamentals of Oral Communication	3	SP&MS 1185	Principles of Speech	3
ENGL 31200	Technical Writing	3	ENGLISH 3560	Technical Writing	3
HIST 11100 or HIST 11200 or PS 15500	US History: Colony to New Republic or US History: New Republic to World Power or American Government: The Nation	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
CHM 23200, 24200	General Chemistry III 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
CHM 36100	Organic Chemistry I	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
CHM 36200	Organic Chemistry II	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
BSC 40400	Cell Biology	4	BIO SCI 2213, 2219	Cell Biology and Lab	4
DSCI 11000 or CSC 24400 or CSC 36000 or CSC 14400*	Intro to Data Science (3) or Computer Science II (4) or Data Structures and Algorithms (3) or Computer Science I* (4)	3	CS 1500 or CS 1971,1981*	Computational Problem Solving (3) or Intro to Programming Methodology and Lab* C++ <small>*Will be substituted for CS 1500.</small>	3
EGR 36100	Circuit Theory I	3	EE 2100*	Circuits I <small>*A passing grade on the Missouri S&T EE Advancement Exam I is required to receive credit for EE 2100. Applies to the degree as a Track Elective (Engineering).</small>	3
PHRL 21202	Bioethics	3	PHILOS 3223	Bioethics	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	33		Group 1 Core Requirements	34
	Total Hours	67		Total Hours*	67

*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

<u>Lindenwood University</u>		<u>Semester</u>	<u>Missouri S&T</u>	
HIST 11100 or HIST 11200 or PS 15500	US History: Colony to New Republic or US History: New Republic to World Power or American Government: The Nation	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government
CHM 36100 or CHM 44000	Organic Chemistry I (4) or Inorganic Chemistry (4)	4	CHEM 2210, 2219* or CHEM 3310	Organic Chemistry I (3) and Lab* (1) or Inorganic Chemistry I (3) <small>Will satisfy the advanced chemistry elective requirement. CHEM 2219 is not an S&T degree requirement, will transfer as general elective credit.</small>
CHM 23200, 24200	General Chemistry III 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>
PHY 30300	Modern Physics	3	PHYS 2305	Intro to Modern Physics
ENG 17000 or COM 11000 or HSS Elective	Composition II or Fundamentals of Oral Communication or Any 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.
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.
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	23		Group 2 Major Requirements
	Group 1 Core Requirements	33		Group 1 Core Requirements
	Total Hours	56		Total Hours*
				55

*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

<u>Lindenwood University</u>		<u>Semester</u>	<u>Missouri S&T</u>	
COM 11000	Fundamentals of Oral Communication	3	SP&MS 1185	Principles of Speech
ENGL 31200	Technical Writing	3	ENGLISH 3560	Technical Writing
HIST 11100 or HIST 11200 or PS 15500	US History: Colony to New Republic or US History: New Republic to World Power or American Government: The Nation	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government
CHM 23200, 24200	General Chemistry III 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>
CHM 36100	Organic Chemistry I	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>
CHM 36200 or BSC 40400 or BSC 35300	Organic Chemistry II or Cell Biology or Microbiology	4	CHEM 2220, 2229* or BIO SCI 2213, 2219 or BIO SCI 3313, 3319	Organic Chemistry II (3) and Lab* (1) 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. *CHEM 2219 is not required for the S&T degree, will transfer as general elective credit.</small>
DSCI 11000 or CSC 24400 or CSC 36000 or CSC 14400*	Intro to Data Science (3) or Computer Science II (4) or Data Structures and Algorithms (3) or Computer Science I* (4)	3	CS 1500 or CS 1971, 1981*	Computational Problem Solving (3) or Intro to Programming Methodology and Lab* C++ <small>*Will be substituted for CS 1500.</small>
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	27		Group 2 Major Requirements
	Group 1 Core Requirements	33		Group 1 Core Requirements
	Total Hours	60		Total Hours*
				64

*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>Lindenwood University</u>		<u>Semester</u>	<u>Missouri S&T</u>	
ENGL 17000 or COM 11000 or ENGL 31200	Composition II or Fundamentals of Oral Communication or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing
HIST 11100 or HIST 11200 or PS 15500	US History: Colony to New Republic or US History: New Republic to World Power or American Government: The Nation	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government
ESC 10000	Physical Geology with Lab	4	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology
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	13		Group 2 Major Requirements
	Group 1 Core Requirements	33		Group 1 Core Requirements
	Total Hours	46		Total Hours*
				46

*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>Lindenwood University</u>		<u>Semester</u>	<u>Missouri S&T</u>	
COM 11000	Fundamentals of Oral Communication		SPMS 1185	Principles of Speech
ENGL 17000 or ENGL 31200	Composition II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing
HIST 11100 or HIST 11200 or PS 15500	US History: Colony to New Republic or US History: New Republic to World Power or American Government: The Nation	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government
DSCI 11000 or CSC 24400 or CSC 36000 or CSC 14400*	Intro to Data Science (3) or Computer Science II (4) or Data Structures and Algorithms (3) or Computer Science I* (4)	3	CS 1500 or CS 1971,1981*	Computational Problem Solving (3) or Intro to Programming Methodology and Lab* C++ <small>*Will be substituted for CS 1500.</small>
EGR 33500 or PHY 30300 or CHM 36100 or BSC 40400 or BSC 40800	Engineering Mechanics -Statics and Dynamics (3) or Modern Physics (3) or Organic Chemistry I (4) or Cell Biology n or Genetics (4)	3	MECH ENG 2340 or PHYSICS 2311 or CHEM 2210, 2219* or BIO SCI 2213 or BIO SCI 2223	Statics and Dynamics (3) or Modern Physics I (3) 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 an S&T degree requirement, will transfer as general elective credit.</small>
EGR 36100	Circuit Theory I	3	EE 2100**	Circuits I **A passing grade on the Missouri S&T EE Advancement Exam I is required to receive credit for EE 2100.
MTH 31500	Linear Algebra I	3	MATH 3108	Linear Algebra <small>Will satisfy a required math elective.</small>
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.
Electives	Maximum Free Electives	3	Electives	Maximum Free Electives
	Group 2 Major Requirements	24		Group 2 Major Requirements
	Group 1 Core Requirements	33		Group 1 Core Requirements
	Total Hours	57		Total Hours*
				61

*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>Lindenwood University</u>		<u>Semester</u>	<u>Missouri S&T</u>	
COM 11000	Fundamentals of Oral Communication		SPMS 1185	Principles of Speech
ENGL 17000 or ENGL 31200	Composition II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing
HIST 11100 or HIST 11200 or PS 15500	US History: Colony to New Republic or US History: New Republic to World Power or American Government: The Nation	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government
DSCI 11000 or CSC 24400 or CSC 36000 or CSC 14400*	Intro to Data Science (3) or Computer Science II (4) or Data Structures and Algorithms (3) or Computer Science I* (4)	3	CS 1500 or CS 1971,1981*	Computational Problem Solving (3) or Intro to Programming Methodology and Lab* C++ <small>*Will be substituted for CS 1500.</small>
EGR 33500 or PHY 30300 or CHM 36100 or BSC 40400 or BSC 40800	Engineering Mechanics -Statics and Dynamics (3) or Modern Physics (3) or Organic Chemistry I (4) or Cell Biology n or Genetics (4)	3	MECH ENG 2340 or PHYSICS 2311 or CHEM 2210, 2219* or BIO SCI 2213 or BIO SCI 2223	Statics and Dynamics (3) or Modern Physics I (3) 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 an S&T degree requirement, will transfer as general elective credit.</small>
EGR 36100	Circuit Theory I	3	EE 2100**	Circuits I **A passing grade on the Missouri S&T EE Advancement Exam I is required to receive credit for EE 2100.
MTH 31500	Linear Algebra I	3	MATH 3108	Linear Algebra
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.
Electives	Maximum Free Electives	3	Electives	Maximum Free Electives
	Group 2 Major Requirements	24		Group 2 Major Requirements
	Group 1 Core Requirements	33		Group 1 Core Requirements
	Total Hours	57		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>Lindenwood University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
PSY 10000	Principles of Psychology	3	PSYCH 1101	General Psychology	3
HIST 11100 or HIST 11200 or PS 15500	US History: Colony to New Republic or US History: New Republic to World Power or American Government: The Nation	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
COM 11000	Fundamentals of Oral Communication		SPMS 1185	Principles of Speech	3
ENGL 17000 or ENGL 31200	Composition II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
CSC 14400	Computer Science I	4	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
EGR 36100	Circuit Theory I	3	EE 2800	Electrical Circuits	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>	3	Electives	Maximum Free Electives	0
	Group 2 Major Requirements	22		Group 2 Major Requirements	21
	Group 1 Core Requirements	33		Group 1 Core Requirements	34
	Total Hours	55		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>Lindenwood University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENGL 17000 or COM 11000 or ENGL 31200	Composition II or Fundamentals of Oral Communication or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
HIST 11100 or HIST 11200	US History: Colony to New Republic or US History: New Republic to World Power	3	HISTORY 1300 or HISTORY 1310	American History to 1877 or American History since 1877	3
ESC 10000	Physical Geology with Lab	4	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
CHM 23200, 24200	General Chemistry III 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
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	17		Group 2 Major Requirements	15
	Group 1 Core Requirements	33		Group 1 Core Requirements	34
	Total Hours	50		Total Hours*	49

*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>Lindenwood University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENGL 31200	Technical Writing	3	ENGLISH 3560	Technical Writing	3
HIST 11100 or HIST 11200 or PS 15500	US History: Colony to New Republic or US History: New Republic to World Power or American Government: The Nation	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
DSCI 11000 or CSC 24400 or CSC 36000 or CSC 14400	Intro to Data Science (3) or Computer Science II (4) or Data Structures and Algorithms (3) or Computer Science I (4)	3	CS 1500 or CS 1971, 1981	Computational Problem Solving or Intro to Programming Methodology and Lab	3
ESC 10000	Physical Geology with Lab	4	GEO ENG 1150 (GEOLOGY 1110)	Physical and Environmental Geology	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	19		Group 2 Major Requirements	18
	Group 1 Core Requirements	33		Group 1 Core Requirements	34
	Total Hours	52		Total Hours*	52

*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>Lindenwood University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HIST 11100 or HIST 11200 or PS 15500	US History: Colony to New Republic or US History: New Republic to World Power or American Government: The Nation	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
ENGL 17000 or COM 11000 or ENGL 31200	Composition II or Fundamentals of Oral Communication or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
CSC 14400	Computer Science I	4	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
EGR 36100	Circuit Theory I	3	EE 2800	Electrical Circuits	3
MTH 31500	Linear Algebra I	3	MATH 3108	Linear Algebra I <small>Will satisfy the Advanced Math/Statistics elective requirement.</small>	3
	Literature Elective	3		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	22		Group 2 Major Requirements	21
	Group 1 Core Requirements	33		Group 1 Core Requirements	34
	Total Hours	55		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>Lindenwood University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENGL 17000 or COM 11000 or ENGL 31200	Composition II or Fundamentals of Oral Communication or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
HIST 11100 or HIST 11200 or PS 15500	US History: Colony to New Republic or US History: New Republic to World Power or American Government: The Nation	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
CHM 23200, 24200	General Chemistry III 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
CHM 36100 or PHY 30300 or EGR 36100	Organic Chemistry I (4) or Modern Physics (3) or Circuit Theory I (3)	3	CHEM 2210 or PHYSICS 2311 or EE 2800	Organic Chemistry I (4) or Modern Physics I (3) or Electrical Circuits (3) <small>Not specifically required for the degree but will satisfy Out-of-Department Technical Elective Requirement.</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	24		Group 2 Major Requirements	21
	Group 1 Core Requirements	33		Group 1 Core Requirements	34
	Total Hours	57		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>Lindenwood University</u>		<u>Semester</u>	<u>Missouri S&T</u>	
ENGL 17000 or ENGL 31200	Composition II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	3
HIST 11100 or HIST 11200 or PS 15500	US History: Colony to New Republic or US History: New Republic to World Power or American Government: The Nation	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	3
ESC 10000	Physical Geology with Lab	4	GEOLOGY 1110 (GEO ENG 1150)	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	3
	<i>No free electives applied to the degree.</i>	0		0
	Group 2 Major Requirements	16		15
	Group 1 Core Requirements	33		34
	Total Hours	49		Total Hours*
				49

*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>Lindenwood University</u>		<u>Semester</u>	<u>Missouri S&T</u>	
ENGL 17000 or COM 11000 or ENGL 31200	Composition II or Fundamentals of Oral Communication or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	3
HIST 11100 or HIST 11200 or PS 15500	US History: Colony to New Republic or US History: New Republic to World Power or American Government: The Nation	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	3
CSC 14400	Computer Science I	4	CS 1971, 1981	3
MTH 31500	Linear Algebra I	3	MATH 3108	3
EGR 36100	Circuit Theory I	3	EE 2800	3
PHY 30300	Modern Physics	3	PHYSICS 2311	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	3
Electives	Maximum Free Electives	6	Electives	6
	Group 2 Major Requirements	31		30
	Group 1 Core Requirements	33		34
	Total Hours	64		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>Lindenwood University</u>		<u>Semester</u>	<u>Missouri S&T</u>	
ENGL 17000 or ENGL 31200	Composition II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	3
HIST 11100 or HIST 11200 or PS 15500	US History: Colony to New Republic or US History: New Republic to World Power or American Government: The Nation	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	3
ESC 10000	Physical Geology with Lab	4	GEOLOGY 1110 (GEO ENG 1150)	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	3
	<i>No free electives applied to the degree.</i>	0		0
	Group 2 Major Requirements	16		15
	Group 1 Core Requirements	33		34
	Total Hours	49		Total Hours*
				49

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