

Lindenwood University — Missouri S&T

General Engineering Transfer Guide

Effective as of Fall 2020

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

Group 1 - Core Requirements: All Majors Take All Courses

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

<u>Lindenwood University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
MTH 27100	Calculus I	4	MATH 1214	Calculus for Engineers I	Grade of C or better is required. 4
MTH 27200	Calculus II	4	MATH 1215	Calculus for Engineers II	Grade of C or better is required. 4
MTH 30300	Calculus III	4	MATH 2222	Calculus with Analytic Geometry III	Grade of C or better is required. 4
MTH 31100	Differential Equations	3	MATH 3304	Elementary Differential Equations	3
PHY 30100	General Physics	3	PHYSICS 1135	Engineering Physics I	Grade of C or better is required. 4
PHY 30200	General Physics II	3	PHYSICS 2135	Engineering Physics II	Grade of C or better is required. 4
CHM 23100,24100	General Chemistry II and Lab	4	CHEM 1310, 1319	General Chemistry I and Lab	5
ENGL 15000	English Composition I	3	ENGLISH 1120	Exposition and Argumentation	3
BA 21100 or BA 21200	Microeconomics or Macroeconomics	3	ECON 1100 or ECON 1200	Principles of Microeconomics or Principles of Macroeconomics	3
Total Hours		31			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 history, economics, political science, sociology, psychology, philosophy, fine art, literature, or foreign language. Missouri S&T approved HSS courses are listed at ugs.mst.edu. Your campus may have additional acceptable options. Consult with your advisor or email transfer@mst.edu with questions.

Aerospace Engineering Group 2 Major Requirements

<u>Lindenwood University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HIS 10500 or HIS 10600 or PS 15500	America: Colony to Civil War or America: Civil War to World Power or American National Government	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
ENG 17000 or COM 11000	English Composition II or Fundamentals of Oral Communication	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	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	Circuit Analysis I	3
EGR 33100	Engineering Mechanics I -Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
MTH 31600	Linear Algebra I	3	MATH 3108	Linear Algebra I (Will satisfy the Advanced Math/Comp Sci elective requirement.)	3
	Literature Elective	3		Literature Elective	3
	See your advisor for course options.	3		Ethics Elective	3
	No free electives applied to the degree.	0		Maximum Free Electives	0
	Group 2 Major Requirements	25		Group 2 Major Requirements	24
	Group 1 Core Requirements	31		Group 1 Core Requirements	34
	Total Hours	56		Total Hours*	58

*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>		
HIS 10500 or HIS 10600	America: Colony to Civil War or America: Civil War 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
ENG 17000 or COM 11000 or HSS Elective	English Composition II or Fundamentals of Oral Communication or Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language	3	ENGLISH 1160 or SPMS 1185 or HSS Elective	Writing and Research or Public Speaking or Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language	3
	No free electives applied to the degree.	0		Maximum Free Electives	0
	Group 2 Major Requirements	6		Group 2 Major Requirements	6
	Group 1 Core Requirements	31		Group 1 Core Requirements	34
	Total Hours	37		Total Hours*	40

*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>Lindenwood University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HIS 10500 or HIS 10600 or PS 15500	America: Colony to Civil War or America: Civil War to World Power or American National Government	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
CHM 36100	Organic Chemistry I and Lab	4	CHEM 2210	Organic Chemistry I (Not a specific requirement. Will satisfy the advanced chemistry elective requirement.)	4
CHM 23200	General Chemistry III	3	CHEM 1320	General Chemistry II	3
ENG 17000 or COM 11000 or HSS Elective	English Composition II or Fundamentals of Oral Communication or Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language	3	ENGLISH 1160 or SPMS 1185 or HSS Elective	Writing and Research or Public Speaking or Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language	3
	<i>See your advisor for course options.</i>	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	16
	Group 1 Core Requirements	31		Group 1 Core Requirements	34
	Total Hours	47		Total Hours*	50

*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>Lindenwood University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 17000	English Composition II	3	ENGLISH 1160	Writing and Research	3
HIS 10500 or HIS 10600 or PS 15500	America: Colony to Civil War or America: Civil War to World Power or American National Government	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	General Chemistry III	3	CHEM 1320	General Chemistry II	3
CHM 36100	Organic Chemistry I	4	CHEM 2210, 2219	Organic Chemistry I	5
CHM 36200	Organic Chemistry II	4	CHEM 2220	Organic Chemistry II (Will satisfy science elective requirement.)	4
CSC 14400 or CSC 24400 or CSC 36000	Computer Science I (4) or Computer Science II (4) or Data Structures and Algorithms (3)	3-4	CS 1971, 1981 or CS 1500	Intro to Programming Method and Lab (C++) or Computational Problem Solving	3
COM 11000	Fundamentals of Oral Communication	3	SP&MS 1185	Principles of Speech	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	26		Group 2 Major Requirements	27
	Group 1 Core Requirements	31		Group 1 Core Requirements	34
	Total Hours	57		Total Hours*	61

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

Chemical Engineering - Biochemical Engineering Emphasis Group 2 Major Requirements

<u>Lindenwood University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 17000	English Composition II	3	ENGLISH 1160	Writing and Research	3
HIS 10500 or HIS 10600 or PS 15500	America: Colony to Civil War or America: Civil War to World Power or American National Government	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	General Chemistry III	3	CHEM 1320	General Chemistry II	3
CHM 36100	Organic Chemistry I	4	CHEM 2210, 2219	Organic Chemistry I	5
CHM 36200	Organic Chemistry II	4	CHEM 2220	Organic Chemistry II (Will satisfy science elective requirement.)	4
CSC 14400 or CSC 24400 or CSC 36000	Computer Science I (4) or Computer Science II (4) or Data Structures and Algorithms (3)	3-4	CS 1971, 1981 or CS 1500	Intro to Programming Method and Lab (C++) or Computational Problem Solving	3
COM 11000	Fundamentals of Oral Communication	3	SP&MS 1185	Principles of Speech	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	26		Group 2 Major Requirements	27
	Group 1 Core Requirements	31		Group 1 Core Requirements	34
	Total Hours	57		Total Hours*	61

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

Civil Engineering Group 2 Major Requirements

<u>Lindenwood University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 17000 or COM 11000	English Composition II or Fundamentals of Oral Communication	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
HIS 10500 or HIS 10600 or PS 15500	America: Colony to Civil War or America: Civil War to World Power or American National Government	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	9		Group 2 Major Requirements	9
	Group 1 Core Requirements	31		Group 1 Core Requirements	34
	Total Hours	40		Total Hours*	43

*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	3	SPMS 1185	Public Speaking	3
ENG 17000	English Composition II	3	ENGLISH 1160	Writing and Research	3
HIS 10500 or HIS 10600 or PS 15500	America: Colony to Civil War or America: Civil War to World Power or American National Government	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
CSC 14400 or CSC 24400 or CSC 36000	Computer Science I (4) or Computer Science II (4) or Data Structures and Algorithms (3)	3-4	CS 1971, 1981 or CS 1500	Intro to Programming Method and Lab (C++) or Computational Problem Solving	3
EGR 33500 or PHY 30300 or CHM 36100	Engineering Mech-Statics and Dynamics (4) or Modern Physics (3) or Organic Chemistry I (4)	3-4	MECH ENG 2340 or PHYSICS 2311 or CHEM 2210	Statics and Dynamics (3) or Modern Physics I (3) Organic Chemistry I (4)	3-4
MTH 31600	Linear Algebra I	3	MATH 3108	Linear Algebra <small>(Will satisfy a required math elective.)</small>	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3		Maximum Free Electives	3
	Group 2 Major Requirements	24		Group 2 Major Requirements	24
	Group 1 Core Requirements	31		Group 1 Core Requirements	34
	Total Hours	55		Total Hours*	58

*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	3	SPMS 1185	Public Speaking	3
ENG 17000	English Composition II	3	ENGLISH 1160	Writing and Research	3
HIS 10500 or HIS 10600 or PS 15500	America: Colony to Civil War or America: Civil War to World Power or American National Government	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
EGR 33500 or PHY 30300 or CHM 36100	Engineering Mech-Statics and Dynamics (4) or Modern Physics (3) or Organic Chemistry I (4)	3-4	MECH ENG 2340 or PHYSICS 2311 or CHEM 2210	Statics and Dynamics (3) or Modern Physics I (3) Organic Chemistry I (4)	3-4
MTH 31600	Linear Algebra I	3	MATH 3108	Linear Algebra	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3		Maximum Free Electives	3
	Group 2 Major Requirements	21		Group 2 Major Requirements	21
	Group 1 Core Requirements	31		Group 1 Core Requirements	34
	Total Hours	52		Total Hours*	55

*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

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
HIS 10500 or HIS 10600 or PS 15500	America: Colony to Civil War or America: Civil War to World Power or American National Government	3		HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
ENG 17000 or COM 11000	English Composition II or Fundamentals of Oral Communication	3		ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
CSC 14400	Computer Science I	4		CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
	<i>See your advisor for course options.</i>	3			Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3			Maximum Free Electives	3
	Group 2 Major Requirements	19			Group 2 Major Requirements	18
	Group 1 Core Requirements	31			Group 1 Core Requirements	34
	Total Hours	50			Total Hours*	52

*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

Environmental Engineering Group 2 Major Requirements						
<u>Lindenwood University</u>			<u>Semester</u>	<u>Missouri S&T</u>		
ENG 17000 or COM 11000	English Composition II or Fundamentals of Oral Communication	3		ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
HIS 10500 or HIS 10600	America: Colony to Civil War or America: Civil War to World Power	3		HISTORY 1300 or HISTORY 1310	American History to 1877 or American History since 1877	3
CHM 23200	General Chemistry III	3		CHEM 1320	General Chemistry II	3
BIO 11000	Principles of Biology	3		BIO SCI 1113	General Biology	4
	<i>See your advisor for course options.</i>	3			Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0			Maximum Free Electives	0
	Group 2 Major Requirements	15			Group 2 Major Requirements	16
	Group 1 Core Requirements	31			Group 1 Core Requirements	34
	Total Hours	46			Total Hours*	50

*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>		
ENG 17000 or COM 11000	English Composition II or Fundamentals of Oral Communication	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
HIS 10500 or HIS 10600 or PS 15500	America: Colony to Civil War or America: Civil War to World Power or American National Government	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
BIO 11000 or CHM 23200 or CHM 36100	Principles of Biology or General Chemistry III or Organic Chemistry I	3	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
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	15		Group 2 Major Requirements	15
	Group 1 Core Requirements	31		Group 1 Core Requirements	34
	Total Hours	46		Total Hours*	49

*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>		
HIS 10500 or HIS 10600 or PS 15500	America: Colony to Civil War or America: Civil War to World Power or American National Government	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
ENG 17000 or COM 11000	English Composition II or Fundamentals of Oral Communication	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
CSC 14400	Computer Science I	4	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
MTH 31600	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
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	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	31		Group 1 Core Requirements	34
	Total Hours	50		Total Hours*	52

*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>		
ENG 17000 or COM 11000	English Composition II or Fundamentals of Oral Communication	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
HIS 10500 or HIS 10600 or PS 15500	America: Colony to Civil War or America: Civil War to World Power or American National Government	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	General Chemistry III	3	CHEM 1320	General Chemistry II	3
CHM 36100 or PHY 30300	Organic Chemistry I (4) or Modern Physics (3)	3-4	CHEM 2210 or PHYSICS 2311	Organic Chemistry I (4) or Modern Physics I (3)	3
				<i>Not specifically required for the degree but will satisfy Out-of-Department Technical Elective Requirement.</i>	
	See your advisor for course options.	3		Humanities/Social Science Elective	3
	See your advisor for course options.	3		Humanities/Social Science Elective	3
	See your advisor for course options.	5		Maximum Free Electives	5
	Group 2 Major Requirements	23		Group 2 Major Requirements	23
	Group 1 Core Requirements	31		Group 1 Core Requirements	34
	Total Hours	54		Total Hours*	57

*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>		
ENG 17000	English Composition II	3	ENGLISH 1160	Writing and Research	3
HIS 10500 or HIS 10600 or PS 15500	America: Colony to Civil War or America: Civil War to World Power or American National Government	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
	See your advisor for course options.	3		Humanities/Social Science Elective	3
	See your advisor for course options.	3		Humanities/Social Science Elective	3
	No free electives applied to the degree.	0		Maximum Free Electives	0
	Group 2 Major Requirements	12		Group 2 Major Requirements	12
	Group 1 Core Requirements	31		Group 1 Core Requirements	34
	Total Hours	43		Total Hours*	46

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

Nuclear Engineering Group 2 Major Requirements

Nuclear Engineering Group 2 Major Requirements					
<u>Lindenwood University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 17000	English Composition II	3	ENGLISH 1160	Writing and Research	3
HIS 10500 or HIS 10600 or PS 15500	America: Colony to Civil War or America: Civil War to World Power or American National Government	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
MTH 31600	Linear Algebra I	3	MATH 3108	Linear Algebra I	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	6		Maximum Free Electives	6
	Group 2 Major Requirements	21		Group 2 Major Requirements	21
	Group 1 Core Requirements	31		Group 1 Core Requirements	34
	Total Hours	52		Total Hours*	55

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

Petroleum Engineering Group 2 Major Requirements

Petroleum Engineering Group 2 Major Requirements					
<u>Lindenwood University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 17000	English Composition II	3	ENGLISH 1160	Writing and Research	3
HIS 10500 or HIS 10600 or PS 15500	America: Colony to Civil War or America: Civil War to World Power or American National Government	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	12		Group 2 Major Requirements	12
	Group 1 Core Requirements	31		Group 1 Core Requirements	34
	Total Hours	43		Total Hours*	46

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