

Donnelly 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.

<u>Donnelly College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
MT 231	Calculus and Analytic Geometry I	5	MATH 1214	Calculus I Grade of C or better is required.	4
MT 232	Calculus and Analytic Geometry II	5	MATH 1215	Calculus II Grade of C or better is required.	4
MT 233	Calculus and Analytic Geometry III	5	MATH 2222	Calculus III Grade of C or better is required.	4
CH 101	College Chemistry I	5	CHEM 1310, 1319	General Chemistry I and Lab	5
EN 111	English Composition I	3	ENGLISH 1120	Exposition and Argumentation	3
EC 202 or EC 201	Principles of Microeconomics or Principles of Macroeconomics	3	ECON 1100 or ECON 1200	Principles of Microeconomics or Principles of Macroeconomics	3
Total Hours		26			Total Hours
					23

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>Donnelly College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HS 121 or HS 122 or PS 111	Early American History or Late American History or American Government	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
EN 112 or EN 140	English Composition II or Public Speaking	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
Literature	Literature Elective	3	Literature	Literature Elective	3
Ethics	Ethics Elective Engineering, business, bio, social or other ethics approved by advisor.	3	Ethics	Ethics Elective Engineering, business, bio, social or other ethics approved by advisor.	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	26		Group 1 Core Requirements	23
	Total Hours	38		Total Hours*	35

*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>Donnelly College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HS 121 or HS 122	Early American History or Late American History	3	HISTORY 1300 or HISTORY 1310	American History to 1877 or American History since 1877	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: EN 112, EN 140.	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	6		Group 2 Major Requirements	6
	Group 1 Core Requirements	26		Group 1 Core Requirements	23
	Total Hours	32		Total Hours*	29

*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>Donnelly College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EN 140	Public Speaking	3	SP&MS 1185	Principles of Speech	3
HS 121 or HS 122 or PS 111	Early American History or Late American History or American Government	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
BL 101, 101L	Principles of Biology and Lab	5	BIO SCI 1113*, 1219*	General General Biology* and Lab* <small>*Applies to degree as Track Elective.</small>	4
IS 315	Object - Oriented Programming	3	CS 1500	Computational Problem Solving	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	16
	Group 1 Core Requirements	26		Group 1 Core Requirements	23
	Total Hours	43		Total Hours*	39

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

Biomedical Engineering-Biomaterials Group 2 Major Requirements

<u>Donnelly College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EN 140	Public Speaking	3	SP&MS 1185	Principles of Speech	3
HS 121 or HS 122 or PS 111	Early American History or Late American History or American Government	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
BL 101, 101L	Principles of Biology and Lab	5	BIO SCI 1113*, 1219*	General General Biology* and Lab* <small>*Applies to degree as Track Elective (Non-engineering).</small>	4
IS 315	Object - Oriented Programming	3	CS 1500	Computational Problem Solving	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	14		Group 2 Major Requirements	13
	Group 1 Core Requirements	26		Group 1 Core Requirements	23
	Total Hours	40		Total Hours*	36

*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

Ceramic Engineering Group 2 Major Requirements					
<u>Donnelly College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HS 121 or HS 122 or PS 111	Early American History or Late American History or American Government	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
EN 112 or EN 140 or HSS Elective	English Composition II or Public Speaking 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.	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	12		Group 2 Major Requirements	12
	Group 1 Core Requirements	26		Group 1 Core Requirements	23
	Total Hours	38		Total Hours*	35

*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

Chemical Engineering or Chemical Engineering - Biochemical Engineering Emphasis Group 2 Major Requirements					
<u>Donnelly College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EN 140	Public Speaking	3	SP&MS 1185	Principles of Speech	3
HS 121 or HS 122 or PS 111	Early American History or Late American History or American Government	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
IS 315	Object-Oriented Programming	3	CS 1500	Computational Problem Solving	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	12		Group 2 Major Requirements	12
	Group 1 Core Requirements	26		Group 1 Core Requirements	23
	Total Hours	38		Total Hours*	35

*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

Civil Engineering Group 2 Major Requirements					
<u>Donnelly College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EN 112 or EN 140	English Composition II or Public Speaking	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Public Speaking	3
HS 121 or HS 122 or PS 111	Early American History or Late American History or American Government	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	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	9		Group 2 Major Requirements	9
	Group 1 Core Requirements	26		Group 1 Core Requirements	23
	Total Hours	35		Total Hours*	32

*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>Donnelly College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EN 140	Public Speaking	3	SPMS 1185	Principles of Speech	3
EN 112	English Composition II	3	ENGLISH 1160	Writing and Research	3
HS 121 or HS 122 or PS 111	Early American History or Late American History or American Government	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
IS 315	Object-Oriented Programming	3	CS 1500	Computational Problem Solving	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	18		Group 2 Major Requirements	18
	Group 1 Core Requirements	26		Group 1 Core Requirements	23
	Total Hours	44		Total Hours*	41

*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>Donnelly College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EN 140	Public Speaking	3	SPMS 1185	Principles of Speech	3
EN 112	English Composition II	3	ENGLISH 1160	Writing and Research	3
HS 121 or HS 122 or PS 111	Early American History or Late American History or American Government	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
IS 315	Object-Oriented Programming	3	CS 1500	Computational Problem Solving	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	18		Group 2 Major Requirements	18
	Group 1 Core Requirements	26		Group 1 Core Requirements	23
	Total Hours	44		Total Hours*	41

*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>Donnelly College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
PY 101	General Psychology	3	PSYCH 1101	General Psychology	3
HS 121 or HS 122 or PS 111	Early American History or Late American History or American Government	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
EN 140 EN 112	Public Speaking English Composition II	3 3	SPMS 1185 ENGLISH 1160	Principles of Speech Writing and Research	3 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	18		Group 2 Major Requirements	15
	Group 1 Core Requirements	26		Group 1 Core Requirements	23
	Total Hours	44		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>Donnelly College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EN 112 or EN 140	English Composition II or Public Speaking	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Public Speaking	3
HS 121 or HS 122 or PS 111	Early American History or Late American History or American Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310	Modern Western Civilization or American History to 1877 or American History since 1877	3
BL 101, 101L	Principles of Biology and Lab	5	BIO SCI 1113, 1219*	General Biology (3) and Lab* (1) <small>*BIO SCI 1219 is not an 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
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	14		Group 2 Major Requirements	12
	Group 1 Core Requirements	26		Group 1 Core Requirements	23
	Total Hours	40		Total Hours*	35

*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>Donnelly College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HS 121 or HS 122 or PS 111 IS 315	Early American History or Late American History or American Government Object-Oriented Programming	3 3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200 CS 1500	American History to 1877 or American History since 1877 or American Government Computational Problem Solving	 3 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	12		Group 2 Major Requirements	12
	Group 1 Core Requirements	26		Group 1 Core Requirements	23
	Total Hours	38		Total Hours*	35

*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>Donnelly College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HS 121 or HS 122 or PS 111 EN 112 or EN 140 Literature	Early American History or Late American History or American Government English Composition II or Public Speaking Literature Elective	3 3 3 3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200 ENGLISH 1160 or SPMS 1185 Literature	American History to 1877 or American History since 1877 or American Government Writing and Research or Principles of Speech Literature Elective	 3 3 3 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	12		Group 2 Major Requirements	12
	Group 1 Core Requirements	26		Group 1 Core Requirements	23
	Total Hours	38		Total Hours*	35

*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>Donnelly College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EN 112 or EN 140 HS 121 or HS 122 or PS 111	English Composition II or Public Speaking Early American History or Late American History or American Government	3 3 3	ENGLISH 1160 or SPMS 1185 HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Writing and Research or Principles of Speech American History to 1877 or American History since 1877 or American Government	 3 3 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	3	Electives	Maximum Free Electives	3
	Group 2 Major Requirements	15		Group 2 Major Requirements	15
	Group 1 Core Requirements	26		Group 1 Core Requirements	23
	Total Hours	41		Total Hours*	38

*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>Donnelly College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EN 112	English Composition II	3	ENGLISH 1160	Writing and Research	3
HS 121 or HS 122 or PS 111	Early American History or Late American History or American Government	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	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	12		Group 2 Major Requirements	12
	Group 1 Core Requirements	26		Group 1 Core Requirements	23
	Total Hours	38		Total Hours*	35

*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>Donnelly College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EN 140 or EN 112	Public Speaking or English Composition II	3	SPMS 1185 or ENGLISH 1160	Public Speaking or Writing and Research	3
HS 121 or HS 122 or PS 111	Early American History or Late American History or American Government	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	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	18		Group 2 Major Requirements	18
	Group 1 Core Requirements	26		Group 1 Core Requirements	23
	Total Hours	44		Total Hours*	41

*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>Donnelly College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EN 112	English Composition II	3	ENGLISH 1160	Writing and Research	3
HS 121 or HS 122 or PS 111	Early American History or Late American History or American Government	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	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	12		Group 2 Major Requirements	12
	Group 1 Core Requirements	26		Group 1 Core Requirements	23
	Total Hours	38		Total Hours*	35

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