

Name:

Key:

Done
In Progress
Possible based on prerequisites

2017-2018 Geological Engineering Curriculum

*This chart was prepared by Freshman Engineering using the 2017-2018 catalog. It is designed to assist in advising and course selection; refer to the student's catalog requirement year for official requirements and to the student's degree audit for official progress.*

Prerequisites	FEP		Math	1103	Fundamentals of Algebra	Prerequisite: Entrance requirements.	3		
	FEP		Math	1120	College Algebra	Prerequisite: By placement examination.	5		
	FEP		Math	1140	College Algebra	Prerequisite: By placement examination.	3		
	FEP		Math	1160	Trigonometry	Prerequisite: Math 1120 or 1140 with a grade of "C" or better; or by placement exam.	2		
Semester 1	FEP		Math	1214	Calculus for Engineers I	Prerequisites: A grade of "C" or better in both Math 1160 and one of Math 1120 or Math 1140; or by placement exam.	4		
	FEP		Chem	1310	General Chemistry I	Prerequisite: Entrance requirements.	4		
	FEP		Chem	1100	Introduction to Laboratory Safety & Hazardous Materials		1		
	FEP		Chem	1319	General Chemistry Laboratory	Prerequisite: Preceded or accompanied by both Chem 1310 and Chem 1100.	1		
	FEP	<i>Hum/Soc Sci Requirement-English</i>	English	1120	Exposition and Argumentation		3		
	FEP		Fr Eng	1100	Study & Careers in Engineering		1		
	FEP	<i>Hum/Soc Sci Elective - History</i>	History/Pol Sci	one of these	1. History 1200 Modern Western Civilization 2. History 1300 American History to 1877 3. History 1310 American History Since 1877 4. Pol Sci 1200 American Government		3		

Semester 2	FEP		Math	1215	Calculus for Engineers II	Prerequisites: Math 1160 and either Math 1208 or Math 1214 both with a grade of "C" or better; or by placement exam.	4	
		<i>Chemistry/Geochemistry Elective</i>	various	one of these	The chemistry/geochemistry elective must be selected from chemistry, geochemistry or biology courses as approved by your advisor.		3	
	FEP		Mech Eng	1720	Introduction to Engineering Design		3	
	FEP		Physics	1135	Engineering Physics I	Prerequisite: Math 1208 or 1214.	4	
		<i>Hum/Soc Sci Elective</i>	various	one of these	Course chosen from Requirements for Humanities and Social Sciences Courses for Engineering Degrees at ugs.mst.edu.	Prerequisites vary.	3	
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Semester 3			Math	2222	Calculus with Analytic Geometry III	Prerequisites: Math 1215 or Math 1221 with a grade of "C" or better.	4	
			Physics	2135	Engineering Physics II	Prerequisites: Physics 1135 or Physics 1111, Math 1221 or Math 1215.	4	
			Geo Eng	3148	Fundamentals of Geographic Information Systems	(Co-listed with Geology 3811).	3	
			Geo Eng	1150	Physical & Environmental Geology	Prerequisite: Entrance requirements. (Co-listed with Geology 1110).	3	
			Geo Eng	1119	Physical & Environmental Geology Laboratory	Prerequisite: Preceded or accompanied by Geology 1110. (Co-listed with Geology 1119).	1	
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Semester 4			Math	3304	Elementary Differential Equations	Prerequisite: Math 2222 with a grade of "C" or better.	3	
			Civ Eng	2200	Statics	Prerequisites: Physics 1135 or Physics 1111 with a grade of "C" or better; Math 1215 or Math 1221 with a grade of "C" or better; preceded or accompanied by Math 2222.	3	
			Geo Eng	2110	Principles of Geological Engineering	Prerequisite: Sophomore standing in the GE program.	1	
			Geology	2611	Physical Mineralogy and Petrology	Prerequisites: Chem 1310 and Chem 1319 or Chem 1351; Geo Eng 1150 or Geology 1110.	3	
			Geo Eng	3175	Geomorphology and Terrain Analysis	Prerequisite: Geo Eng 1150.	3	
		<i>Hum/Soc Sci Elective</i>	various	one of these	The sequence of course selection must provide both breadth and depth of content and must be selected from the list of approved humanities/social science electives available from your advisor. A total of 18 hours of humanities and social science credit is required.	Prerequisites vary.	3	
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Semester 5		Mech Eng	2350	Engineering Mechanics - Dynamics	Prerequisites: A grade of "C" or better in each of Civ Eng 2200 and Math 2222	2		
		Civ Eng	2210	Mechanics of Materials	Prerequisite: Civ Eng 2200 with grade of "C" or better.	3		
		Geology	3310	Structural Geology	Prerequisites: GEOLOGY 1110 or GEO ENG 1150.	3		
	FEP	<i>Hum/Soc Sci Elective - Econ</i>	Econ	one of these	1. Econ 1100 Principles of Microeconomics 2. Econ 1200 Principles of Macroeconomics	3		
		<i>Hum/Soc Sci Elective - Upper Level</i>	various	one of these	Course chosen from Requirements for Humanities and Social Sciences Courses for Engineering Degrees at ugs.mst.edu. Must be at the 2000 level or above and have as a prerequisite one of the HSS courses already taken.	Prerequisites vary.	3	
	<i>Technical Elective -Earth Energy</i>	various	one of these	1. Geo Eng 5556 Renewable Energy Systems 2. Pet Eng 3330 Well Logging 3. Pet Eng 2510 Properties of Hydrocarbon Fluids 4. Geology 5513 Petroleum Geology	1. Prerequisites: Math 3304, Physics 2135, and preceded or accompanied by Stat 3117 or Geo Eng 4115. Junior or senior status is required. 2. Prerequisites: Physics 2135 or 2111; Pet Eng 3520. 3. Prerequisite: Chem 1310. 4. Prerequisites: Geology 1110 or Geo Eng 1150; accompanied or preceded by both Geo Eng 4415 or any Probability and Statistics Class. Junior or Senior standing is required.	3		
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Semester 6		Civ Eng	3330	Engineering Fluid Mechanics	Prerequisites: Mech Eng 2350 or Mech Eng 2340, and MATH 3304, each with a grade of "C" or better.	3		
		Geo Eng	4115	Statistical Methods in Geology and Engineering		3		
		Geo Eng	5443	Subsurface Exploration	Prerequisite: Geo Eng 1150.	3		
		<i>Technical Communications Elective</i>	various	one of these	1. English 1160 Writing and Research 2. English 3560 3. SP&M S 1185 Principles of Speech 4. Advanced ROTC 4 course sequence	1. Prerequisite: English 1120. 2. Prerequisites: English 1120 and second-semester junior standing. 3. Prerequisite: Entrance requirements. 4. see catalog	3	
		<i>Hum/Soc Sci Elective - Upper Level</i>	various	one of these	Course chosen from Requirements for Humanities and Social Sciences Courses for Engineering Degrees at ugs.mst.edu. Must be at the 2000 level or above and have as a prerequisite one of the HSS courses already taken.	Prerequisites vary.	3	
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Semester 7		<i>Technical Elective - Geophysics</i>	Geo Eng	one of these	1. Geo Eng 5736 Geophysical Field Methods 2. Geo Eng 5761 Transportation Applications of Geophysics 3. Geo Eng 5782 Environmental and Engineering Geophysics	1. Prerequisite: Junior level standing or higher. (Co-listed with Geophys 5736). 2. Prerequisite: Junior level standing or higher. (Co-listed with Geophys 5761 and Civ Eng 5750). 3. Prerequisite: Math 2222. (Co-listed with Geophys 5782).	3	
			Geo Eng	4010	Current Topics and Professionalism	Prerequisite: Senior standing.	0.5	
			Geo Eng	5331	Subsurface Hydrology	Prerequisites: Geo Eng 1150, Math 3304.	3	
			Geo Eng	5441	Engineering Geology and Geotechnics	Prerequisite: Geo Eng 3175.	3	
		<i>Technical Elective - Design</i>	Geo Eng	one of these	1. Geo Eng 5090 Geological Engineering Design 2. Geo Eng 5092 International Engineering and Design	1. Prerequisite: To be taken in the semester before graduation. 2. Prerequisites: Senior standing, instructor approval, Geo Eng 5211, Geo Eng 5247. (Co-listed with Met Eng 4510 and Cer Eng 4510).	3	
			various	one of these	1. CivE 3715 Fundamentals of Geotechnical Engineering 2. MinE 4823 Rock Mechanics	1. Prerequisite: Geo Eng 1150 or Arch Eng 2103; Civ Eng 2210; and preceded or accompanied by Civ Eng 3330. 2. Prerequisites: Physics 2135; Civ Eng 2210; Geology 3310.	3	

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Semester 8			Geo Eng	5174	Geological Engineering Field Methods		3	
			Geo Eng	4010	Current Topics and Professionalism	Prerequisite: Senior standing.	0.5	
		<i>Technical Elective - Earth Mechanics</i>	various	one of these	To be selected from GEO ENG 5471, GEO ENG 5381, MIN ENG 4823, PET ENG 2510, PET ENG 3520, CIV ENG 3715, CIV ENG 4729, or CIV ENG 5715.	Prerequisites vary.	3	
		<i>Technical Elective - Engr Econ</i>	various	one of these	1. Eng Mgt 5210 Economic Decision Analysis 2. Min Eng 3512 Mining Industry Economics 3. Pet Eng 4590 Petroleum Economics and Asset Valuation or 4. Eng Mgt 1100 Practical Concepts for Technical Managers and 5. Eng Mgt 1210 Economic Analysis of Engineering Projects	1. Prerequisite: Graduate students without previous course in engineering economy because of partial overlap. 2. Prerequisite: Econ 1100 or 1200. (Co-listed with Econ 3512). 3. Prerequisites: Pet Eng 3520, Econ 1100 or Econ 1200. 4. 5. Prerequisites: Math 1214.	3	
		<i>Technical Elective</i>	various	one of these	To be selected from advanced courses in geological, mining, petroleum or civil engineering, geology or other courses with approval of your advisor. Must contain design content and must be approved by your advisor.	Prerequisites vary.	6	

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**Total = 128**