

Name:

Key:

Done
In Progress
Possible based on prerequisites

2016-2017 Mechanical Engineering Curriculum

This chart was prepared by Freshman Engineering using the 2016-2017 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	
	FEP		Chem	1100	Introduction to Laboratory Safety & Hazardous Materials		1	

Semester 1	FEP		Fr Eng	1100	Study & Careers in Engineering		1	
	FEP		Chem	1310	General Chemistry I	Prerequisite: Entrance requirements.	4	
	FEP	<i>Hum/Soc Sci Requirement-English</i>	English	1120	Exposition and Argumentation		3	
	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	
	FEP		Chem	1319	General Chemistry Laboratory	Prerequisite: Preceded or accompanied by both Chem 1310 and Chem 1100.	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	

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Semester 2	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	
	FEP		Mech Eng	1720	Introduction to Engineering Design		3	
	FEP		Physics	1135	Engineering Physics I	Prerequisite: Math 1208 or 1214.	4	
	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>Hum/Soc Sci Elective</i>	various	one of these	<i>(FEP) Course chosen from the Approved List of Humanities and Social Science Courses for Engineering Degrees at ugs.mst.edu.</i>	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	
	<i>Programming Elective - Lecture</i>	Comp Sci	one of these	1. Comp Sci 1970 Basic Scientific Programming 2. Comp Sci 1971 Introduction to Programming Methodology 3. Comp Sci 1972 Introduction to MATLAB Programming 4. Comp Sci 1570 Introduction to Programming (<i>note: 1 more credit</i>)	1. Prerequisite: Entrance requirements- 2. 3. Prerequisite: Accompanied by Comp Sci 1982 and a "C" or better grade in either Math 1208 or Math 1214. 4. Prerequisite: Accompanied by Comp Sci 1580.	2	
	<i>Programming Elective - Lab</i>	Comp Sci	one of these	1. Comp Sci 1980 Computer Programming Laboratory 2. Comp Sci 1981 Programming Methodology Laboratory 3. Comp Sci 1982 MATLAB Programming Laboratory 4. Comp Sci 1580 Introduction to Programming Laboratory	1. Prerequisite: Accompanied by Comp Sci 1970. 2. Prerequisite: Accompanied by Computer Science 1971. 3. Prerequisite: Accompanied by Comp Sci 1972. 4. Prerequisite: Accompanied by Comp Sci 1570.	1	
		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	
		Physics	2135	Engineering Physics II	Prerequisites: Physics 1135 or Physics 1111, Math 1221 or Math 1215.	4	
		Mech Eng	2653	Introduction to Manufacturing Processes	Prerequisite: Mech Eng 1720.	3	

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Semester 4		Mech Eng	2761	Introduction to Design	Prerequisites: Mech Eng 1720, Mech Eng 2653, preceded or accompanied by Civ Eng 2200; a grade of "C" or better in each of Math 1214 (or 1208), Physics 1135.	3	
		Mech Eng	2519	Thermodynamics	Prerequisites: A grade of "C" or better in each of Comp Sci 1570 or Comp Sci 1970 or Comp Sci 1971 or Comp Sci 1972, Math 1214 (or Math 1208), Math 1215 (or Math 1221), Math 2222, and Physics 1135.	3	
		Mech Eng	2360	Dynamics	Prerequisite: Grade of "C" or better in each of Civ Eng 2200, Math 2222. (Co-listed with Aero Eng 2360).	3	
		Math	3304	Elementary Differential Equations	Prerequisite: Math 2222 with a grade of "C" or better.	3	
		Met Eng	2110	Metallurgy for Engineers	Prerequisite: Preceded or accompanied by Chem 1310, prior or concurrent.	3	

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Semester 5		Mech Eng	3313	Machine Dynamics	Prerequisites: A grade of "C" or better in each of Comp Sci 1570 or Comp Sci 1970 or Comp Sci 1971 or Comp Sci 1972, Mech Eng 2360 (or Aero Eng 2360), Math 1214 (or Math 1208), Math 1215 (or Math 1221), Math 2222, and Physics 1135.	3	
		Mech Eng	3521	Applied Thermodynamics	Prerequisite: A grade of "C" or better in Mech Eng 2519.	3	
		Elec Eng	2800	Electrical Circuits	Prerequisites: Math 3304 or 3329; Physics 2135.	3	
		Civ Eng	2210	Mechanics of Materials	Prerequisite: Civ Eng 2200 with grade of "C" or better.	3	
		Civ Eng	2211	Materials Testing	Prerequisite: Preceded or accompanied by Civ Eng 2210.	1	
		<i>Advanced Math/Stat/Comp Sci Elective</i>	various	one of these	<ol style="list-style-type: none"> 1. Comp Sci 3200 Introduction to Numerical Methods 2. Math 3103 Matrix Algebra 3. Math 3108 Linear Algebra I 4. Stat 3113 Applied Engineering Statistics 5. Stat 3115 Engineering Statistics 6. or see MechE advisor 	<ol style="list-style-type: none"> 1. Prerequisites: Program competency and a "C" or better grade in either Math 1215 or Math 1221. 2. Prerequisite: Math 2222 with a grade of "C" or better. 3. Prerequisite: Math 1215 or 1221 or 2222 with a grade of "C" or better. 4. Prerequisite: Math 1215 or 1221 with a grade of "C" or better. 5. Prerequisite: Math 1215 or 1221 with a grade of "C" or better. 6. 	3

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Semester 6		Mech Eng	3411	Modeling and Analysis of Dynamic Systems	Prerequisites: A grade of "C" or better in each of Comp Sci 1570 or Comp Sci 1970 or Comp Sci 1971 or Comp Sci 1972, Mech Eng 2360 (or Aero Eng 2360), Math 1214 (or Math 1208), Math 1215 (or Math 1221), Math 2222, Math 3304, Physics 1135, Physics 2135.	3		
		Mech Eng	3131	Thermofluid Mechanics I	Prerequisite: A grade of "C" or better in Mech Eng 2519.	3		
		Mech Eng	4840	Mechanical Instrumentation	Prerequisites: A grade of "C" or better each of Math 3304, Mech Eng 2519, Physics 2135.	2		
		<i>Hum/Soc Sci Elective - Communications</i>	various	one of these	<ol style="list-style-type: none"> 1. English 1160 Writing and Research 2. English 3560 3. SP&M S 1185 Principles of Speech 4. Advanced ROTC 4 course sequence 	<ol style="list-style-type: none"> 1. Prerequisite: English 1120. 2. Prerequisites: English 1120 and second-semester junior standing. 3. Prerequisite: Entrance requirements. 4. see catalog 	3	
		Mech Eng	3708	Machine Design I	Prerequisites: Mech Eng 2653; accompanied or preceded by Mech Eng 2761; Met Eng 2110 or Aero Eng 3877; and a grade of "C" or better in Civ Eng 2210.	3		
		Mech Eng	3525	Heat Transfer	Prerequisites: A grade of "C" or better in each of Comp Sci 1570 or Comp Sci 1970 or Comp Sci 1971 or Comp Sci 1972, Math 3304, Mech Eng 2519.	3		

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Semester 7		Mech Eng	4842	Mechanical Engineering Systems	Prerequisites: Mech Eng 4840, 3521, 3131, 3525, 3313.	2	
		Mech Eng	4479	Automatic Control of Dynamic Systems	Prerequisite: A grade of "C" or better in Mech Eng 3411.	3	
	<i>Technical Elective</i>	various	one of these	Six hours of technical electives, subject to approval by the student's advisor, must be in the department of mechanical and aerospace engineering. At least three of these technical elective hours must be at the 5000 level. This elective may not include co-op, special problems, or research credits, such as as 3002, 4000, or 4099. Honors students have special requirements for technical electives.	Prerequisites vary.	3	
	<i>Hum/Soc Sci Elective - Literature</i>	English	one of these	<i>(FEP)</i> Literature course chosen from the <i>Approved List of Humanities and Social Science Courses for Engineering Degrees</i> at ugs.mst.edu	Prerequisites vary.	3	
	<i>Technical Elective - Out of Department</i>	various	one of these	This elective must be a three credit hour course, subject to approval by the student's advisor, from any of the following areas: math, statistics, science, engineering, or computer science. The course must be at the 3000 or higher level, or have a prerequisite that is part of the required mechanical engineering curriculum. Exceptions to the course level may be approved by the student's advisor. The elective may not include co-op, special problems, or research credits, such as 3002, 4000, or 4099.	Prerequisites vary.	3	
	<i>Hum/Soc Sci Elective - Upper Level</i>	various	one of these	<i>(FEP)</i> Course, chosen from the Approved List of Humanities and Social Science Courses for Engineering Degrees at ugs.mst.edu , at the 2000-level or above which requires as a prerequisite the successful completion of a lower level humanities or social sciences course. Foreign language courses numbered 1180 will be considered to satisfy this requirement. Students may receive humanities credit for foreign language courses in their native tongue only if the course is at the 4000 level.	Prerequisites vary.	3	

Semester 8		Eng Mgt	1100	Practical Concepts for Technical Managers		1		
		Eng Mgt	1210	Economic Analysis of Engineering Projects	Prerequisites: Math 1214.	2		
		Mech Eng	4761	Engineering Design	Prerequisites: Preceded or accompanied each of Mech Eng 3708, 3525, 3131, 4479.	3		
		Mech Eng	4480	Control System Laboratory	Prerequisites: Preceded or accompanied by Mech Eng 4479.	1		
		<i>Technical Elective</i>	various	one of these	Six hours of technical electives, subject to approval by the student's advisor, must be in the department of mechanical and aerospace engineering. At least three of these technical elective hours must be at the 5000 level. This elective may not include co-op, special problems, or research credits, such as as 3002, 4000, or 4099. Honors students have special requirements for technical electives.	Prerequisites vary.	3	
		<i>Breadth Elective</i>	various	one of these	This elective consists of three credit hours, subject to approval by the student's advisor, and may be satisfied by any of the following: (1) A three credit hour course from any of the following areas: math, statistics, science, engineering, computer science, business, or IST. The course must be at the 3000 or higher level, or have a prerequisite that is part of the required mechanical engineering curriculum. Exceptions to the course level may be approved by the student's advisor; (2) Any three credit hour course in the list of approved courses for the global studies minor; or (3) Any combination of three credit hours from co-op (3002), special problems (3000, 4000, or 5000), research (4099), or design team credit (ENG MGT 2011, 2012, or 2013).	Prerequisites vary.	3	

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Total = 128