

Name:

Key:

Done
In Progress
Possible based on prerequisites

2016-2017 Aerospace 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	
Semester 1	FEP		Fr Eng	1100	Study & Careers in Engineering		1	
	FEP		Chem	1310	General Chemistry I	Prerequisite: Entrance requirements.	4	
	FEP		Chem	1319	General Chemistry Laboratory	Prerequisite: Preceded or accompanied by both Chem 1310 and Chem 1100.	1	
	FEP		Chem	1100	Introduction to Laboratory Safety & Hazardous Materials		1	
	FEP	<i>Hum/Soc Sci Requirement-English</i>	English	1120	Exposition and Argumentation		3	
	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	<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		Mech Eng	1720	Introduction to Engineering Design		3	
	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	
	FEP		Physics	1135	Engineering Physics I	Prerequisite: Math 1208 or 1214.	4	
	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	

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Semester 3		<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 1570 Introduction to Programming (<i>note: 1 more credit</i>)	1. Prerequisite: Entrance requirements. 2. 3. 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 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 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	
			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	
			Aero Eng	2861	Aerospace Vehicle Performance	Prerequisite: "C" or better grade in both Math 1215 and Physics 1135.	3	

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Semester 4			Aero Eng	2780	Introduction to Aerospace Design	Prerequisite: A grade of "C" or better in Aero Eng 2861.	2	
			Aero Eng	2360	Dynamics	Prerequisite: Grade of "C" or better in each of Civ Eng 2200, Math 2222. (Co-listed with Mech Eng 2360).	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	
			Math	3304	Elementary Differential Equations	Prerequisite: Math 2222 with a grade of "C" or better.	3	
			Civ Eng	2210	Mechanics of Materials	Prerequisite: Civ Eng 2200 with grade of "C" or better.	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	

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Semester 5		Aero Eng	3613	Aerospace Mechanics I	Prerequisites: Math 3304; a grade of "C" or better in each of Aero Eng 2360 (or Mech Eng 2360), Math 1214 (or 1208), 1215 (or 1221), 2222, and Physics 1135.	3	
		Aero Eng	3131	Aerodynamics I	Prerequisites: A grade of "C" or better in each of Aero Eng 2861, Math 1214, Math 1215, Math 2222 and Physics 1135.	3	
		Aero Eng	3877	Principles of Engineering Materials	(Co-listed with Chem Eng 5300, Physics 4523, Met Eng 5810, Cer Eng 5810).	3	
		Elec Eng	2800	Electrical Circuits	Prerequisites: Math 3304 or 3329; Physics 2135.	3	
		<i>Advanced Math/Stat/Comp Sci Elective</i>	various	one of these	<ol style="list-style-type: none"> 1. Aero Eng 5830 Applied Computational Methods 2. Comp Sci 3200 Introduction to Numerical Methods 3. Math 3103 Matrix Algebra 4. Math 3108 Linear Algebra I 5. Stat 3113 Applied Engineering Statistics 6. Stat 3115 Engineering Statistics 7. any 5000-level math or computer science course approved by the student's advisor 	<ol style="list-style-type: none"> 1. Prerequisite: Comp Sci 1570 or 1970 or 1981; Math 3304. (Co-listed with Mech Eng 5830). 2. Prerequisites: Program competency and a "C" or better grade in either Math 1215 or Math 1221 3. Prerequisite: Math 2222 with a grade of "C" or better. 4. Prerequisite: Math 1215 or 1221 or 2222 with a grade of "C" or better. 5. Prerequisite: Math 1215 or 1221 with a grade of "C" or better. 6. Prerequisite: Math 1215 or 1221 with a grade of "C" or better. 7. Prerequisites vary. 	3

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Semester 6		Aero Eng	3251	Aerospace Structures I	Prerequisites: "C" or better in Math 1214 (or 1208), 1215 (or 1221), 2222, Physics 1135 and Civ Eng 2210.	3		
		Aero Eng	3361	Flight Dynamics and Control	Prerequisites: Aero Eng 3613, Aero Eng 3131, and accompanied or preceded by Aero Eng 2780.	3		
		Aero Eng	3171	Aerodynamics II	Prerequisite: "C" or better in Aero Eng 3131 and Mech Eng 2519.	3		
		Aero Eng	4882	Experimental Methods in Aerospace Engineering I	Prerequisites: Aero Eng 3131 and Elec Eng 2800.	2	C	
		<i>Hum/Soc Sci Elective - Ethics</i>	Philos	one of these	Must be a course on engineering ethics, business ethics, bio ethics, social ethics, or any ethics course approved by the student's advisor.	Prerequisites vary.	3	
		<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	

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Semester 7		Aero Eng	4535	Aircraft and Space Vehicle Propulsion	Prerequisite: Mech Eng 3131, or Aero Eng 3171.	3	
		Aero Eng	4253	Aerospace Structures II	Prerequisite: Aero Eng 3251.	3	
	<i>Technical Elective - Design I</i>	Aero Eng	one of these	1. AeroE 4780 Aerospace Systems Design I (<i>fall semester only</i>) 2. AeroE 4790 Spacecraft Design I (<i>fall semester only</i>) (3 credits)	1. Prerequisites: Aero Eng 3251, 3361, 3171 2. Prerequisites: Aero Eng 3251, 3361, and 3171 for Aero Eng majors; consent of instructor for non-Aero Eng majors	2	
		Aero Eng	4883	Experimental Methods in Aerospace Engineering II	Prerequisites: Aero Eng 3251, 3361, 3171, & 4882.	2	
	<i>Technical Elective</i>	various	one of these	Electives must be approved by the student's advisor. Nine hours of technical electives must be in mechanical and aerospace engineering. Three hours of departmental technical electives must be at the 5000-level. AERO ENG 3877 and the 5000-level Asteroid Mining course co-listed with geological engineering are not to be used for 5000-level technical elective.	Prerequisites vary.	3	
	<i>Hum/Soc Sci Elective - Upper Level</i>	various	one of these	(FEP) 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	<i>Technical Elective - Design II</i>	Aero Eng	one of these	1. AeroE 4781 Aerospace Systems Design II (<i>spring semester only</i>) 2. AeroE 4791 Spacecraft Design II (<i>spring semester only</i>)	1. Prerequisite: Aero Eng 4780. 2. Prerequisites: Aero Eng 4790 for Aero Eng majors; consent of instructor for non-Aero Eng majors.	3	
	<i>Technical Elective</i>	various	one of these	Electives must be approved by the student's advisor. Nine hours of technical electives must be in mechanical and aerospace engineering. Three hours of departmental technical electives must be at the 5000-level. AERO ENG 3877 and the 5000-level Asteroid Mining course co-listed with geological engineering are not to be used for 5000-level technical elective.	Prerequisites vary.	3	
	<i>Technical Elective</i>	various	one of these	Electives must be approved by the student's advisor. Nine hours of technical electives must be in mechanical and aerospace engineering. Three hours of departmental technical electives must be at the 5000-level. AERO ENG 3877 and the 5000-level Asteroid Mining course co-listed with geological engineering are not to be used for 5000-level technical elective.	Prerequisites vary.	3	
		Aero Eng	4885	Assessment	Prerequisites: Aero Eng 3171, Aero Eng 3361, Aero Eng 4535, Aero Eng 4253.	1	
	<i>Free Elective</i>	various	one of these	Each student is required to take two or more hours of free electives in consultation with his/her academic advisor. Credits which do not count towards this requirement are deficiency courses (such as algebra and trigonometry), and extra credits in required courses.	Prerequisites vary.	2	
	<i>Hum/Soc Sci Elective</i>	various	one of these	(FEP) Course chosen from the <i>Approved List of Humanities and Social Science Courses for Engineering Degrees</i> at ugs.mst.edu .	Prerequisites vary.	3	

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Total = 128