MECHANICAL ENGINEERING - BS

Program Requirements

The freshman year is identical for degrees in aerospace engineering, architectural engineering, civil engineering, computer engineering, computer science, electrical engineering, electronic systems engineering technology, environmental engineering, industrial distribution, industrial engineering, interdisciplinary engineering, manufacturing and mechanical engineering technology, mechanical engineering, multidisciplinary engineering technology, nuclear engineering, ocean engineering, and petroleum engineering (Note: not all programs listed are offered in Qatar). The freshman year is slightly different for chemical engineering, biomedical engineering and materials science and engineering degrees in that students take CHEM 119 or CHEM 107/CHEM 117 and CHEM 120.

Students pursuing degrees in biological and agricultural engineering should refer to the specific curriculum for this major. It is recognized that many students will change the sequence and number of courses taken in any semester. Deviations from the prescribed course sequence, however, should be made with care to ensure that prerequisites for all courses are met.

First Year

Fall		Semester Credit Hours
CHEM 107	General Chemistry for Engineering Students [1,4]	3
CHEM 117	General Chemistry for Engineering Students Laboratory [1,4]	1
ENGL 103 or ENGL 104	Introduction to Rhetoric and Composition [1] or Composition and Rhetoric	3
ENGR 102	Engineering Lab I - Computation [1]	2
MATH 151	Engineering Mathematics I [1,2]	4
University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) [3]		3
	Semester Credit Hours	**16**
Spring		
ENGR 216/ PHYS 216	Experimental Physics and Engineering Lab II - Mechanics [1]	2
MATH 152	Engineering Mathematics II [1]	4
PHYS 206	Newtonian Mechanics for Engineering and Science [1]	3
University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) [3]		3
Select one of the following:		3-4
CHEM 120	Fundamentals of Chemistry II [1,4]	
University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) [3,5]		
	Semester Credit Hours	**15-16**
	Total Semester Credit Hours	**31-32**

[1] A grade of C or better is required.

[2] Entering students will be given a math placement exam. Test results will be used in selecting the appropriate starting course which may be at a higher or lower level.

[3] Of the 21 hours shown as University Core Curriculum electives, 3 must be from creative arts (see AREN curriculum for more information), 3 from social and behavioral sciences (see IDIS curriculum for more information), 3 from language, philosophy and culture (see CVEN, EVEN and PETE curriculum for more information), 6 from American history and 6 from government/political science. The required 3 hours of international and cultural diversity and 3 hours of cultural discourse may be met by courses satisfying the creative arts, social and behavioral sciences, language, philosophy and culture, and American history requirements if they are also on the approved list of international and cultural diversity (http://catalog.tamu.edu/undergraduate/general-information/degree-information/international-cultural-diversity-requirements/) courses and cultural discourse (http://catalog.tamu.edu/undergraduate/general-information/degree-information/cultural-discourse-requirements/) courses.

[4] BMEN, CHEN and MSEN require 8 hours of fundamentals of chemistry which are satisfied with CHEM 119 or CHEM 107/CHEM 117 and CHEM 120; Students with an interest in BMEN, CHEN and MSEN can take CHEM 120 second semester freshman year. CHEM 120 will substitute for CHEM 107/CHEM 117.

[5] For BS-PETE, allocate 3 hours to core communications course (ENGL 210, COMM 203, COMM 205, or COMM 243) and/or 3 hours to UCC elective. For BS-MEEN, allocate 3 hours to core communications course (ENGL 203, ENGL 210, or COMM 205) and/or 3 hours to UCC elective.

Second Year

Fall		Semester Credit Hours
ENGR 217/ PHYS 217	Experimental Physics and Engineering Lab III - Electricity and Magnetism [1]	2
MATH 251	Engineering Mathematics III [1]	3
MEEN 210	Geometric Modeling for Mechanical Design [1]	2
MEEN 225	Engineering Mechanics [1]	3
PHYS 207	Electricity and Magnetism for Engineering and Science [1]	3
STAT 211	Principles of Statistics I [1]	3
	Semester Credit Hours	**16**
Spring		
ECEN 215	Principles of Electrical Engineering [1]	3
MATH 308	Differential Equations [1]	3
MEEN 223	Principles of Materials and Manufacturing [1]	2
MEEN 315	Principles of Thermodynamics [1]	3
MEEN 260	Mechanical Measurements [1]	3
University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) [3]		3
	Semester Credit Hours	**17**
Summer		
High Impact Experience [6]		0

MEEN 399	High Impact Experience for Mechanical Engineers	
	Semester Credit Hours	**0**
Third Year		
Fall		
MEEN 305	Solid Mechanics [1]	3
MEEN 344	Fluid Mechanics [1]	3
MEEN 345	Fluid Mechanics Laboratory [1]	1
MEEN 357	Engineering Analysis for Mechanical Engineers [1]	3
MEEN 363	Dynamics and Vibrations [1]	3
MEEN 381	Seminar	1
University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) [3]		3
	Semester Credit Hours	**17**
Spring		
MEEN 360	Materials and Manufacturing Selection in Design [1]	3
MEEN 361	Materials and Manufacturing in Design Laboratory [1]	1
MEEN 364	Dynamic Systems and Controls [1]	3
MEEN 365	Dynamic Systems and Controls Lab [1]	1
MEEN 368	Solid Mechanics in Mechanical Design [1]	3
MEEN 461	Heat Transfer [1]	3
MEEN 464	Heat Transfer Laboratory [1]	1
	Semester Credit Hours	**15**
Fourth Year		
Fall		
ISEN 302	Economic Analysis of Engineering Projects	2
MEEN 401	Introduction to Mechanical Engineering Design [1]	3
University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) [3]		3
Technical elective [7]		9
	Semester Credit Hours	**17**
Spring		
MEEN 402	Intermediate Design	3
University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) [3]		6
Technical elective [7]		3
General elective [8]		3
	Semester Credit Hours	**15**
	Total Semester Credit Hours	**97**

[6] All students are required to complete a high-impact experience in order to graduate. The list of possible high-impact experiences is available in the MEEN advising office.

[7] Technical electives: See the Mechanical Engineering Academic Advisor's Office for lists of approved courses. Students must take at least three MEEN technical electives of which at least one course is from the Thermo-fluids Systems area; at least one from Data Science & Experimentation area; and at least one course is from Mechanical & Manufacturing Systems area.

[8] Select from any 300-499 course.

This curriculum lists the minimum number of classes required for graduation. Additional courses may be taken.

Total Program Hours 128