

**REQUIREMENTS FOR THE DEGREE OF  
BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING**

Fall 2018 (rev 10/1/18)

at Texas A&M University-Kingsville

**Accredited by EAC of ABET**

**FRESHMAN YEAR**

UNIV 1101 Learning in Global Context I	1	UNIV 1102 Learning in Global Context II	1
MEEN 1310 Engineering Graphics I	3	MEEN 1320 Elem Num Method & Eng Prob Solving	3
ENGL 1301 Rhetoric & Composition	3	ENGL 1302 Rhetoric & Composition (pre-req ENGL 301)	3
CHEM 1311 Gen. Inorganic Chemistry (pre-req: MATH 1314, HS chemistry or CHEM 1481)	3	MATH 2414 Calculus II (pre-req: MATH 2413)	4
CHEM 1111 Gen. Inorganic Chem. Lab (coreq: CHEM 1311)	1	PHYS 2325 University Physics I (pre-req: PHYS 1305/1105 or 1375, coreq: MATH 2413, PHYS 2125)	3
MATH 2413 Calculus I (pre-req: MATH 1348)	4	PHYS 2125 University Physics I Lab (coreq: PHYS 2325)	1
HIST 1301 American History	3	HIST 1302 American History	3
	18		18

**SOPHOMORE YEAR**

CEEN 2301 Mechanics I, Statics (pre-req: PHYS 2325/2125, co-req: MATH 2414)	3	MEEN 2146 Engr. Measurement (pre-req: PHYS 2325/2125)	1
POLS 2301 Govt. & Politics of U.S***	3	MEEN 2302 Mechanics II, Dynamics (pre-req: CEEN 2301)	3
MATH 3320 Differential Equations (pre-req: MATH 2414)	3	MEEN 3344 Materials Science (pre-req: CHEM 1311/1111, MATH 2413, coreq: PHYS 2326)	3
PHYS 2326 University Physics II (pre-req: PHYS 2325/2125, coreq: MATH 2414, PHYS 2126)	3	MEEN 3145 Materials Science Lab (coreq: MEEN 3344)	1
PHYS 2126 University Physics II Lab (co-req PHYS 2326)	1	CEEN 3311 Mechanics III, Strength of Materials (pre-req: CEEN 2301, MATH 2414)	3
Creative Arts Elective <sup>^</sup>	3	ENGL 2374 (Communication Requirement)***	3
		MATH 3415 Calculus III (pre-req: MATH 2414)	4
	16		18

**JUNIOR YEAR**

MEEN 3347 Thermodynamics (pre-req: MATH 2414, PHYS 2325/2125)	3	MEEN 3348 Heat Transfer (pre-req: MEEN 3347, MATH 3320, MEEN 3392)	3
MEEN 3349 Fund. MFG Processes (pre-req: MEEN 3344)	3	MEEN 3350 Design Machine Elements (pre-req: MEEN 2302, MEEN 3344, CEEN 3311)	3
MEEN 3352 Kinematic Analysis of Mach. (pre-req: MEEN 2302, MATH 2414)	3	CEEN 3317 Engineering Economy (pre-req: junior standing)	3
MEEN 3392 Fluid Mechanics (pre-req: MATH 3320, coreq: MEEN 2302)	3	EEEN 3331 Circuits/Electromagnetic Devices (pre-req: PHYS 2326/2126)	3
Lang/Phil/Culture Elective <sup>^</sup>	3	MEEN 4341 Appl. Thermodynamics (pre-req: MEEN 3347, MATH 3415)	3
		MEEN 3360 Engineering Design and Simulation (pre-req: MEEN 1310, 1320, co-req: MEEN 3350, 3348)	3
	15		18

**SENIOR YEAR**

MEEN 4131 Mechanical Engr. Lab (pre-req: MEEN 2146, MEEN 3348)	1	MEEN 4264 ME Design Projects II (Spring Only) (pre-req: MEEN 4263)	2
MEEN 4263 ME Design Project I (Fall Only) (pre-req: MEEN 3350, MEEN 3360)	2	Engineering Elective	3
MEEN 4344 Control of Systems	3	Engineering Elective	3
MEEN 4351 Machine Design (pre-req: MEEN 3350)	3	Math Elective	3
POLS 2302 Govt. & Politics Texas	3	Social / Behavioral Elective <sup>^</sup>	3
Engineering Elective	3		
	15		14

**Total Number of Hours: 132**

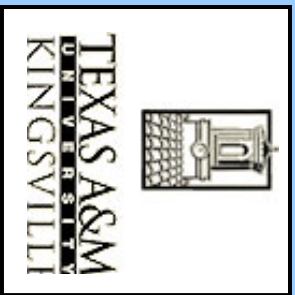
**Electives are selected from the following:**

Engineering electives: MEEN 3398, 4317, 4335, 4336, 4343, 4345, 4348, 4349, 4352, 4354, 4355, 4371, 4372, 4373, 4385, 4395, 4396, 4397, 4301, 4303, 4305, 4307

Math Electives: MATH 4341, 4370, 4371, 4372, 4373, 4374, STAT 4303.

<sup>^</sup>For courses listed under Core Curriculum "Components" see "General Requirements for Graduation with a Baccalaureate Degree" in the 2018-2019 Catalog.

\*\*\*ENGL 2374 or COMS 2374 is required unless otherwise approved by faculty advisor and department chair



Dr. Mohammad Alam  
 Dean/Professor  
 Frank H Dotterweich  
 College of Engineering  
 Phone: (361) 593-2001  
 Fax: (361) 593-2106  
 Toll-Free: (888) 897-8587  
[mohammad.alam@tamuk.edu](mailto:mohammad.alam@tamuk.edu)  
[www.tamuk.edu/engineering](http://www.tamuk.edu/engineering)

Dr. Larry Peel, PE  
 Chairman/Professor  
 Mechanical Engineering  
 Phone: (361) 593-2003  
 Fax: (361) 593-4026  
[larry.peel@tamuk.edu](mailto:larry.peel@tamuk.edu)

Beth Johnson  
 Admin Associate III  
 Mechanical Engineering  
 Phone: (361) 593-2003  
 Fax: (361) 593-4026  
[beth.johnson@tamuk.edu](mailto:beth.johnson@tamuk.edu)

John Austin McCoy  
 Director  
 Javelina Engineering  
 Student Success Center  
 Phone: (361) 593-3920  
 Fax: (361) 593-4466  
[austin.mccoy@tamuk.edu](mailto:austin.mccoy@tamuk.edu)

The Frank H. Dotterweich College of Engineering

# MECHANICAL ENGINEERING

## What is Mechanical Engineering?

Mechanical engineers are well-rounded, creative individuals who work on all kinds of mechanical, environmental, and materials-, fluids-, and heat-related problems.

If it's a machine, you can be sure that a mechanical engineer has had something to do with designing it, constructing a prototype, testing it, perfecting it and rolling it out on the production line.

A high concentration of engineers are in the oil & gas automotive, aircraft industries. They also work with machine tools, power generation systems, power utilities and the federal government.

## Job functions could include:

- Making Robots, 3D printers, airplanes, prosthetics! Designing Chemical Processing Plants, Rail, Aerospace, Solid-waste processes, Noise control and acoustics systems.
- Develop systems and design comprising dynamic systems and control, design engineering, vibration engineering, acoustics, computers in engineering and fluid power systems and technology.
- Manufacturing involves materials handling, production engineering, textile engineering, process industries and plant engineering and maintenance.
- Fabricate structures comprising of metal, composite materials, pressure vessels and piping, offshore mechanics and arctic engineering.
- Develop energy resources involving petroleum, solar energy, biomass, ocean engineering and advanced energy systems

As one of the largest engineering professions, with employment opportunities across most types of manufacturing, mechanical engineering is one of the most prominent in the effort to conserve energy and make energy-intensive processes and machines more efficient. The average starting salary varies, but has been around \$67,000 for recent ME graduates.

## Employment opportunities are available as:

Design Engineer	Agricultural Engineer
Manufacturing/Production Engineer	Air Conditioning/Refrigeration Engineer
Maintenance Engineer	Bio-engineer
Power Engineer	Systems Engineer
Automotive Engineer	Research Engineer
Reliability and Testing Engineer	Ocean Structure Engineer
Facilities Engineer	Aerospace Engineer

