

# ACADEMIC MAP

## Mechanical Engineering Bachelor of Science



First Year			Third Year		
<b>Fall</b>			<b>Hours</b>	<b>Fall</b>	
UNIV 1101	University Seminar I	1	POLS 2306	State and Local Government	3
ENGL 1301	Writing and Rhetoric I	3	ENGR 2460	Circuit Analysis	4
ENGR 1201	Introduction to Engineering	2	ENGR 3315	Fluid Mechanics	3
CHEM 1411	General Chemistry I	4	ENGR 3320	Strength of Materials	3
MATH 2413	Calculus I	4	Statistics Elective (MATH 3342 or MATH 3345)		3
HIST 1301	U.S. History to 1865	3	<b>Hours</b>		<b>16</b>
<b>Hours</b>			<b>17</b>	<b>Spring</b>	
<b>Spring</b>			ENGR 3350	Manufacturing Processes	3
UNIV 1102	University Seminar II	1	MEEN 3330	Design of Machine Elements	3
ENGL 1302	Writing and Rhetoric II	3	MEEN 3230	Solid Mechanics Laboratory	2
or COMM 1311	or Foundation of Communication		MEEN 3345	Heat Transfer	3
ENGR 1312	Engineering Graphics I	3	MEEN 3310	Engineering Analysis for Mechanical Engineering	3
MATH 2414	Calculus II	4	Language, Philosophy & Culture Core Requirement		3
PHYS 2425	University Physics I	4	<b>Hours</b>		<b>17</b>
HIST 1302	U.S. History Since 1865	3	<b>Fourth Year</b>		
<b>Hours</b>			<b>18</b>	<b>Fall</b>	
<b>Second Year</b>			ENGR 4420	Engineering Lab Measurements	4
<b>Fall</b>			ENGR 4240	Project Management	2
COSC 1330	Programming for Scientists, Engineers, and Mathematicians	3	MEEN 4360	Thermal Systems Design	3
PHYS 2426	University Physics II	4	MEEN 4365	Mechanical Systems Design	3
ENGR 2325	Statics	3	MEEN Technical Elective	3	3
MATH 2415	Calculus III	4	<b>Hours</b>		<b>15</b>
Creative Arts Core Requirement		3	<b>Spring</b>		
<b>Hours</b>			ENGR 4370	Capstone Projects	3
<b>17</b>			MEEN 4351	Dynamical Systems Analysis and Modeling	3
<b>Spring</b>			MEEN Technical Elective	3	3
POLS 2305	U.S. Government and Politics	3	MEEN Technical Elective	3	3
ENGR 2326	Dynamics	3	Social and Behavioral Sciences Core Requirement		3
ENGR 3316	Thermodynamics	3	<b>Hours</b>		<b>15</b>
ENGR 3322	Materials Science	3	<b>Total Hours</b>		
MATH 3315	Differential Equations	3	<b>130</b>		
<b>Hours</b>			<b>15</b>		

This is not an official degree plan. It is a guideline for planning your courses. To access a copy of this academic map please visit [tamucc.edu/academics/planning/academic-advising/](http://tamucc.edu/academics/planning/academic-advising/)



# CAREER MAP

## MECHANICAL ENGINEERING

### Bachelor of Science



Mechanical engineering is an engineering discipline that requires an understanding of mechanics, kinematics, thermodynamics and energy, and involves the application of principles of physics and mathematics to develop mechanical systems. The American Society of Mechanical Engineers (ASME) defines mechanical engineering as the branch of engineering that serves society through the analysis, design, and manufacture of systems that convert a source of energy to useful work. The Bachelor of Science in Mechanical Engineering (BSME) program emphasizes service, systems-based knowledge, and sustainability with an eye toward the interface of traditional mechanical engineering with new and emerging fields, in particular unmanned aircraft systems, maritime sciences and marine biology that directly impact the Gulf Coast. The mechanical engineering curriculum consists of a minimum of 128 credit hours and can be divided into four main areas: University Core requirements, mathematics and science requirements, engineering requirements, technical electives, and capstone project.

Graduates will have:

- an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
- an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
- an ability to communicate effectively with a range of audiences
- an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
- an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
- an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
- an ability to acquire and apply new knowledge as needed, using appropriate learning strategies

## CONTACT INFORMATION

### Career Counselor:

Career and Professional Development Center  
UC 304 | 361.825.2628  
career.center@tamucc.edu

### Internship Coordinator:

Mayra Alvarado  
RFEB 215 | 361.825.6025  
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### Department Contact:

Dr. Ruby Mehrubeoglu  
RFEB 22D | 361.825.3378  
ruby.mehrubeoglu@tamucc.edu

## ADDITIONAL PROGRAM REQUIREMENTS

All engineering students are encouraged to take the Fundamentals of Engineering (FE) exam. This exam is an important step toward licensure as a Professional Engineer (P.E.), which many engineers find useful and necessary in their careers. Close to the end of the B.S. degree program is an excellent time to take the exam, because the student has the best preparation for the exam at that point in the student's academic career.

For all students admitted into a pre-engineering program at TAMU-CC who wish to transfer into one of the TAMU-CC engineering programs (CEEN, EEEN, IEEN, MEEN), the cumulative GPA for all MATH, CHEM, PHYS, ENGR, COSC, CEEN, EEEN, IEEN, or MEEN courses that appear in the CEEN, EEEN, IEEN, or MEEN program curricula, plus any ENTC courses, taken at TAMU-CC, or their equivalents taken at other institutions, should be 2.5 or greater to be admitted into the CEEN, EEEN, IEEN, or MEEN programs at TAMU-CC. There should be a minimum of at least 12 hours of such courses taken at TAMU-CC or elsewhere before a transfer / admission to CEEN, EEEN, IEEN, or MEEN may be considered. All such students must also meet the requirements to take MATH 2413 Calculus I (4 sch) if they have not already done so.

## ADDITIONAL SOURCES OF INFORMATION

1. National Society of Professional Engineers
2. Society of Women Engineers
3. National Society of Black Engineers
4. American Society of Mechanical Engineers

## CAREER OPTIONS

- Mechanical Engineer
- Aerospace Engineer
- Automotive Engineer
- Biomedical Engineer
- Business Executive
- Construction Engineer
- Manufacturing Engineer

## STUDENT ORGANIZATIONS

- Society of Hispanic Professional Engineers
- American Society of Mechanical Engineers
- Math Club
- SACNAS Chapter at Texas A&M University - Corpus Christi

## SKILLS/ATTRIBUTES

- |                                     |                      |
|-------------------------------------|----------------------|
| • Critical Thinking/Problem Solving | • Digital Technology |
| • Teamwork/Collaboration            | • Math               |
| • Professionalism/Work Ethic        | • Creativity         |
| • Oral/Written Communication        | • Mechanical Skills  |

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