MECHANICAL ENGINEERING

Educational Objectives

The Mechanical Engineering Program at UTSA trains and graduates students to:

- Acquire the ability to apply the fundamentals of mathematics, sciences and engineering to analyze problems.
- Develop innovative design skills, including the students' ability to formulate problems, to think creatively, to synthesize information, and to communicate effectively.
- Develop the ability to use modern experimental techniques; collect, analyze, and interpret experimental data; and effectively communicate the results.
- Develop diverse skills needed to be successful engineers.

Concentration Areas:

- Energy, Thermal and Fluid Systems
- General Mechanical Engineering
- Manufacturing Engineering and Systems
- Mechanics and Materials
- Mechanical Systems and Designs
- Oil and Gas

Mechanical Engineering Provides

- The opportunity to prepare for careers in traditional, new, and emerging technologies related to the practice of Mechanical Engineering.
- In-depth technical elective courses in six concentrations.
- Opportunities for students to develop an understanding of such subject areas as solid mechanics, fluid mechanics, thermal sciences, mechanical design, structures, materials controls, and instrumentation.
- Opportunities to develop a strong background in the engineering sciences to learn the analysis, design, and synthesis tools necessary to function successfully as active participants in traditional, new, and emerging areas of technology.

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Student Organizations

ASME - American Society of Mechanical Engineers
SAE - Society of Automotive Engineers
ASHRAE - American Society of Heating and Refrigerating Engineers

Undergraduate Advisor of Record (UGAR)
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Learn more:
ceid.utsa.edu/mechanical

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Mechanical Engineering

PROGRAM OF STUDY
2022-2024 UNDERGRADUATE CATALOG

Fall (Semester I)			Spring (Semester II)		
AIS 1243	AIS: Engineering, Mathematics, and Sciences	3	MAT 1224	Calculus II	4
CHE 1103	General Chemistry I	3	PHY 1943	Physics for Sci and Engineers I (core and major)	3
MAT 1214	Calculus I (core and major)	4	PHY 1951	Physics for Sci and Engineers I Lab	1
ME 1403	Engineering Practice and Graphics	3	POL 1013	Intro to American Politics (core)	3
WRC 1013	Freshman Composition I (core)	3	WRC 1023	Freshman Composition II (core)	3
				American History (core)	3
	Semester Credit Hours	**16**		**Semester Credit Hours**	**17**
Fall (Semester III)			**Spring (Semester IV)**		
EGR 2103	Statics	3	EE 2213	Electric Circuits and Electronics	3
EGR 2323	Applied Engineering Analysis I	3	EGR 2513	Dynamics	3
PHY 1963	Physics for Sci and Engineers II (core and major)	3	EGR 3323	Applied Engineering Analysis II	3
PHY 1971	Physics for Sci and Engineers II Lab	1	ME 3241	Materials Engineering Lab	1
EGR 1403	Technical Communication (or other core option)	3	ME 3243	Materials Engineering	3
Math/Science Elective		3	ME 3293	Thermodynamics I	3
	Semester Credit Hours	**16**		**Semester Credit Hours**	**16**
Fall (Semester V)			**Spring (Semester VI)**		
ME 2173	Numerical Methods	3	ME 3263	Manufacturing Engineering	3
ME 3113	Measurements and Instrumentation	3	ME 3541	Dynamics and Controls Lab	1
ME 3663	Fluid Mechanics	3	ME 3543	Dynamic Systems and Control	3
ME 3813	Mechanics of Solids	3	ME 3823	Machine Element Design	3
ME 4293	Thermodynamics II	3	ME 4313	Heat Transfer	3
Language, Philosophy & Culture (core)		3	Creative Arts (core)		3
	Semester Credit Hours	**18**		**Semester Credit Hours**	**16**
Fall (Semester VII)			**Spring (Semester VIII)**		
ME 4312	Thermal and Fluids Lab	2	ME 4813	Senior Design II	3
ME 4543	Mechatronics	3	ME Technical elective		3
ME 4801	Manufacturing Practices Lab	1	ME Technical elective		3
ME 4812	Senior Design I	2	American History (core)		3
POL 1133	Texas Politics and Society (core)	3	Social and Behavioral Sciences (core)		3
or POL 1213	or Civil Rights in Texas and America				
ME Technical elective		3			
	Semester Credit Hours	**14**		**Semester Credit Hours**	**15**
				Total Credit Hours	**128**

Approved Math/Science Electives

BIO 1233. Contemporary Biology I	CHE 2603. Organic Chemistry I	PHY 2103 Modern Physics
BIO 1243. Contemporary Biology II	ES 2013. Intro to Environmental Sci. I	PHY 3203. Classical Mechanics I.
BIO 1404. Biosciences I.	GEO 1123. Life Through Time	STA 2303 Appl. Prob.& Statist for Engrs.
BIO 2003. Biology of Human Reproduction	MAT 3013. Foundations of Mathematics	STA 3003. Applied Statistics
CH 1113 General Chemistry II	MAT 3103. Data Anal. & Interpretation	