

Mechanical Engineering Undergraduate Certification Programs

❑ Certificate Programs in UTSA Mechanical Engineering

- Certificate in **Aerospace Engineering** (POC: Dr. Christopher Combs)
- Certificate in **Heating, Ventilation and Air-Conditioning** (POC: Dr. Randall Manteufel)
- Certificate in **Industrial and Manufacturing Engineering** (POC: Dr. Hung-da Wan)
- Certificate in **Oil/Gas** (POC: Dr. Amir Karimi or Dr. Brendy Rincon)

❑ Procedure to enroll and obtain certificates:

1. Before or while taking the courses, fill a [Preliminary Application Form](#) to enroll.
2. After completing the courses or during the graduating semester, fill a [Graduation Application Form](#) to obtain the certificate (to be shown in transcript).

Application Deadlines: Fall: September 15 Spring: February 15 Summer: June 15

❑ More Information: <https://ceid.utsa.edu/certificates/>

❑ See following pages for program requirements.

Certificate in Aerospace Engineering

- ❑ Requirements: <https://catalog.utsa.edu/undergraduate/engineering/mechanicalengineering/#certificatetext>

A. Required courses:		3
ME 3663	Fluid Mechanics	
B. ME electives. A minimum of three courses (9 semester credit hours) selected from the following list:		9-12
ME 4183	Compressible Flow and Propulsion Systems	
ME 4953	Special Studies in Mechanical Engineering (SS in Aerodynamics)	
ME 4953	Special Studies in Mechanical Engineering (SS in Propulsion)	
ME 4953	Special Studies in Mechanical Engineering (SS in Astrodynamics)	
C. Additional electives. If only three courses are selected from list B, then an additional 3 semester credit hours must be completed from the following list:		0-3
ME 3323	Mechanical Vibration	
ME 4603	Finite Element Analysis	
ME 4723	Reliability and Quality Control in Engineering Design	
Total Credit Hours		15

- ❑ Application Forms: <https://ceid.utsa.edu/future-undergraduate/#degrees-offered>
- [Preliminary Application](#)
 - [Graduation Application](#)

Certificate in Heating, Ventilation and Air-Conditioning

- ☐ Requirements: <https://catalog.utsa.edu/undergraduate/engineering/mechanicalengineering/#certificatetext>

A. Required courses:		3
ME 4313	Heat Transfer	
B. ME electives. A minimum of three courses (9 semester credit hours) selected from the following list:		9-12
ME 4323	Thermal Systems Design	
ME 4343	Heating, Air Conditioning, and Refrigeration Design	
ME 4613	Power Plant System Design	
ME 4953	Special Studies in Mechanical Engineering (SS in HVAC Controls)	
ME 4953	Special Studies in Mechanical Engineering (SS in Refrigeration)	
ME 4953	Special Studies in Mechanical Engineering (SS in Indoor Air Quality)	
C. Additional electives. If only three courses are selected from list B, then an additional 3 semester credit hours must be completed from the following list:		0-3
EGR 3713	Engineering Economic Analysis	
ME 4593	Alternative Energy Sources	
Total Credit Hours		15

- ☐ Application Forms: <https://ceid.utsa.edu/future-undergraduate/#degrees-offered>
- [Preliminary Application](#)
 - [Graduation Application](#)

Certificate in Industrial and Manufacturing Engineering

☐ Requirements: <https://catalog.utsa.edu/undergraduate/engineering/mechanicalengineering/#certificatetesttext>

A. Required courses:		3
ME 3263	Manufacturing Engineering	
B. ME electives. A minimum of three courses (9 semester credit hours) selected from the following list:		9-12
ME 4503	Lean Manufacturing and Enterprise Engineering	
ME 4563	Computer Integrated Manufacturing	
ME 4573	Facilities Planning and Design	
ME 4583	Enterprise Process Engineering	
ME 4723	Reliability and Quality Control in Engineering Design	
ME 4953	Special Studies in Mechanical Engineering (SS in Operations Research Quality)	
C. Additional electives. If only three courses are selected from list B, then an additional 3 semester credit hours must be completed from the following list:		0-3
EGR 3713	Engineering Economic Analysis	
ME 4773	Robotics	
ME 4953	Special Studies in Mechanical Engineering (SS in Systems Modeling and Analysis)	
Total Credit Hours		15

☐ Application Forms: <https://ceid.utsa.edu/future-undergraduate/#degrees-offered>

- [Preliminary Application](#)
- [Graduation Application](#)

Certificate in Oil/Gas

- ❑ Requirements: <https://catalog.utsa.edu/undergraduate/engineering/mechanicalengineering/#certificatestext>

A. Required courses:		3
ME 3823	Machine Element Design I	
B. ME electives. A minimum of three courses (9 semester credit hours) selected from the following list:		9-12
ME 3323	Mechanical Vibration	
ME 4323	Thermal Systems Design	
ME 4373	Separation Processes	
ME 4593	Alternative Energy Sources	
ME 4603	Finite Element Analysis	
ME 4643	Pressure Vessel and Piping Design	
ME 4653	Oil and Gas Engineering and Reservoir Geomechanics	
ME 4683	Corrosion Engineering	
C. Additional electives. If only three courses are selected from list B, then an additional 3 semester credit hours must be completed from the following list:		0-3
EGR 3713	Engineering Economic Analysis	
ME 4603	Finite Element Analysis	
Total Credit Hours		15

- ❑ Application Forms: <https://ceid.utsa.edu/future-undergraduate/#degrees-offered>
- [Preliminary Application](#)
 - [Graduation Application](#)