

ADMISSION REQUIREMENTS

- Completed or pursuing a Bachelor's degree in Mechanical, Aerospace, Electrical, or Materials Engineering, or a related field in engineering or science. The degree must be from a regionally accredited U.S. institution or an equivalent foreign institution.
- Current enrollment in a graduate-level engineering program with an official transcript, or a current resume demonstrating sufficient professional preparation for the program.
- A single letter of recommendation from a supervisor or faculty member, preferably someone knowledgeable in the field of additive manufacturing.
- Undergraduate student accepted into the Fast-Track Dual-Credit BS/MS Program in Mechanical Engineering.

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START HERE!**



W.M. KECK CENTER FOR 3D INNOVATION

A unique multidisciplinary research facility, the Keck Center is focused on the use and development of Additive Manufacturing (AM) Technologies, Engineered and Structured Materials, and Advanced AM Applications. In addition, the Keck Center is the first satellite center of America Makes.



THE KECK CENTER OFFERS

- Over 80 AM systems covering all 7 ASTM AM technologies, including several customized hybrid manufacturing platforms.
- On- and off-campus facilities totaling over 53,000 square feet of research, training, and development space.
- Equipment for CNC machining, tooling, electron microscopy, mechanical testing, polymer and metal materials development, plus reverse engineering, with full post-processing and metrology labs.
- Expertise in hybrid AM, 3D-printed electronics, metal, polymer, and ceramic-based AM, as well as large-area printing applications.

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GRADUATE CERTIFICATE IN 3D ENGINEERING & ADDITIVE MANUFACTURING





ADDITIVE MANUFACTURING

Additive Manufacturing (AM) technologies have been employed over the past three decades to create mechanical objects of arbitrary and complex geometries. These innovations enhance the manufacturing supply chain through the direct fabrication of end-use parts and have driven the growth of a global industry valued at over \$20 billion, with projections exceeding \$80–100 billion. Additive Manufacturing continues to show great growth potential and possibilities for transforming the aerospace, automotive, energy, and biomedical industries around the world.



PROGRAM OVERVIEW

- The Additive Manufacturing Program is designed for working professionals and graduate students seeking specialized training in advanced 3D printing technologies and processes.
- Participants gain hands-on experience through UTEP's world-class facilities while developing the technical knowledge to lead additive manufacturing initiatives in industry or research settings.
- Courses are offered in flexible formats to accommodate busy schedules, with options for on-campus instruction, online learning, and hybrid sessions.



REQUIRED COURSES

15 graduate credit hours over 1-year period are required:

- **MECH 5351:** Introduction to 3D Engineering & Additive Manufacturing
- **MECH 5352:** Design for 3D Engineering & Additive Manufacturing
- **MECH 5353:** Advanced 3D Engineering & Additive Manufacturing
- **MECH 5354:** Design Studio I (Hands-on)
- **MECH 5355:** Design Studio II (Hands-on)



ABOUT THE DESIGN STUDIOS

The two "Design Studio" courses provide hands-on, project-based experiences that reinforce content from the lecture courses. Offered during Wintermester (Design Studio I) and Maymester (Design Studio II), these intensive sessions immerse students in additive manufacturing practice using the Keck Center's advanced AM lab. Students gain practical exposure to polymer, metal, and hybrid AM systems, along with metrology and reverse-engineering tools.

