UNLV | HOWARD R. HUGHES COLLEGE OF ENGINEERING

CAPABILITY STATEMENT: MANUFACTURING
INSTITUTION: UNIVERSITY OF NEVADA, LAS VEGAS, HOWARD R. HUGHES COLLEGE OF ENGINEERING

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OVERVIEW

UNLV has developed extensive additive manufacturing facilities for various prototyping and sample preparation.

RESEARCH CAPABILITIES

Machining Facilities:

Additive Manufacturing, 3D Scanning and Inspection Laboratory, in ollaboration with AFwerX ***http:/ / afwerxdc.org/afwerx-vegas/)*** *. The major component is a metallic 3D printing system: Markforged METAL X System, https://www.markforged.com/metal-x* . The laboratory is limited-access that may be suited for export-control tasks.

Machine Shop #1, located in the Science and Engineering Building (SEB), is primarily dedicated to research. The 2,500 square-foot state-of-the-art shop is equipped with extensive forming, machining, welding and 3-D printing facilities that include a Stratasys machine. The shop has a dedicated manager/machinist to ensure proper, efficient operation and maintenance. The facility includes two 4-ton overhead cranes, a 300-square-foot loft, a separated welding area, CNC milling machines, flow water jet cutting machine, welding equipment, conventional mills, lathes, drill presses, grinding equipment, a paint booth, metal cutting and bending equipment, and rapid prototyping machines. This machine shop is secure and accessible only to staff and approved students. The shop may be suited for export-control tasks. A detailed description is at: https://www.unlv.edu/seb/machine-equipment.

Machine Shop #2, located in the Thomas Beam Engineering Building (TBE), has a HAAS 5-Axis CNC mill, a HAAS CNC lathe, 3D printing machine (including a Stratasys machine and five smaller ones for a variety of materials), handheld 3D scanner, laser etching, welding facilities, hand operated mill & lathe, shear, band saw, drill press, bead blaster, etc. *Machinist Use access only:* CNC machining (HAAS TL-2, HAAS TM-2, HAAS VF-3), MIG welder, plasma cutter, TIG welder, manual machining, Bridgeport mill, lathes, drill presses, surface grinder, cylinder grinder, vertical and horizontal bandsaw, and a water jet and Stratasys 3D printer.

Composite Fabrication Facilities:

The Center for Materials and Structures (CMS) has various equipment for composite manufacturing including an autoclave (200°C, 100 psi), vacuum assisted resin transfer molding, wet lay-up, and tooling fabrication. Composite layup and various processes are done in a dedicated room with limited access.

Thermal Treatment Facilities:

The CMS also has thermal treatment facilities, as well as TGA/DSC, Lindberg furnace (1200°C), Lindberg thermal aging oven, and water bath.

PAST PERFORMANCE

NASA, National Science Foundation, Department of Defense, Department of Energy