

Equipment List

EQUIPMENT

3D Printing/Additive Manufacturing

3D Systems ProJet 5500X – Multi-material 3D printer with 21x15x11.8 in. build volume, 750x750x890 DPI resolution, 0.0011 in. layers
CUBE 3D printer
DMG MORI LASERTEC 65 3D hybrid (laser deposition welding & milling)
IPG 3kW fiber laser
IPG 10kW fiber laser with beam splitter and fiber optic delivery
MakerBot Replicator 3D Printer
Mark Forged 3D Printer with 12.6x5.2x6.1 in. build volume, capable of reinforcing parts with continues fiber, Kevlar, and Fiberglass
Optomec LENS 850R – 5-axis powered deposition metal additive manufacturing center
Projet HD-3500 Plus

Deburring

Air turbine Deburring

Design Stations

3D Architecture design & measure
3D General Mechanical & Electrical Design
3D Mechanical & Thermo Analysis
3D Modeling road & traffic operations

Drilling

Clausing Drill Press
Rockwell Model 20 Drill Press

EDM

Sodick SL400G wire EDM with linear motor drive

Grinding

Bench Grinder
Hand Grinder
Surface Grinder

Inspection/Reverse Engineering

AMRAY Electron Microscope
Baty Optical Comparator
Bruker's Dektak® stylus profilometer
CCAT structured light scanning — with standalone pivoting turntable or on-machine capability
Counting Scale
Dakotaq Ultrasonic Flaw Detector
Fowler Digital Depth Gage
Fowler Digital Calipers
Fowler Digital Height Gage
Fowler Digital Micrometer
Fowler Digital Run-out Gage
Fowler Holematic (Holes up to 4.0")
Fowler Twin Beam Height Gage
GOM ATOS Triple Scanner with 5108 ScanBox
Hexagon Manufacturing Global Classic Coordinate Measuring Machine (CMM)
Keyence VHX-500 and Nikon SMZ 1500 Optical Microscopes – metallography microstructure, surface texture
Keyence Digital Microscope
Magnaflux Yoke Kit
Mutitoyo SJ-210 Stylus Profilometer – surface roughness measurement
Olympus Inverted Stage Microscope
Optiv Classoc 321GL Coordinate Measuring Machine (CMM)
Romer Absolute Arm CMM
Trimus Vectra Height Gage
Weight Scale

Laser Cutting/Marking

120 Watt Full Spectrum Laser
Epilog Mini Laser
Epilog 30 Watt Laser
IPG 20W fiber laser marker
Laser Engraver

Milling, Horizontal CNC

Bridgeport with SX-15 controls
DMG MORI ULTRASONIC 65 monoBLOCK 5-axis milling machine
Haas 5-Axis Milling Machine

Mill-Turn,CNC

Mazak Variaxis 630-5X-II-T – 5-axis mill/turn VMC

Milling, Vertical CNC

Bridgeport Vertical Milling Machine

Haas Mini Mill – 3-axis vertical milling center (VMC) with removable 4th axis rotary table

Haas Office Mill

Modela Pro MDX-540

ZIMMERMANN FZ 33 5-axis milling machine for fiber reinforced composites

Milling, Manual

Bridgeport Miller

Pressing

Carolina Shop Press 60000

Sanding

MSC 6" x 48" Dry Belt Sander

Wet Sander for aluminum

Wood Sander

Sawing

Cosen MH-270M Band Saw

Rigid Chop Saw

Rigid Miter Saw

Rockwell Model 20 Vertical Band Saw for metal

Rockwell/Delta Band saw for wood

Turning, CNC

Citizen M Swiss Screw Machine

Haas Office Lathe

Haas ST-10 Lathe – with high pressure (1,000 psi) thru-tool coolant delivery system

Haas TL Lathe

Turning, Manual

3 Jaw Chuck Manual Lathe

4 Jaw Chuck Manual Lathe

Birmingham-Lux-1340G

Turn-Pro Lathe

Testing

Abbe Digital Refractometer
Baldwin Mechanical Tester for heavy and construction materials
Balwin Impact Tester
Bionix Servohydraulic Test System for measure and design of biomedical materials and structures
Brookfield Viscometer
Brinell Hardness Tester
Caron Engineering TMAC – horsepower and vibration monitoring
Faro Articulating Arm CMM
Fatigue Tester
Fowler Dial Test Indicator
Fluke Multimeter
Instron Mechanical Tester
Izod Impact Tester
Kistler 9255C Dynamometer – collect cutting forces and moments of inertia
Louis Small 8BLP Hardness Tester
Metallographic Prep Suite
Muffle Furnace
NCSIMUL- CNC simulation, verification, and validation
Nikon Digital Microscope iNexiv VMA 2520
Plastometer Densimeter
Recirculation Water Flume for measuring open channel water flow, hydraulic jump etc.
Recipricating Abraser
Tecequipment SM107 Thin Cyclinder apparatus tester
Tecequipment SM103 Unsymmetrical Cantilever Tester
Tinius Olsen Torsion testers
TMI 43-1 Impact Tester
VERICUT/OptiPath – CNC simulation, verification, optimization, validation
Vickers Hardness Tester
Wilson Rockwell Hardness Tester
Wind Tunnel for measuring moving air up to 150 mph
Zygo Optical Profiler for non-contact surface roughness & surface finish measurement

Welding

Bluco Welding Table
Hypertherm Plasma Cutter
Lincoln FCAW Welder
Lincoln GMAW Welder
Lincoln MIG Welder
Lincoln TIG Welder
Praxair CNC Plasma Cutter
Lincoln Manual Plasma Cutter
Lincoln SMAW Welder
Spot Welder

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Software List

SOFTWARE

3D Capture
ANSYS Fluent
AutoCAD
Depco Lathe
Depco Mill
Geomagic
Labview
MasterCam
Matlab
Orcad/Pspice
Siemens NX
Solidworks
SolidCam
Third Wave Systems Production Module for physics-based NC program optimization
Vissim
Volumill

Services/ Capabilities

SERVICE/CAPABILITY

3D Capture Scanning
3D Printing Plastic (Single and Multi-Material)
3D Printing Metal (Parts up to 30 inches)
Assembly - Smart System Mechatronics Lab for Full Project Prototyping
Audio Engineering Recording Studio (Euphonix Equip)
Automation Design and Evaluation
Cutting/Sawing
Deburring
Deflection Testing
Design Services (Mechanical & Electrical)
Drilling
Electronic Circuit Building & Testing
Fabrication Services (Most Materials)
Flow testing
Hardness Testing
Impact Testing
Milling (3-axis precision machining of parts up to 30 inches)
Milling (5-axis precision machining of parts up to 20 inches in length and 28 inches in diameter)
Machining Optimization Services
Material Analysis, Morphology, Element Analysis
Measuring
Non-Contact Inspection
Printed Circuit Board Fabrication
Quality Testing (Wide Array of Non-Destructive Testing Capabilities)
Reverse Engineering geometry/solid model (parts up to 20 inches)
Stress and Strain Testing
Structured light scanning (parts up to 120 inches cubed)
Surface Roughness & Finish Testing
Tool Setting
Turning (parts up to 20 inches)
Torque Testing
Welding
Wind Tunnel Testing
Wire EDM (parts up to 9 inches)