

seniordesign.engr.uconn.edu

Senior Design

UConn
SCHOOL OF ENGINEERING



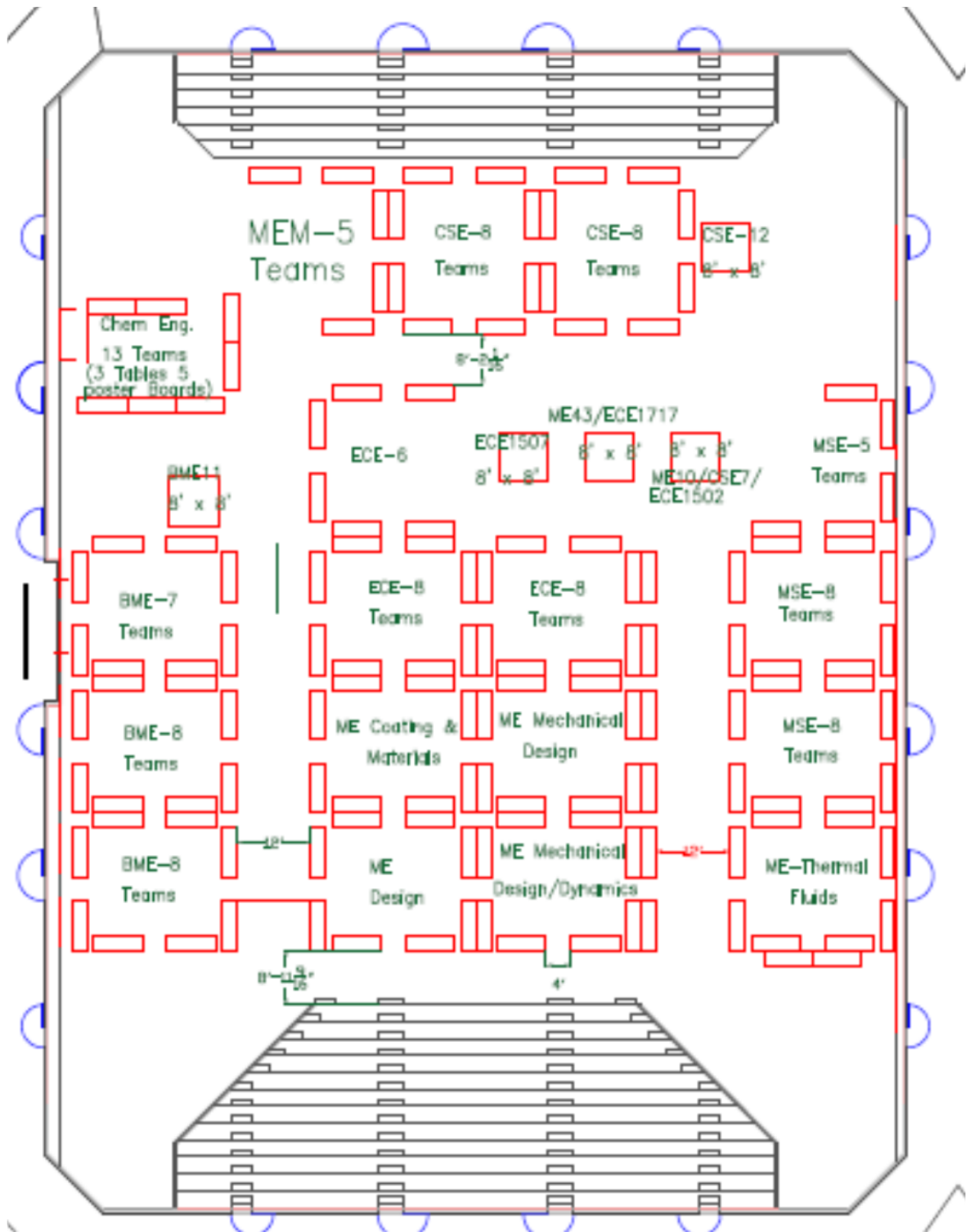
FLOOR PLAN
DEMONSTRATION DAY

GAMPEL PAVILION, STORRS, CT MAY 1, 2015

Senior Design Demonstration Day

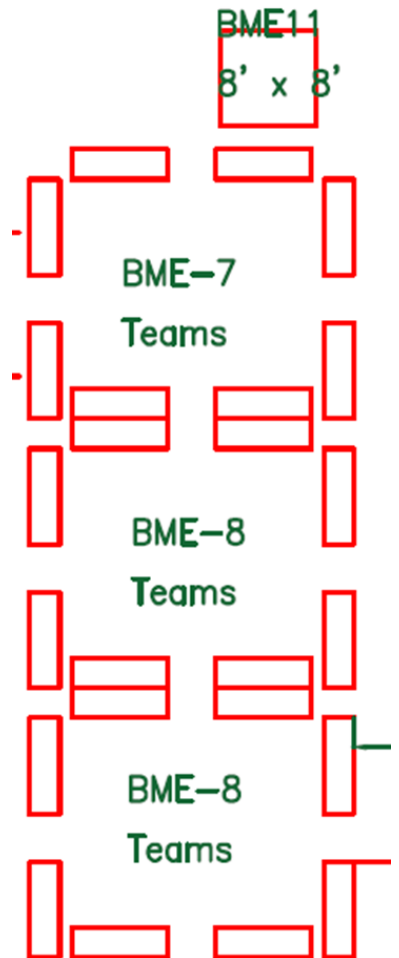
University of Connecticut ▪ Storrs, Connecticut

Gampel Pavilion ▪ May 1, 2015



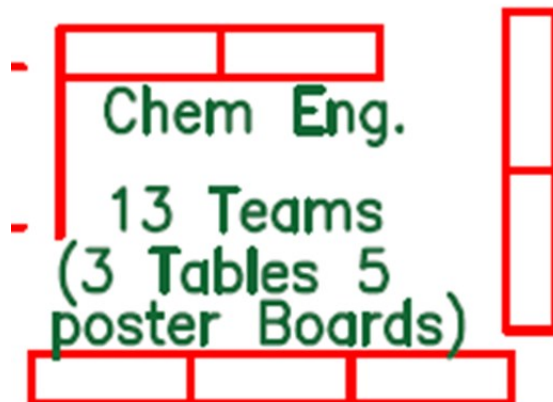
Biomedical Engineering - Floor

- 1 Design of a PCR Thermocycler Using an Arduino Microcontroller
- 2 Design of a Field-Portable Microscope for use in Resource Limited Environments
- 3 Biodegradable Injectable Implant for Long-Term Delivery of Contraceptives and Other Therapeutics
- 4 Design and Development of Two Component Hydrogel Ejector
- 5 Evaluating and Designing ECG Electrodes for Stress Monitoring
- 6 Low-Cost Transport Neonatal Incubator
- 7 NI myDAQ Fetal Doppler Phantom
- 8 Two Phase Growth Factor Delivery For Cartilage Regeneration
- 9 Completely Automated Device to Concentrate Bone Marrow Aspirate
- 10 Miniature Cell Culture Incubator for Live Cell Imaging
- 11 Noninvasive Device for the Diagnosis of Acute Compartment Syndrome
- 12 Integration of Motion Capture, Wireless EMG and Force Platform Data in to Any-Body Technology to Create a Musculoskeletal Leg Model for Injury Diagnostics
- 13 Stress Urinary Incontinence Device
- 14 Inexpensive Tester for Plantar Neuropathy
- 15 Virtual Reality Technology for Gait Rehabilitation
- 16 Three-Dimensional Imaging and Analysis of Cartilage Morphology
- 17 iOS Based Tocodynamometer
- 19 Engineering a Microfluidic Organ Model Using 3-Dimensional Micropatterned Cellular Constructs
- 20 Next Generation ACL
- 21 Design of simple device for accurate measurement of human blood viscosity in oxygenated and deoxygenated conditions
- 22 Development of a Motorized Knee-Ankle-Foot Orthosis for Mobility Assistance
- 23 Modeling Bone Fixation Implants with Absorbable Polymers Using 3-D Printing



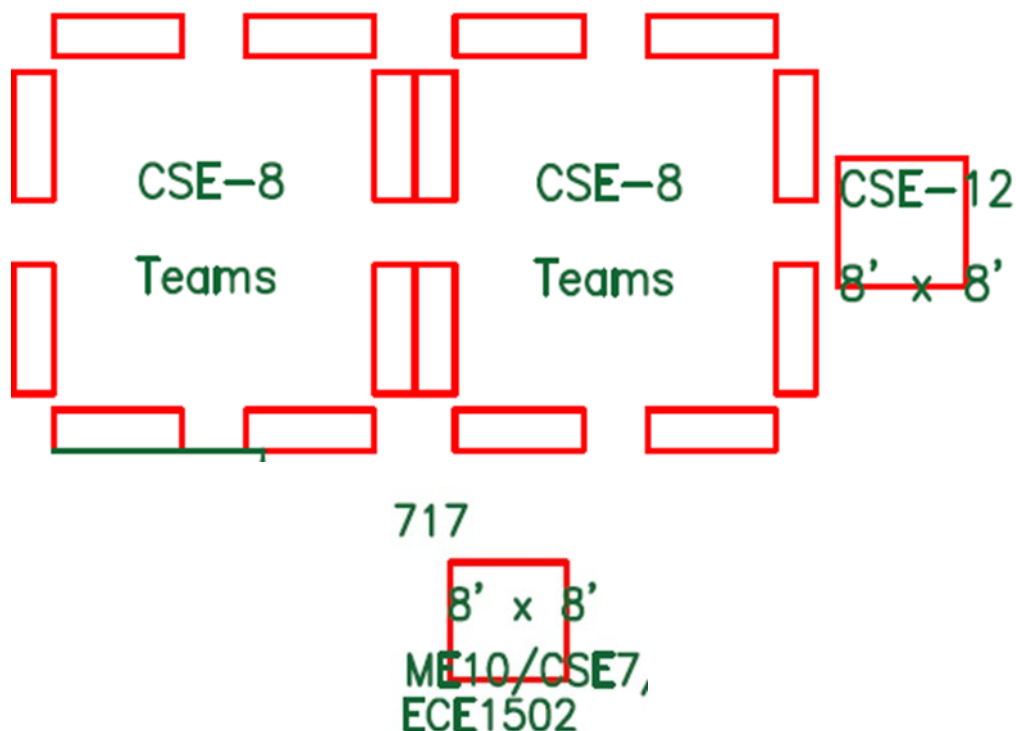
Chemical Engineering - Floor

- 1 Oxygen Generation via CO₂ and H₂O splitting for NASA Manned Space Missions
- 2 In-Situ Resource Generation and Optimization on Mars
- 3 Designing a Human Habitat on Mars
- 4 Defluoridation of Ethiopian Groundwater for Human Consumption
- 5 The Formulation and Stability Analysis of Erythritol-Based Ice Cream
- 6 Reduced Sugar Ice Cream for the UCONN Dairy Bar
- 7 Integration of a Falling Film Gas Stripper into an Osmotic Heat Engine
- 8 UConn Water System Optimization
- 9 Unilever Wastewater Treatment for Facility Irrigation
- 10 Novel Production and Purification of Manganese Dioxide for Duracell's Alkaline Battery
- 11 New Environmentally Friendly Flame Retardants
- 12 Gas Absorption with a Wetted Wall Column and Sipping Mechanism
- 13 Desulfurization of Diesel Fuel



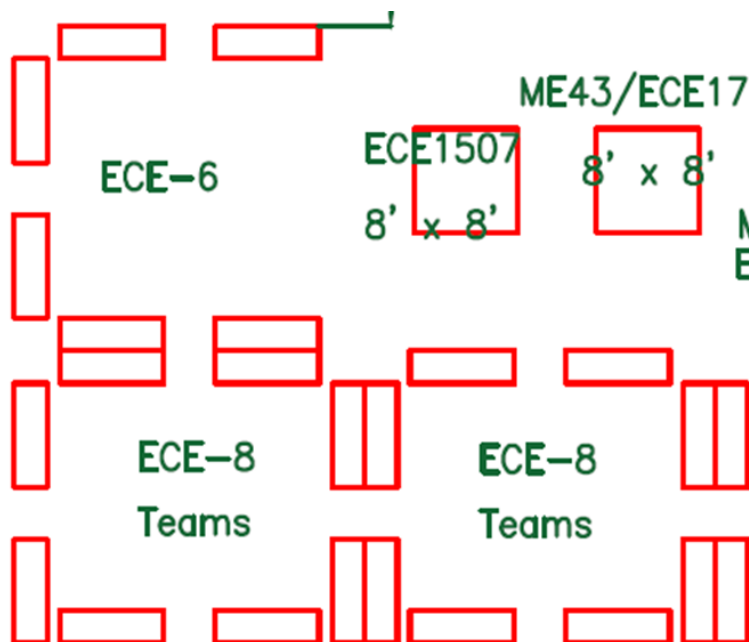
Computer Science & Engineering

1	Route Bidding Solution	Computer Science & Engineering
2	IBM Blue Rideshare	Computer Science
3	AcroFinder	Computer Science & Engineering
4	Logicbroker Mobile Packing Application	Computer Science & Engineering
5	Belcan Relational Database: Information Management Tool	Computer Science & Engineering
6	Cloud-Based Transcriptome Quantification from RNA-Sequencing Reads	Computer Science & Engineering
7	F4U Corsair Aircraft Fight Simulator	Computer Science & Engineering
8	WirelessHART	Computer Science & Engineering
9	Mass Mailer	Computer Science
10	SCANN3D HUB	Computer Science
11	Twitter Data Acquisition and Analysis	Computer Science
12	Drone Wars	Computer Science & Engineering
13	Integrated Pest Management App	Computer Science
14	Parkshark	Computer Science & Engineering
15	StormWise	Computer Science & Engineering
16	J1	Computer Science & Engineering
17	Electronic Engine Control Fault Data Analysis	Computer Science & Engineering



Electrical and Computer Engineering - Floor

- 1501 High Frequency Piezo-Driven Droplet Maker
- 1502 CT Corsair Simulator Restoration
- 1503 Design and Construction of Unmanned Air Vehicles
- 1504 Command and Control of Autonomous Underwater Vehicles
- 1505 A Robotic Rehabilitation Device for Sit-to-Stand Assistance
- 1506 Induction Motor Emulation
- 1507 Software-Defined MIMO Radio Transceiver
- 1508 Battery Energy Storage with an Inverter that Mimics Synchronous Generators
- 1509 Wireless Sensor Monitoring
- 1510 Augmented Reality
- 1511 Solar Panel Positioning Controller
- 1512 Automated Counterfeit IC Physical Defect Detection
- 1513 Upgrade Angular Displacement Transducer
- 1514 Solar Panel Project (UConn Spring Valley Farm)
- 1515 UI Microgrid
- 1516 Energy Efficiency Planning
- 1517 Smart Ocean Wave Power Generator System
- 1518 Collaborative Jamming and Anti-Jamming in Underwater Acoustic Networks
- 1519 Design and Construction of a Photodetector Array for Medical Imaging



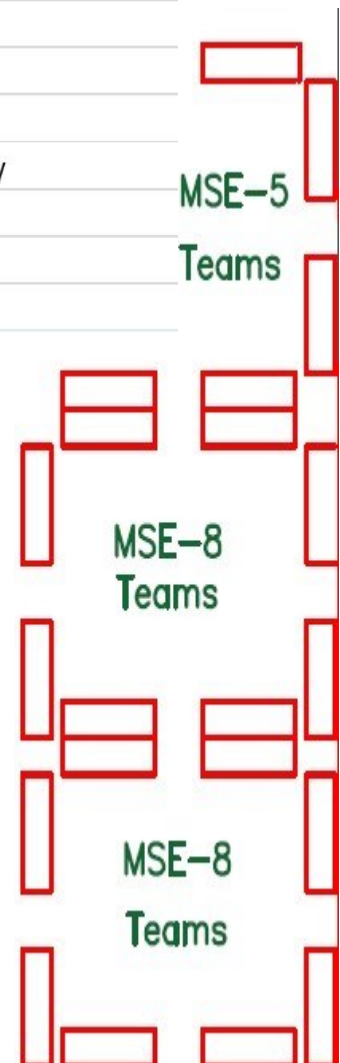
Management & Engineering for Manufacturing - Floor

- 1 MorphoTrust Process Analysis and Optimization
- 2 Frito Lay-Killingly Drain Covers Design
- 3 Thermoplastic Recycling Device in the Third World
- 4 Waste To Water Bio EZ Prototype Testing
- 5 Tyco SimplexGrinell



Materials Science and Engineering - Floor

1	Additive Metal Processing for the Production of Surgical Device Components
2	Salt Penetrometry for Design of Reduced Defect Filters
3	Marmon Utility ESP Cable Systems
4	Al-Li Alloy Peening and Impact on HCF Behavior
5	Impact of Overaging on Mechanical Properties
6	Temperature and Time Limitations on PTFE Material
7	Oxidation Effects on Nickel Base Superalloys at Intermediate Temperatures
8	Local Heat Treatment
9	Hydrogen Embrittlement in High Purity Copper Conductors
10	Tooling and Processing Optimization for Complex Geometry, Nonferrous Castings
11	Design of Stress-relief Heat Treatments of Austenitic Stainless Steels
12	Impact Testing of Circuit Breaker Enclosures to Simulate Short Circuit Conditions
13	Zeiss MultiSEM Sample Mount
14	DLMS in IN718 Heat Treatment
15	Evaluation of Electric Discharge Machining (EDM) of Aerospace Alloys
16	Mechanical Properties of Al6061 with Al4043 Welds
17	UTAS Additive Manufacturing of a Cold Plate
18	Bimodal HDPE Resin Grades for Bottle Weight Reduction and Equivalency
19	Improving Tensile Strength Consistency Around High Carbon Steel Rings
20	Non-Destructive Test for Incoming Nylon Fabrics Prior to Metalizing
21	Improved Methods of Pretreating Polymer Fiber Prior to Metalizing



Mechanical Engineering - Floor

- 1 Adaptive wing technology
- 2 Coatings Evaluation for Concentrating Solar Power Systems
- 3 Variable Nozzle Pressure Drop Evaluation
- 4 High Load Clamping Redesign
- 5 Passive Damping Analytic Development
- 6 Design of a Compact Hydraulic Copier for Vertical Lathe
- 7 Improvements to Reliability Test Fixture
- 8 Diesel Engine Fuel Pump:
- 9 Portable A1 System
- 10 CT Corsair Cockpit Simulator
- 11 Model and redesign of electrical panel board mounting tabs due to seismic oscillation
- 12 Testing of Surface Wear on Floor Mounted Fittings
- 13 Innovative Brake Design for Tall Buildings
- 14 Developing a Pressure Regulating Valve using Pulse Width Modulation Control
- 15 Prediction of Static Fracture of Bearing Inner Members in Slot Loader Spherical Plain Bearings
- 16 Optimization of Support Structure for Additive Manufacturing Processes
- 17 Bolt Joint Stiffness Analysis Method
- 18 Variable high/low flame velocity torch for gradient rig
- 19 Electrical Capacitance Tomography (ECT) for Main Burners
- 20 3D CFD of Honeycomb Knife Edge Seals
- 21 Atmospheric Turbulence Model Development
- 22 Vibration Damping System
- 23 Air Stream Integrated Heat Exchanger System Performance
- 24 Male Body Grooming System
- 25 Rivet tension capacity, automated testing
- 26 Un-Crashable Helicopter
- 27 Express Swing Security Solution
- 28 Reinforced Aluminum Wear Evaluation
- 29 Phase Change Material Heat Sink For Cooling of an Electronics Ring
- 30 Low Noise Cooling Blower
- 31 Bio-EZ Mixing to Optimize throughput
- 32 Bio-EZ Weighing System
- 33 RCP Seal Thermal Analysis
- 34 Tornado Missile Impact Modeling
- 35 A Mathematical Formula To Determine The Feasibility For Immediate
- 36 Centrifugal Pump Passive Runout Control Device Design
- 37 Magnetic suspension bearing
- 38 Modeling of electron beam melting process
- 39 Electron band structure modification in mesoporous bismuth networks
- 40 Simulation of Turbulent Flames Subjected to Local Extinction
- 41 Gas Sampling Valve
- 42 Developing an electromagnetic acoustic transducer-based device to facilitate non-contact modal analysis of engine bladed-disks
- 43 Smart Ocean Wave Power Generation System
- 44 Velocity Field Measurements using PIV for Aircraft Emission Reduction
- 45 Additive Manufacturing of a Cold Plate

Mechanical Engineering - Floor

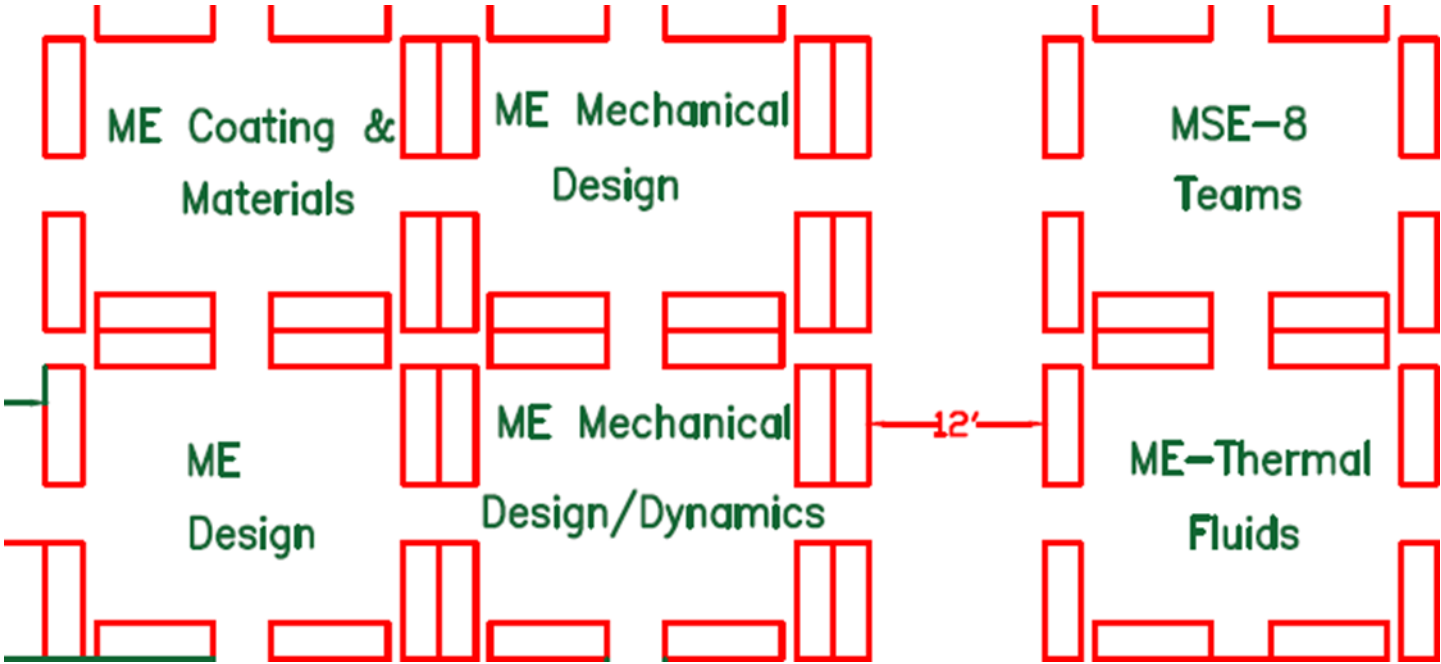
ME43/ECE1717

8' x 8'

8' x 8'

ME10/CSE7/
ECE1502

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Civil Engineering - Mezzanine

- 1 Mansfield Center Transfer Station Retaining Wall Project
- 2 Mansfield Center Transfer Station Retaining Wall Project
- 3 Waterbury DOT Retaining Wall
- 4 ConnDOT Retaining Wall Redesign in Waterbury, CT
- 5 Offshore & Coastal Projects: Design of Hose Tower
- 6 Offshore & Coastal Projects: Design of Hose Tower
- 7 Rehabilitation of the Merritt Parkway Bridge over the Saugatuck River
- 8 Rehabilitation of Structure No. 00728, Route 15 over the Saugatuck River in Westport, CT
- 9 Replacement Design for Bridge 09223R
- 10 Replacement Design for Bridge 09223R
- 11 Mansfield: Hunting Lodge- Birch Road Roundabout Redesign
- 12 Mansfield Roundabout Replacement Design
- 13 East Coast Greenway Connection in Bolton Notch
- 14 East Coast Greenway Connection in Bolton Notch

Environmental Engineering - Mezzanine

- 1 Remediation of Legacy Petroleum Refinery Waste
- 2 Woodridge Lake Recovery
- 3 University of Connecticut Water Reuse Management Plan
- 4 North Branch Park River Watershed Improvement Project: Connecticut Historical Society