Capstone Design Projects

Vermont State University Dept of Engineering

Spring 2025

BACHELOR

Program(s): BS-Architectural Engineering Technology and BS-Mechanical Engineering Technology (Renewable Energy Concentration)
Course number/name: ARE 4720, Senior Project
Capstone presentation/event date(s) and time(s): May 7, 3-4:30 PM
Description: Students will describe plans for a renovation to Old Dorm on the Randolph campus to a “net zero” design and apartment-style living quarters
Location: Randolph Campus, Conant 102 (and via Zoom)
For more information, contact: scott.sabol@vermontstate.edu

Program(s): BS-Electromechanical Engineering Technology and BS-Electrical Engineering Technology
Course number/name: ELM 4702: Senior Project
Capstone presentation/event date(s) and time(s): May 5, 1-4 PM
Description: Students have been working on 5 different industry sponsored projects and will demonstrate their working prototypes and give presentations on the design concepts of each. Each project involves a mix of mechanical, electrical, and software design.
Location: Randolph Campus, Judd Hall (and via Zoom if requested)
For more information, contact: andre.st.denis@vermontstate.edu

Program(s): BS in Mechanical Engineering (Manufacturing Concentration)
Course number/name: MEC 4721
Capstone presentation/event date(s) and time(s): Monday, May 5, 2025 - 4:00 to 6:00 p.m.
Description:

- **Sonnax Transmissions:** The team of Clay Thompson, Sarah Grant and Matt Noel are developing and implementing a vertical turning operation for a 5-axis CNC machine that will allow the client to machine a transmission yoke in one set-up. The operation will also include a "lights-out" element that will allow the operation to run without operator intervention.
- **The Chocolate Butcher:** The team of Sophia Rivera and Paul Dana are designing and building a mechanical chopping mechanism that chop raw chocolate slabs into smaller, bite-sized pieces, while still preserving the "look" of broken chocolate, which is the Chocolate Butcher's trademark. They are also incorporating safety measures to insure there are no "operator" dangers. All of the equipment must be made from food grade stainless steel, which adds an extra challenge to this capstone.

- **Global Foundries:** The team of Eric Hannett, Ryan Antonivich and Josua Karhan are working with Global Foundries on two projects. The first is to design and build a fixture that will allow the application of a large O-rings on a vacuum seal that is easy to operate and takes much less time than the current "manual" operation. They are also reverse engineering and replicating a robotic arm end effector for a silicon chip dryer that is no longer available as an aftermarket product.

Location: Randolph Campus, Conant 102 or Judd Gym (TBD)

For more information, contact: Christopher Gray at christopher.gray@vermontstate.edu

ASSOCIATE

Program(s): Mechanical Engineering
Course number/name: MEC 2720
Capstone presentation/event date(s) and time(s): May 7, 2025, 4:30 PM
Description: Students will present the results of six mechanical capstone projects.

Wood Stabilization Oven
Snow Groomer
Automated Valve for Sintering Furnace
Rugged Tilther
Punch Press
Wire EDM Cutoff Fixture

Location: Randolph Campus, Judd Gym
For more information, contact: Daniel.Costin@VermontState.edu