

Laboratory Facilities

Drosdick Hall, a state-of-the-art research and teaching facility, is the home of Villanova University's College of Engineering. The largest academic building on campus, Drosdick Hall opened in 2024 following a \$125 million, 150,000-square-foot expansion project. The expansion more than doubled the size of Villanova's previous engineering building, creating a 63% increase in overall lab space in a facility designed to further the College's commitment to igniting change through interdisciplinary research and innovative teaching and learning.

The Chemical and Biological Engineering Department's laboratories provide opportunities for students to integrate fundamental principles in thermodynamics, fluid mechanics, heat transfer, mass transfer and reaction kinetics with hands-on experimental planning, performance and analysis. Students use state-of-the-art facilities to participate in biotechnology, materials science and catalysis research. Computer clusters support research, and a computer-equipped classroom enhances laboratory, process-control and process-simulation experiences.

The Civil and Environmental Engineering Department is committed to hands-on education in its experimental, computational and design laboratories. Facilities are dedicated to instruction and research capabilities in environmental engineering, geology, soils, structures, transportation and hydraulics. Facilities support undergraduate instruction as well as both undergraduate and graduate research. The department's Faris Structural Engineering Teaching and Research Lab provides 5,000 square feet of useable floor space to test full-scale structural members up to 90 feet in length and includes two smaller laboratories for testing construction materials under various environmental conditions. The University campus is also used as a working laboratory for education and research on stormwater management, through a vast network of interconnected sensors.

The Electrical and Computer Engineering Department laboratory facilities are available to serve as important components of study in specialized areas as well as for core studies. Laboratories are in place for instruction and research in control systems, digital systems and microprocessors, electronics, signal processing, solid state devices, microwaves, microcontrollers, advanced electronics, advanced computer systems, antenna anechoic chamber, antenna research, communications and student projects.

The Mechanical Engineering Department laboratories provide an environment for students to reinforce their understanding of the fundamental principles of mechanical engineering and apply that knowledge in experimental analysis and problem-solving. Students have ample opportunities for hands-on learning and research with access to facilities that include a wind tunnel as well as laboratories for manufacturing processes, thermodynamics, materials testing and material science, control, vibration, stress, heat transfer and fluid mechanics. A makerspace equipped with CNC milling machines and lathes, a variety of 3D printers, a welding lab, and a machine shop, provides students the tools to build prototypes for design projects.