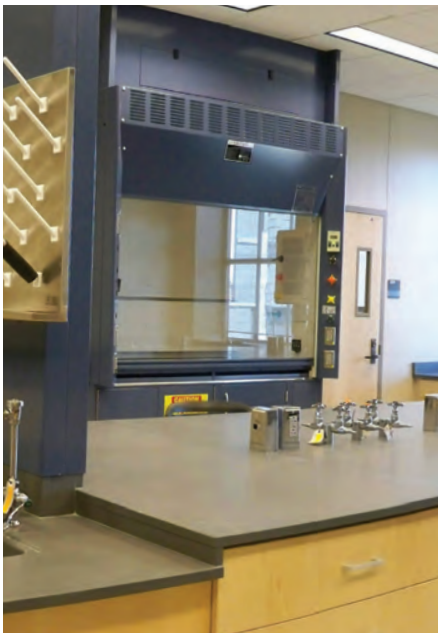
TEXAS TECH UNIVERSITY
Edward E. Whitacre Jr.
College *of* Engineering™

Undergraduate Laboratory Renovation Initiative

Overview

The Whitacre College of Engineering Undergraduate Laboratory Renovation Initiative is an effort to properly equip and modernize departmental teaching laboratories. This is an interdepartmental initiative to enhance the learning experience for all undergraduate students. By providing undergraduate students with modern equipment and aesthetically pleasing labs, these hands on teaching environments will better prepare our students for industry.



All of the undergraduate majors within the college participate in essential laboratory experiences as part of their curricular programs. An emphasis on laboratory-based team learning is consistent with the basic goals of the college. The industrial size and quality of laboratory and research equipment in the college facilitates this effort.

Keeping the college's extensive variety of equipment up-to-date with modern techniques and processes is not possible without private support, as most engineering courses have a laboratory component. Texas Tech places a priority on undergraduate research and practical experiences in the classroom, which necessitates the need for state-of-the art equipment and modernization of many of the undergraduate labs.

Frequently Asked Questions:

Why are the renovations needed and how will they improve the education received by engineering students?
As Texas Tech continues to move toward Tier One status, it is imperative we provide students with training on current technology with innovative techniques and procedures. Updated laboratories will not only improve the standard of education offered, but they will help to attract and retain the best and brightest engineering students.

How will the funds be used?
Funds will be used to purchase and/or refurbish lab equipment and supplies and to make any necessary updates to the facilities.

When will the improvements be made?
The dean of the college, using input from department chairs and the facilities planning office at Texas Tech, will prioritize the order in which the renovations will be made. This will be based on the area of greatest need and the availability of funds for specific labs.

How do I make a gift towards the initiative?
Contact the Whitacre College of Engineering Development Office at 806.742.3451 to personally speak with one of our development officers.

How are laboratory naming gifts recognized?
Laboratory naming gifts are acknowledged on signage in the respective laboratories, printed recognition in college publications, and/or on Whitacre College of Engineering websites. All namings must be approved by the Texas Tech Board of Regents.

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Naming Opportunities

	Minimum Gift
Department of Chemical Engineering	
Undergraduate Teaching Labs *The Chemical Engineering Unit Operations Laboratories consists of transport, process control, and polymer labs.*	**$75,000**
Department of Civil and Environmental Engineering	
Environmental Engineering Teaching Laboratory *The Environmental Engineering Teaching Laboratory is a required laboratory class for both undergraduate and graduate civil and environmental engineering students.*	**$35,000**
Geotechnical Engineering Laboratory *The Geotechnical Engineering Laboratory is used for soil sample preparation, characterization and strength tests, as wells as consolidation tests and graduate research experiments.*	**$225,000**
Structures Laboratory *The Structures Laboratory provides undergraduate and graduate students a location for conducting large-scale experiments on structural members.*	**$350,000**
Mechanics of Fluids Laboratory *The Mechanics of Fluids Laboratory provides students with an understanding of the basic principles of controlling fluid properties; hydrostatics; pipe flow; pumping systems; open channel flow; conservation of mass, energy and momentum; as well as design procedures used in engineering practice.*	**$75,000**
Construction Materials and Mechanics of Solids *The Construction Materials Laboratory teaches students how to determine and interpret the engineering properties of common construction materials. The Mechanics of Solids Laboratory enhances a student's understanding of the mechanical properties of materials.*	**$125,000**
Department of Construction Engineering and Engineering Technology	
Computer Labs *The Construction Engineering Computer Lab (CECL) is used to support one senior and two junior Construction Engineering labs taken by approximately 100 students each year. The Engineering Graphics Lab (EGL) is an undergraduate lab that is used to teach two freshmen undergraduate classes. The Mechanical Engineering Technical Laboratory (METL) supports several courses, which require exposure to and training in the use of table-top CNC machining.*	**CECL: $50,000** **EGL: $100,000** **METL: $100,000**
Department of Electrical and Computer Engineering	
ECE Undergraduate Laboratory *The Electrical Computing Engineering Undergraduate Laboratory is utilized by several classes and provides a venue for undergraduate project work.*	**$600,000**
Telecommunications and RF Laboratory *This lab allows students to measure and characterize signals commonly seen in telecommunications and RF applications.*	**$150,000**
Robotics, Controls & Mechatronics Laboratory *A robotics, controls, and mechatronics lab will be developed to serve the microcontroller/embedded systems project lab I and to support undergraduate robotics and embedded systems projects.*	**$225,000**
Undergraduate Fabrication Facility *A new undergraduate fabrication lab will be developed, allowing for complete printed circuit board design, milling, and assembly.*	**$150,000**
Undergraduate Measurements Facility *This facility allows students to make basic measurements using state of the art modern equipment.*	**$150,000**
Bioinstrumentation Lab *This lab serves ECE 4333 and 4334 and is useful to students who do senior projects in the biomedical instrumentation and signal processing areas.*	**$250,000**
MEMS Labs *Microelectromechanical (MEMs) Systems are embedded in every modern system, using sensors that serve many purposes in industrial, communications, biomedical, and other areas.*	**$35,000**
Department of Industrial Engineering	
Advanced Manufacturing Laboratory *The Advanced Manufacturing Laboratory in the Department of Industrial Engineering is an instructional facility for undergraduate students to gain hands-on experience in the stages of product manufacturing.*	**$150,000**
Ergonomics Laboratory *The Industrial Engineering Undergraduate Ergonomics Laboratory provides students an opportunity to understand and measure parameters related to the capabilities and limitations of workers.*	**$75,000**
Department of Mechanical Engineering	
Mechanics and Materials Laboratory *The Mechanics and Materials Laboratory provides undergraduate students a hands-on learning experience for information that is presented in theoretical courses.*	**$100,000**
Dynamic Systems & Control Laboratory *The Dynamic Systems and Controls Laboratory teaches students practical applications of concepts from dynamics, system dynamics, vibration, and control.*	**$200,000**
Machine Shop Laboratory *The Mechanical Engineering Machine Shop laboratory is used for the manufacturing and assembly of senior design students' projects, as well producing tangible parts and assemblies for professors' research in the department.*	**$500,000**
Thermal Fluid Systems Laboratory *Thermal Fluids Systems Laboratory is a course that integrates the theory learned from core thermal-fluids courses with experiments providing a hands-on experience.*	**$225,000**