

Electrical Engineering Technology

Electrical engineering is a broad and challenging field and the ODU electrical engineering technology (EET) program offers two option areas that provide an excellent career foundation.

Electrical Systems Technology (EST) and Computer Engineering Technology (ComET)

These programs provide the broad skill set required for entry-level success and long-term progression in these dynamic career areas. Students in electrical engineering technology work with faculty possessing a wealth of industrial experience and this is shared in the classroom. A senior capstone design project allows students to apply the practical knowledge they have gained. Students learn by developing designs and projects that are often presented to and funded by industry to solve real-world problems.

Department of Engineering Technology

The Department of Engineering Technology resides in the Frank Batten College of Engineering and Technology. Its primary goal is to prepare students for successful technology-based careers. Our B.S.E.T. programs are developed specifically for students who desire a technical baccalaureate education with an emphasis on applications of engineering and technical knowledge to solve actual workplace problems. The department offers two program alternatives leading to the B.S.E.T. degree.

One degree alternative meets the needs of students who are interested in practice as professional engineers or land surveyors and includes concentrations in civil (CET), electrical (EET) and mechanical (MET) engineering technology. These programs are accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (TAC of ABET), (The Accreditation Board for Engineering and Technology Inc., 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, Phone (410) 347-7700, www.abet.org), and graduates may apply to take the Fundamentals of Engineering (FE) or Land Surveying (FLS) examination in Virginia and in most states. These exams are the first steps toward licensure as a professional engineer or land surveyor.

The second program alternative is a more flexible program that supports educational goals related to industry and military careers that do not require professional licensure: the B.S.E.T. with a concentration in general engineering technology.

Special Opportunities

A.A.S. Transfer Credits and Articulation

There are a number of articulation agreements that integrate the EET program with a range of associate in applied science (A.A.S.) degrees. As many as 75 of the credits toward a baccalaureate degree can be earned through completion of approved A.A.S. degree programs at a community college, coupled with completion of approved supporting courses to complement the associate degree. Students should consult their community college advisors for details on current transfer/articulation agreements and to select the correct transfer courses in areas such as mathematics, science and general education.

Degree Completion

Electrical engineering technology students can pursue their studies on the main campus in Norfolk in a traditional four-year program of study. Alternatively, many students complete an A.A.S. degree at a community college and finish the upper two years of baccalaureate study either on ODU's main campus or through the ODU Teletechnet system.

ODU is a national leader in distance education through its Teletechnet system. This system is particularly attractive to career and family-bound students who are not able to come to the main campus to complete their degree. Through this system, courses are delivered to selected sites at industry locations and community colleges in Virginia and across the nation, and directly to students at home or in the workplace worldwide. There are two primary methods to deliver distance learning courses:

- Satellite links allow students to participate in live classes by television and two-way voice connections at selected sites.
- Streaming video allows students on high-speed Internet connections at home or at work to participate in live classes.

When students miss class due to business travel, etc., these methods allow taped or digitized copies of class to be available at a later time. In all cases, distance students maintain close interaction with faculty by a number of means including telephone, e-mail, and Internet bulletin boards/study sessions.

Using Teletechnet, it is possible for distance students to complete the technical content of the B.S.E.T. in three years from A.A.S. completion, depending on the semester load taken.

Graduate Degrees

Electrical engineering technology graduates have a number of graduate study alternatives. Many enroll in the ODU master's in engineering management program on campus or through Teletechnet to further their education. Others pursue graduate degrees in engineering or business. ComET graduates may also pursue the master's degree in computer science.

CAREER OPTIONS

■ **Electrical Systems Technology Option** – Careers involving design, analysis and support of electrical/electronic systems require a complex combination of engineering and technology knowledge and skills. Many of these skills focus on the hands-on application of technical expertise involving

instrumentation and measurement equipment and computer-based control and communications systems. The primary objective of the electrical systems option is to provide an applied technical foundation that will enable graduates to excel in this dynamic career area.

Graduates are qualified for positions in electronic and electrical product design and development, electronic and electrical system operation and maintenance, field operations and various other technical functions. Students choosing the electrical systems option will take courses in electrical power and machinery (including laboratory), linear electronics (including laboratory) and transmission networks. Students will also take several core courses in the areas of digital circuits and systems, alternative energy, digital controls and microprocessors.

The remainder of the technical program consists of senior elective courses in such areas as communications, advanced digital systems, control systems, microcomputer-based design, and local area networks.

To broaden students' interdisciplinary skills, all students pursuing the EST option are required to complete a minor of their choosing from the areas of science or engineering.

■ **Computer Engineering Technology Option** – The second option area in the electrical engineering technology program meets the needs of students who are interested in the design and operation of computer and web-based systems. The computer engineering technology (ComET) option provides the skills for career success in designing, building and installing computer systems of all descriptions including hardware, software and networking/web operations.

Students begin with a core that provides a basis in computer-oriented hardware including electronics, digital systems and microprocessors. This hardware core is integrated with a series of courses offered by the Department of Computer Science including programming and problem solving, data structures and software engineering. As a result, students completing the ComET option will also receive a minor in computer science. Graduates find employment as network managers, computer system engineers and network designers.

AVAILABLE COURSES

The following list describes the required courses at the junior and senior level for the two EET options.

Junior/Senior Courses and Electives

Electrical Systems Core Courses

EET 300	Advanced Circuit Analysis
EET 305	Advanced Technical Analysis
EET 310	Digital Electronics
EET 315	Digital Electronics Lab
EET 320	Microprocessors & Microcontrollers
EET 325	Microprocessor Lab
EET 330	Linear Electronics
EET 335	Linear Electronics Lab
EET 340	Transmission Networks
EET 360	Electrical Power & Machinery
EET 365W	Electrical Power & Machinery Lab
EET 370T	Energy and the Environment
EET 434	Introduction to Senior Project
EET 480W	Senior Project

Electrical Systems Electives

Additional electives in the areas of communications, microwaves, computers and networks, industrial controls, and power systems should be selected.

ComET Core Courses

EET 300	Advanced Circuit Analysis
EET 305	Advanced Technical Analysis
EET 310	Digital Electronics
EET 315	Digital Electronics Lab
EET 320	Microprocessors & Microcontrollers
EET 325	Microprocessor Lab
EET 330	Linear Electronics
EET 335	Linear Electronics Lab
EET 370T	Energy and the Environment
EET 434	Introduction to Senior Project
EET 480W	Senior Project
CS 333	Object-oriented Programming
CS 361	Advanced Data Structures
CS 312	Internet Concepts
CS 451	Software Engineering Survey

ComET Electives

Additional electives in the areas of computer science, computer hardware and networks, and industrial automation should be selected.



Location, Location, Location

Located in the Hampton Roads region of Virginia, Old Dominion University's main campus in Norfolk offers a small-college look and feel, with tree-lined walkways, a mix of old and new buildings, colorful gardens, ponds and fountains.

The Hampton Roads region in southeast Virginia, with a population of 1.6 million, is home to a vibrant technology industry, several national laboratories, one of the nation's busiest maritime ports, and among the world's largest military complexes. The main campus is just minutes from the popular Virginia Beach oceanfront and historic Colonial Williamsburg and a few hours from the Shenandoah Valley and Washington, D.C. The climate is mild and is the warmest of Virginia's regions due to the influence of the Atlantic Ocean and Chesapeake Bay.

Old Dominion University was founded in 1930 as a division of the College of William and Mary. The University is changing lives through engaging and exciting teaching, and innovative and cutting-edge research. The University is classified by the Carnegie Foundation as a "Research University with High Research Activity." With the principal marine and aerospace activities of the Commonwealth concentrated in Hampton Roads, the University has a significant commitment to science, engineering, and technology.



For further information about the EET program and other engineering technology programs, please visit our website at

www.eng.odu.edu/et

or contact the Department of Engineering Technology directly at the address below. You may also contact the University's Teletechnet site director at your local community college in Virginia or discuss program articulation with your local community college.

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I D E A F U S I O N

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