

## The Civil Engineering Technology Program

Civil Engineering is a broad and challenging field and the ODU Civil Engineering Technology (CET) program offers three option areas that provide an excellent foundation for career success: Construction Engineering, Structural Design, and Surveying / Site Development. Program graduates are prepared for employment in a wide range of professional and technical positions with the construction, structural design, consulting engineering, surveying and land development industries.

The Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (TAC of ABET) accredits the ODU Civil Engineering Technology program leading to the Bachelor of Science in Engineering Technology. Graduates are eligible to take the Fundamentals of Engineering (FE) or Land Surveying (FLS) examination in Virginia and in most states. These exams are the first step to licensure as a professional engineer or land surveyor.

CET courses provide the broad skill set required for both entry-level success and long term advancement. Core courses include topics such as computer-aided drafting, statics, strength of materials and materials testing, surveying, and building construction.

Students in the Civil Engineering Technology Department work with faculty that possess a wealth of business and industrial experience and this knowledge 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 proposed and funded by industry to solve real-world problems.



### Degree Completion Options

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 Associate in Applied Science (AAS) degree in a community college and finish the last two years of baccalaureate study either on campus or through the ODU TELETECHNET System.

For career and family bound students who are not able to come to the main campus to complete their degree, the TELETECHNET system, a national leader in distance learning, provides an alternative. Through this system, courses are delivered to sites at community colleges, industry sites, and directly to students at home or in the work place in Virginia and across the nation. There are three course delivery methods:

- Satellite links are the primary method and allow students to participate in live

classes by television and two-way voice connections.

- Streaming video allows students to participate in live or receive archived classes via high - speed Internet connections at home or at work.
- CD-ROM instruction is used to provide supporting information related to lectures delivered by satellite or streaming video.

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

Using the TELETECHNET System, it is possible for distance students to complete the technical content of the BS in ET within three years following AAS completion depending on the semester load taken.

### AAS Transfer Credits and Articulation

There are a number of articulation agreements that integrate the BS in Engineering Technology options with a range of AAS degrees. Typically about half (50-60) of the credits toward a baccalaureate degree can be earned through completion of approved AAS degree programs at a community college. Consult your local community college for details on current transfer/ articulation agreements. It is important to consult closely with program advisors to select the correct transfer courses in areas such as mathematics, science, and general education.



### Option in Construction Engineering Technology

The Construction Engineering option prepares students for careers in the construction industry by providing a combination of knowledge and skills from a number of disciplines. In addition to the basic technical classes in structures, materials, and fluids, construction engineering students take electives in scheduling, project management, estimating and other topics that allow projects to be completed on schedule and within budget.

Graduates of the Construction Management option are employed at both large and small companies as project engineers, field engineers, assistant superintendents, estimators, schedulers, and similar construction related positions.

### Option in Structural Design Technology

The Structural Design option includes study in areas such as computer-aided design, structural analysis, strength and application of materials, soils and foundations, heat

transfer, and other topics related to the design of structures.

Graduates of the Structural Design option are prepared to apply fundamental principles of civil and structural technology to develop new structural designs and improve / analyze existing structural systems. Structural Design graduates are employed in positions involving design of buildings, bridges, and foundations in positions such as designer, engineer, planner, and computer aided design analyst.

### Option in Surveying and Site Development Technology

The Surveying and Site Development option prepares students for careers in land planning, surveying (Geomatics), and site development. In addition to the common core of CET courses, topics cover advanced surveying, site development, geographic information systems, global positioning systems, photogrammetry, and geo-spatial data handling.

Graduates are employed in a number of fields including surveying, construction and site development, mapping, public and private sector land use planning, and consulting engineering. Many graduates of this program pursue dual professional licensure in the fields of professional land surveying and civil engineering.

### Graduate Degree Options

Engineering technology graduates have a number of graduate study alternatives. Many enroll in the ODU Masters in Engineering Management program through

TELETECHNET to further their education. Others pursue graduate degrees in an engineering or business field.

### Additional Information

If you are interested in a program where people and technology come together, the Department of Engineering Technology at Old Dominion University may be the place for you. For further information:

- Visit the ODU distance learning web site: [www.odu.edu/home/distance.html](http://www.odu.edu/home/distance.html).
- Discuss program articulation with your local community college.
- Visit the Department of Engineering Technology web site for additional information and course schedules.
- Contact the program director and find out more about the options.

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The following list describes the required courses at the Junior and Senior level for the CET options.

### CET Upper Level Courses / Electives

Core Technical Courses
EET 305 System Analysis
ENMA 302 Engineering Economics
MET 310 Dynamics
MET 330 Fluid Mechanics
MET 335 Fluid Mechanics Lab
*CET 301 Structural Analysis
CET 305 Elementary Surveying
CET 310 Fundamentals of Bldg. Construction
CET 340 Soils and Foundations
CET 341 Soils Testing and Inspection
CET 345 Materials Testing Lab
*CET 410 Reinforced Concrete Design
*CET 440 Contract Documents
*CET 445 Const. Planning and Scheduling
*CET 450 Structural Steel Design
CET 475W Senior Project
Construction Engineering Electives
CET 420 Hydrology and Drainage
CET 460 Const. Cost Estimating
CET 465 Const. Project Management
MET 480 Quality Control Systems
Structural Design Electives
CET 360 Plans and Specifications
CET 400 Comp. App. in Structural Design
CET 452 Reinforced Masonry and Wood
Surveying / Site Development Option
FIN 331 Legal Environment in Business
CET 313 Advanced Surveying
CET 314 US Land Law & Mock Trial
CET 318 GPS and Control Surveying
CET 411 Photogrammetry & Remote Sensing
CET 412 Route & Construction Surveying
CET 413 Geographic Information Systems
CET 420 Hydrology and Drainage
CET 425 Land Design and Site Dev.
*- Not required in surveying / site development option.



# CIVIL ENGINEERING TECHNOLOGY

*Options in Construction Engineering, Structural Design, and Surveying / Site Development Technology*

