

# Civil Construction Engineering Technology: Land Surveying Option

A Dual Admissions Program with NJIT

Division of Engineering Technologies and Computer Sciences — Curriculum Code: 530S

Will Earn Upon Program Completion: Associate in Applied Science (A.A.S.) Degree

## **Why major in Land Surveying?**

The program prepares students for employment in the land surveying field. Surveying involves mapping features of the land as well as property boundaries, and laying out construction lines and grades. It involves the use of computerized electronic equipment for land based as well as satellite assisted measurements, and the preparation of maps by computer aided design (CAD). Jobs in the field for those seeking immediate employment range from field crew member to CAD operator, and are typically found in surveying firms, consulting engineering firms, utility companies, and in the engineering departments of governmental agencies.

## **If I major in Land Surveying, can I transfer to an upper-division college or university?**

Yes. You may choose to participate in the Dual Admissions program with New Jersey Institute of Technology and have all your credits applied to the first two years of the bachelor's degree program in Surveying Engineering Technology. Or you may transfer to another college that applies most or all of your credits toward a bachelor's degree. With the bachelor's degree from NJIT, you become eligible to take the New Jersey land surveying license exam.

## **Are there any requirements I must satisfy before I start taking courses in my major?**

All new students must take a basic skills competency test. Based on the results of the test, you may be required to take developmental courses in reading, English, and/or mathematics.

## **How long will it take for me to complete this degree?**

If you do not need developmental course work and you attend full time, you can complete the degree in two years. Part-time students can complete the program in three or four years.

## **Where should I direct specific questions about this program?**

Contact the Division at (973) 877-4400.

## **Upon completion of this program, graduates will be able to:**

- ◆ Make precise measurements in the field using surveying instruments such as a theodolite, level, steel tape, and total station;
- ◆ Demonstrate knowledge of land surveying principles including traverse, level loop, topographic survey, and construction stake out;
- ◆ Design a road centerline including horizontal and vertical alignments;
- ◆ Demonstrate understanding of engineering drawings including the concept of scale and orthographic projection;
- ◆ Assist in conducting a boundary survey including field measurements, calculations, and survey analysis;
- ◆ Design a simple storm sewer system and culvert and demonstrate knowledge of the underlying principles of hydraulics and hydrology;
- ◆ Demonstrate knowledge of the principles, rules and purposes of business law; and
- ◆ Utilize computer software applications used in the surveying field such as CAD, spreadsheets, word processing, and basic programming.

# Civil Construction Engineering Technology: Land Surveying Option A.A.S. Degree Program

<p><b>GENERAL EDUCATION REQUIREMENTS:</b> (22 credits)</p> <p><b>Communications (6 credits)</b>  ENG 101 College Composition I 3  ENG 102 College Composition II <b>or</b>  ENG 105 Technical Writing 3</p> <p><b>Social Science (6 credits)</b>  Select two courses from: ANT 101, 105;  ECO 101, 102; POL 101, 104; PSY 101, 102  219; SOC 101, 108, 219 6</p> <p><b>Math (7 credits)</b>  MTH 113 College Algebra with Trigonometry 4  MTH 114 Unified Calculus I 3</p> <p><b>Humanities (3 credits)</b>  Select one History course from: HST 101, 102, 111,  112, 121, 122, 131, 132, 134-137, 161, 162 3</p> <p><b>MAJOR COURSE REQUIREMENTS:</b> (24 credits)</p> <p>CET 211 Surveying I 3  CET 212 Surveying II 3  CET 214 Evidence and Procedures for  Boundary Location 3  CET 221 Hydraulics and Drainage 4  ENR 103 Engineering Graphics 2  ENR 105 Applied Computer Aided Design 2  BUS 251 Business Law I 3  BUS 252 Business Law II 3  CET 251 CET Seminar 1</p> <p><b>ADDITIONAL COURSE REQUIREMENTS:</b> (17 credits)</p> <p>CSC 112 Computer Prog. for Engr. &amp; Tech. 3  MTH 141 Mathematical Statistics 3  PHY 101 College Physics I 4  PHY 102 College Physics II 4  CIS 137 Microcomputer Databases 3</p> <p><b>Total Credits Required for Degree 63</b></p>	<p><b>RECOMMENDED SEQUENCE OF COURSES:*</b></p> <p><b><u>First Semester</u></b></p> <p>ENG 101 College Composition I 3  ENR 103 Engineering Graphics 2  BUS 251 Business Law I 3  MTH 113 College Algebra with Trigonometry 4  PHY 101 College Physics I 4</p> <p><b><u>Second Semester</u></b></p> <p>ENG 102 College Composition II <b>or</b>  ENG 105 Technical Writing 3  ENR 105 Applied Computer Aided Design 2  BUS 252 Business Law II 3  MTH 114 Unified Calculus I 3  PHY 102 College Physics II 4</p> <p><b><u>Summer</u></b></p> <p>Social Science requirement 3  Humanities requirement 3</p> <p><b><u>Third Semester</u></b></p> <p>CET 211 Surveying I 3  CSC 112 Computer Prog. for Engr. &amp; Tech. 3  MTH 141 Mathematical Statistics 3  Social Science requirement 3</p> <p><b><u>Fourth Semester</u></b></p> <p>CET 212 Surveying II 3  CET 214 Evidence and Procedures for  Boundary Location 3  CET 221 Hydraulics and Drainage 4  CIS 137 Microcomputer Databases 3  CET 251 CET Seminar 1</p>
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\*NOTE: This plan assumes the completion of all required developmental courses in reading, writing, and mathematics as well as other pre- and co-requisites for some of the courses, as listed in the Course Descriptions section.