

# SURVEYING (SURV)

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## **SURV1000 CONSTRUCTION SURVEYING**

Instruction is given in the theory and techniques of horizontal and vertical measurements using the tape, transit and level. Laboratory exercises will focus on the application of these techniques as they relate to the building industry, including construction layout and grades. **Prerequisite:** *MATH1005 (4 credits)*

## **SURV1100 OVERVIEW OF SURVEYING TECHNOLOGY**

This course will introduce the student to the various methods and applications of land surveying to the real estate, construction, and land development industries. Students will also be introduced to the various technologies employed by Professional Land Surveyors in accomplishing their work including differential leveling, electronic distance measurement (EDM), electronic data collection, computer-aided design (CAD), the global positioning system (GPS) and geographical and land information systems (GIS/LIS). **Prerequisite:** *ENGL1050 or ENGL1100 (3 credits)*

## **SURV1200 SURVEYING MEASUREMENT I**

This course will introduce the student to the fundamental theories and techniques for horizontal and vertical measurements with theodolites, automatic levels and steel tapes. Labs include projects in linear measurements, leveling, traversing and stadia surveys. **Prerequisite:** *MATH1065 (4 credits)*

## **SURV1500 LEGAL ASPECTS OF LAND SURVEYING I**

This course includes an introduction to the realm of real estate law that is essential to the practice of land surveying and the basics of land surveying research. Real estate law and conveyancing terminology, evidence gathering, and research theory will be taught. Key principles of boundary law will be explored such as the relative weight of evidence, sequential and simultaneous conveyances, easements and rights of way, and the public land survey system. **Prerequisites:** *ENGL1050 or ENGL1100; and SURV1200 (3 credits)*

## **SURV2200 SURVEYING MEASUREMENT II**

This course includes traverse calculation, and error analysis, applications of coordinate geometry, horizontal and vertical curve calculations, introduction to geodetic survey principles, basic map projection calculations, and introduction to, and use of, data collection equipment and software. Labs include layout of horizontal and vertical curves, field techniques for boundary layout, data collection and site detail mapping. The final project in this course will involve the detailed surveying and mapping of a section of the campus suitable for use in engineering design, construction or conveyancing. **Prerequisite:** *SURV1200 (4 credits)*

## **SURV2250 MA. REGULATIONS AFFECTING SURVEYING PROFESSIONALS**

This course will involve the study of those regulations directly affecting the practice of Land Surveying in the Commonwealth of Massachusetts such as the Registration Law, (MGL Chap. 112, Secs. 81D-81T), the Regulations of the Board of Registration of Professional Engineers and of Land Surveyors (250 CMR), the Subdivision Control Law (MGL Chap. 41), the Zoning Act, (MGL Chap 40A) and the Massachusetts Land Court Manual of Instructions. Students will be introduced to other bodies of regulations often encountered in the practice of Land Surveying such as municipal subdivision regulations, The Wetlands Protection Act, The Massachusetts Environmental Protection Act (MEPA). **Prerequisite:** *ENGL1100 or ENGL1050 (3 credits)*

## **SURV2500 LEGAL ASPECTS OF LAND SURVEYING II**

Building on the principles taught in Legal Aspects of Land Surveying I, special boundary topics such as water boundaries, unwritten transfers, and writing legal descriptions will be covered along with the roles of statute and case law in the boundary decision process. Students will complete a final project that will involve the application of legal principles to an actual surveying problem requiring them to make boundary decisions involving conflicting evidence. **Prerequisites:** *SURV1500 and SURV2200 (3 credits)*