

# SURVEYING (SMT)

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## SMT 110 (3 credit hours)

### Principles of Surveying

Provides a study of field and office procedures for measuring distances, elevations, and horizontal and vertical angles. Covers Polaris and solar observations, state plane coordinates, control surveys, and public land surveys. Lecture: 3 credits (45 contact hours).

**Attributes:** Technical

**Components:** LEC: Lecture

## SMT 130 (3 credit hours)

### Land Surveying Graphics

Covers graphical communication in surveying and mapping, fundamentals of projection, map projection theory, 3-D viewing, spatial relationships and viewpoints, plats, profiles, cross-sections, sketches for field notes and presentations in technical reports, map accuracy standards, plotting data from field notes and data collection, contour theory, and computations related to survey drafting. Lecture: 3 credits (45 contact hours).

**Attributes:** Technical

**Components:** LEC: Lecture

## SMT 160 (3 credit hours)

### Construction Surveying

Provides a study of field and office procedures for the layout of construction sites. Includes theory of construction surveys for route locations, plant site, earthwork calculations, circular curves, lines, and grades. Lecture: 3 credits (45 contact hours).

**Pre-requisite:** SMT 110, or Instructor Consent.

**Attributes:** Technical

**Components:** LEC: Lecture

## SMT 210 (3 credit hours)

### Advanced Surveying Measurement

Examines the nature of measurements, statistical analysis of random errors in measurements, propagation of errors, survey standards and design specifications, development of coordinate geometry and trigonometric solutions of plane surveying problems, analysis of errors and mistakes in indirect measurement. Lecture: 3 credits (45 contact hours).

**Pre-requisite:** SMT 110.

**Attributes:** Technical

**Components:** LEC: Lecture

## SMT 220 (3 credit hours)

### Surveying Lab

Investigates field procedures for measuring distances, elevations, horizontal and vertical angles, state plane coordinates and control surveys as they pertain to boundary location, route location, construction and mine surveys. Laboratory: 3 credits (90 contact hours).

**Co-requisite:** SMT 160.

**Attributes:** Technical

**Components:** LAB: Laboratory

## SMT 230 (3 credit hours)

### Land Boundary Location

Explores the role of the surveyor in retracing land boundaries, methods of boundary establishment, classification and analysis of boundary evidence, preparing deed descriptions and survey plats, preservation of survey evidence, surveyor as expert witness, liability, and professionalism in surveying. Lecture: 3 credits (45 contact hours).

**Pre-requisite:** SMT 110.

**Attributes:** Technical

**Components:** LEC: Lecture

## SMT 250 (3 credit hours)

### Mine Surveying

Introduces the theory and practice of mine surveying and use of survey instruments, for the location of drill holes, bench surveys, layout of blasting patterns, haul road layout, transfer of control from surface to underground, alignment of underground development, recording of survey information, control systems, location and selection of stations, bore hole surveys, and subsidence surveys. Lecture: 3 credits (45 contact hours).

**Pre-requisite:** SMT 130 or Instructor Consent.

**Attributes:** Technical

**Components:** LEC: Lecture

## SMT 270 (3 credit hours)

### Professional Ethics & Conduct for Land Surveyors

Explores the professional and ethical conduct of the Land Surveyor in areas of building a business, managing employees, communications, project management, and self-management. Lecture: 3 credits (45 contact hours).

**Pre-requisite:** SMT 230, or Instructor Consent.

**Attributes:** Technical

**Components:** LEC: Lecture

## SMT 290 (3 credit hours)

### Boundary Law

This course is the survey of property law, explaining the creation, description, and maintenance of property boundaries, easements and right-of-ways. Lecture: 3 credits (45 contact hours).

**Attributes:** Technical

**Components:** LEC: Lecture