

SURVEYING AND MAPPING (SURV)

SURV:100 Introduction to Geomatics (2 Credits)

An introductory course into the field of surveying and mapping technology. Integrated topics include: types of surveys, cartography, and geographic information systems. (Formerly 2980:100)

SURV:101 Basic Surveying (3 Credits)

Pre/Corequisite: MATH 153 or MATH 154 or MATH 255 or MATH 356 or MATH 145 or MATH 149 or MATH 221 or MATH 222 or MATH 335. Care and use of basic surveying field instruments and the basic computations and adjustments necessary to post process the field survey measurements. Field Practice. (Formerly 2980:101)

SURV:102 Topographic Surveying (2 Credits)

Prerequisites: SURV 101 and MATH 153. Computations and adjustments of field survey measurements using both conventional and computer methods. Development of maps and plans stressed. Field Practice. (Formerly 2980:102)

SURV:105 Introduction to Geographic & Land Information Systems (3 Credits)

Introduction to the principles and concepts of Geographic and Land Information Systems used in surveying and mapping applications. Laboratory. (Formerly 2985:101)

SURV:123 Surveying Field Practice (2 Credits)

Prerequisite: SURV 102 or equivalent. Practical experience in use of surveying equipment and methods of surveying. Provides students with responsibility for making decisions and planning and directing complete project. (Formerly 2980:123)

SURV:155 Computer Applications in Surveying (3 Credits)

Use of current surveying software to solve typical problems/projects in surveying technology. (Formerly 2980:155)

SURV:170 Surveying Drafting (3 Credits)

Corequisite: MATH 152 or permission. Drafting procedures, techniques, and tools required for the various phases of survey office work. Projects include topographic maps, plan and profile drawings, and cross-section drawings. Laboratory. (Formerly 2980:170)

SURV:201 Intermediate Geographic and Land Information Systems (3 Credits)

Prerequisite: SURV 105. Continued instruction in the hands-on technical applications of Geographic and Land Information Systems. Laboratory. (Formerly 2985:201)

SURV:205 Building Geodatabases (3 Credits)

Prerequisite: SURV 105. Introduction and application of spatial geodatabases. The student will create, use, and manage geodatabases. Geodatabases are used for storing spatial and attribute data. Laboratory. (Formerly 2985:205)

SURV:222 Construction Surveying (3 Credits)

Prerequisite: SURV 101. Methods and procedures for establishing line and grade for construction. Circular and parabolic curves. Cross-sectioning methods and earthwork. Communication and plan reading. (Formerly 2980:222)

SURV:223 Geospatial Technologies (3 Credits)

Introduction to current and emerging geospatial technologies, such as Geographic Information Systems, remote sensing and global positioning systems, and exploring mapping data sources. Laboratory required. (Formerly 2980:223)

SURV:225 Advanced Surveying (3 Credits)

Prerequisite: SURV 101. Introduction to flood maps, ALTA surveys, and geodesy. Advanced topics in control surveys, state plane coordinates, and bearings from celestial observation. (Formerly 2980:225)

SURV:228 Boundary Surveying (3 Credits)

Prerequisite: SURV 101 or equivalent. Analysis of evidence and procedures for boundary location; establishing and/or locating points for boundary and mortgage location surveys; plat preparation. Ohio survey minimum standards. (Formerly 2980:228)

SURV:251 CST Seminar (1 Credit)

Prerequisite: SURV 222. Prepares students for the National Society of Professional Surveyors Certified Surveying Technician (CST) Level I Examination. Examination is given at the end of the review sessions. (Formerly 2980:251)

SURV:310 Survey Computations & Adjustments (2 Credits)

Prerequisite: SURV 225. Concepts relating to measurement error, probability, and reliability. Computation and adjustment of horizontal and vertical networks. (Formerly 2980:310)

SURV:315 Boundary Control & Legal Principles (3 Credits)

Prerequisite: SURV 228. Historical development of boundaries, rectangular system of public land surveys, systems to describe property, surveyor's responsibility to understand and properly apply legal principles to boundary. (Formerly 2980:315)

SURV:325 Safety for Surveyors (1 Credit)

To provide safety and first aid training required for surveying. (Formerly 2980:325)

SURV:330 Applied Photogrammetry (3 Credits)

An introduction to metrical and quantitative photogrammetry using both hard- and soft-copy systems. Laboratory. (Formerly 2980:330)

SURV:335 The Business of Surveying (2 Credits)

A course focused on the business aspects of surveying, including development of business plan components for a company offering professional surveying and mapping services. (Formerly 2980:335)

SURV:340 Cadastral Surveying (2 Credits)

Prerequisites: SURV 101. A study of the official surveys of the United States. Cadastral surveys establish or recreate boundaries and /or tracts of land. (Formerly 2980:340)

SURV:350 Mapping with Drones (3 Credits)

An introduction to Unmanned Aircraft Systems (UAS) and its associated applications as it relates to land surveying and mapping. (Formerly 2980:350)

SURV:410 LiDAR and Laser Scanning (2 Credits)

Prerequisite: SURV 105. Introduction to LiDAR (aerial and terrestrial) scanning as it applies to surveying and mapping. The course will discuss the collection and dissemination methods of the data. (Formerly 2980:410)

SURV:415 Legal Aspects of Surveying (3 Credits)

Prerequisite: SURV 315. A study of statute and common law related to land surveying. Evidence and the surveyor's role in the judicial process. Interpreting and writing land descriptions. (Formerly 2980:415)

SURV:420 Route Surveying (3 Credits)

Prerequisite: SURV 225. Surveying for long but narrow strips of land such as highways, railroads, and pipe lines. Course includes all requisite calculations and drawings. (Formerly 2980:420)

SURV:421 Subdivision Design (3 Credits)

Prerequisites: SURV 155, SURV 222, and SURV 315. Site analysis, land use controls, and plotting procedures. Laboratory includes preparation of various types of projects leading to a complete subdivision. (Formerly 2980:421)

SURV:422 Global Positioning System Surveying (3 Credits)

Prerequisites: SURV 225 and SURV 105 or permission. Introduction to the Global Positioning System (GPS). Course includes the planning, data collection, and processing of GPS data. (Formerly 2980:422)

SURV:425 Land Navigation (3 Credits)

Interpretation and use of topographic maps. Study of basic map elements with emphasis on identification of features and coordinate systems. Map use for land navigation. (Formerly 2980:425)

SURV:426 History of Surveying To 1785 (2 Credits)

A history of land surveying. Emphasis on the development of survey procedures through history. Part I (to 1785) covers the ancient world to the colonial period. (Formerly 2980:426)

SURV:427 Ohio Lands (2 Credits)

Study of the history of the original Ohio Land Subdivisions (Formerly 2980:427)

SURV:428 History of Surveying Since 1785 (2 Credits)

A history of land surveying. Emphasis on the development of survey procedures through history. Part II (Since 1785) covers the history of the United States to date. (Formerly 2980:428)

SURV:430 Surveying Project (3 Credits)

Prerequisite: Senior standing and placement of advisor. Provides opportunity to research and develop a specific surveying project within chosen area of surveying. Oral, written and graphical presentation of completed project(s). (Formerly 2980:430)

Gen Ed: - Capstone

SURV:431 Senior Seminar (2 Credits)

Prerequisite: Senior or greater standing. Students demonstrate knowledge and skills acquired as surveying majors through assessment testing and review of professional licensure laws. Preparation for national exams. (Formerly 2980:431)

SURV:445 Applications in GIS using GPS (3 Credits)

Prerequisite: SURV 105. Advanced instruction in GIS applications using GPS as well as other surveying and mapping methods. Laboratory. (Formerly 2980:445)

SURV:450 Topics in Professional Practice (2 Credits)

Prerequisite: Junior or greater standing. Topics in applicational areas of surveying from the point of view of the practitioner and the consumer of land-related data. (Formerly 2980:450)

SURV:489 Special Topics in Surveying (1-3 Credits)

Prerequisite: Permission. Special lecture/laboratory courses offered once or only occasionally in areas where no formal course exists. (May be repeated for a maximum of six credits.) (Formerly 2980:489)

SURV:490 Workshop in Surveying (1-3 Credits)

Prerequisite: Permission. Group study of special topics in surveying. May not be used to meet undergraduate major requirements in surveying. May be used for elective credit only. (May be repeated for a maximum of six credits.) (Formerly 2980:490)

SURV:495 Internship: Surveying and Mapping (3 Credits)

Prerequisites: 64 hours in program and permission. Supervised work experience in surveying and mapping to increase student understanding of surveying and mapping technology. (Formerly 2980:495)

SURV:497 Surveying Honors Project (3 Credits)

Prerequisite: Senior standing in the honors program. Provides opportunities to research and develop a specific surveying project within chosen area of surveying. Oral, written, and geographical presentation of completed projects. (Formerly 2980:497)

SURV:498 Independent Study (1-3 Credits)

Prerequisite: Permission or instructor. Directed study in a special field of interest chosen by student in consultation with instructor. (May be repeated for a total of six credits). (Formerly 2980:498)