SURVEYING AND MAPPING (2980)

2980:100 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.

2980:101 Basic Surveying (3 Credits)
Corequisite: 2030:153 or 2030:154 or 2030:255 or 2030:256 or 3450:50 or 3450:149 or 3450:251 or 3450:222 or 3450:335. Care and use of basic surveying field instruments and the basic computations and adjustments necessary to post process the field survey measurements. Field Practice.

2980:102 Topographic Surveying (2 Credits)

2980:122 Elementary Surveying (3 Credits)
Elementary surveying for non-surveying and construction majors. Basic tools and computations. Field practice.

2980:123 Surveying Field Practice (2 Credits)
Prerequisite: 2980:102 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.

2980:155 Computer Applications in Surveying (3 Credits)
Use of current surveying software to solve typical problems/projects in surveying technology.

2980:170 Surveying Drafting (3 Credits)
Corequisite: 2030:152 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.

2980:222 Construction Surveying (3 Credits)

2980:223 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.

2980:225 Advanced Surveying (3 Credits)
Prerequisite: 2980:101. Introduction to flood maps, ALTA surveys, and geodesy. Advanced topics in control surveys, state plane coordinates, and bearings from celestial observation.

2980:228 Boundary Surveying (3 Credits)
Prerequisite: 2980:101 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.

2980:251 CST Seminar (1 Credit)
Prerequisite: 2980:222. 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.

2980:310 Survey Computations & Adjustments (2 Credits)
Prerequisite: 2980:225. Concepts relating to measurement error, probability, and reliability. Computation and adjustment of horizontal and vertical networks.

2980:315 Boundary Control & Legal Principles (3 Credits)
Prerequisite: 2980:228. 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.

2980:325 OSHA Safety Requirements for Surveyors (1 Credit)
To provide OSHA safety training and certification required for surveying companies.

2980:330 Applied Photogrammetry (3 Credits)
Prerequisite: 2980:155. An introduction to metrical and quantitative photogrammetry using both hard- and soft-copy systems. Laboratory.

2980:335 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.

2980:340 Cadastral Surveying (2 Credits)
Prerequisites: 2980:101. A study of the official surveys of the United States. Cadastral surveys establish or recreate boundaries and/or tracts of land.

2980:410 LiDAR and Laser Scanning (2 Credits)
Prerequisite: 2985:101. 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.

2980:415 Legal Aspects of Surveying (3 Credits)
Prerequisite: 2980:315. 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.

2980:420 Route Surveying (3 Credits)
Prerequisite: 2980:225. Surveying for long but narrow strips of land such as highways, railroads, and pipe lines. Course includes all requisite calculations and drawings.

2980:421 Subdivision Design (3 Credits)
Prerequisites: 2980:155, 2980:222, and 2980:315. Site analysis, land use controls, and plotting procedures. Laboratory includes preparation of various types of projects leading to a complete subdivision.

2980:422 Global Positioning System Surveying (3 Credits)
Prerequisites: 2980:225 and 2985:101 or permission. Introduction to the Global Positioning System (GPS). Course includes the planning, data collection, and processing of GPS data.

2980:425 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.

2980:426 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.

2980:427 Ohio Lands (2 Credits)
Study of the history of the original Ohio Land Subdivisions.
2980:428 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.

2980:430 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).

Gen Ed: - Capstone

2980:431 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.

2980:445 Applications in GIS using GPS (3 Credits)
Prerequisite: 2985:101. Advanced instruction in GIS applications using GPS as well as other surveying and mapping methods. Laboratory.

2980:450 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.

2980:489 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.)

2980:490 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.)

2980:495 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.

2980:497 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.

2980:498 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).