Civil Engr Tech (CET)

Courses

CET 1111 Beginning CAD: 3 semester hours.
An introduction to AutoCAD software. A basic study of two-dimensional entities, text, dimensions and other complex entities, isometric drawing, and three-dimensional modeling. PREREQ: Minimum score of ALEKS 30 or equivalent. F, S

CET 1112 Beginning Surveying: 3 semester hours.
Introduction to surveying, measurements and computations, basic mathematics for surveying, measuring horizontal distances, principles and procedures of leveling, measuring angles and direction. Includes hands on lab and fieldwork components. PREREQ: Minimum score of ALEKS 30 or equivalent. COREQ: MATH 1143 F, S

CET 1113 Civil and Geomatics Engineering Technology I: 2 semester hours.
Introductory course intended for the purpose of equipping and informing students with knowledge of basic standard concepts and practice of Civil and Geomatics Engineering Technology for both academic and workplace preparedness. Must be admitted to CET program. PREREQ: Minimum score of ALEKS 30 or equivalent. F, S

CET 1115A Materials Testing I: 4 semester hours.
This course will introduce students to testing procedures for testing aggregate, soils, embankment and base. Students will prepare for two certifications through Western Alliance for Quality Transportation Construction (WAQTC). PREREQ: Minimum score of ALEKS 30 or equivalent. F

CET 1121 Civil 3D Drafting: 3 semester hours.
Civil Engineering Technology drafting, municipal and rural maps and drawing, drainage applications, plan and profile drawings, cross-sections, earthwork plats, legal descriptions, contour, quantity calculations, and other details relating to civil engineering technology drawings. Computer-aided-drafting (CAD) is used for drawings. PREREQ: CET 1111. F, S

CET 1122 Intermediate Surveying and Spatial Analysis: 3 semester hours.
Introduction to horizontal control surveys, topographic surveys and maps, horizontal and vertical curves, construction surveying, and basic photogrammetry. PREREQ: CET 1112. F, S

CET 1123 Civil and Geomatics Engineering Technology II: 2 semester hours.
Course intended to introduce students to both contemporary and emerging engineering innovations including equipment, tools, technology and software applications currently used in the fields of Civil and Geomatics Engineering Technologies. PREREQ: CET 1113. F, S.

CET 1125A Materials Testing II: 4 semester hours.
This course will introduce students to testing procedures for in-place density, asphalt, and Portland Cement Concrete. Students will prepare for two certifications through Western Alliance for Quality Transportation Construction (WAQTC) and one Level I certification through American Concrete Institute (ACI). PREREQ: CET 1115A. S

CET 2215 Materials Theory: 3 semester hours.
Introduction to materials, experiments, statistics, probability, mechanical properties, materials science, Portland cement concrete, wood, wood composites, iron and steel. F, S

CET 2216 Route Survey and GPS Fundamentals: 3 semester hours.
Study of route surveying and route locations; horizontal, vertical, and spiral curves as applied to highway design. GPS fundamentals, static and kinematic procedures will be covered and field data will be collected using GPS equipment. Plans will be drawn using AutoCAD Civil 3D software. PREREQ: CET 1121 and CET 1122. F, S

CET 2226 Construction Surveying: 3 semester hours.
An introduction to geomatics and construction applications including machine guidance and control, highways and municipal streets, pipelines and tunnels, building construction quality, and final surveys. PREREQ: CET 2216. F, S

CET 2228 Principles of GIS: 3 semester hours.
Study of GIS fundamentals, introduction to GPS, databases, and metadata. Topics include practical application of ESRI ArcGIS PRO software; build, edit, and query a GIS; and basic spatial analysis. Requires competence in computer operating systems and coordinate datums. PREREQ: CET 1122 or Instructor approval. F, S

CET 2232 Plan Reading and Worksite Safety: 3 semester hours.
Introduction to reading plans and interpreting specifications for quality assurance, estimating material quantities, and as-built verification. Will also include OSHA worksite safety training related to construction activities. F, S

CET 2243 Public Works: 3 semester hours.
Introduction to the systems, operation, and maintenance of public utilities including water, wastewater, stormwater, and solid waste. PREREQ: MATH 1143; PREREQ or COREQ: MATH 1144. F, S

CET 2250 Unmanned Aerial Systems/Imagery Analysis: 3 semester hours.
Basic operation and uses of unmanned aerial systems, imagery interpretation principles, and roles of imagery analysts in an operational environment. Hands-on operational experience in mission planning, simulation, collecting images and image analysis using GIS principles and processing software. Equivalent to UAS 2250. PREREQ: CET 1112. F, S

CET 2251 Introduction to Legal Descriptions: 1 semester hour.
Covers principles of interpretation of land descriptions as found on deeds and plats. F, S

CET 2252 3D Laser Scanning/Point Cloud Processing: 3 semester hours.
Introduction to the basic operation and uses of 3D laser scanners. Scanning techniques, setup processes, target acquisition, and point cloud configuration and processing using industry software will be covered. Students will receive hands-on operational experience through project planning, collecting scanned images, and image manipulation. PREREQ: CET 1121 or Instructor approval. F, S

CET 2296 Independent Study: 1-8 semester hours.
Addresses specific learning needs of individuals for the enhancement of knowledge and skills within the program under the guidance of an instructor. May be repeated. Graded S/U, or may be letter-graded. PREREQ: Permission of the instructor. D

CET 2298 Special Topics: 1-8 semester hours.
Addresses the specific needs of industry, enabling students to upgrade technical skills that are not included in the current program curriculum. May be repeated. Graded S/U, or may be letter-graded. PREREQ: Permission of the instructor. D

CET 2299 Experimental Course: 1-6 semester hours.
The content of this course is not described in the catalog. Title and number of credits are announced in the Class Schedule. Experimental courses may be offered no more than three times with the same title and content. May be repeated.