

Prior Learning Assessment Courses and Challenge Courses

The CET and GEMT Faculty have determined which courses are appropriate for Prior Learning Assessment (PLA) and/or Challenging (CH) a course through examination.

Key: (PLA) (CH)

CET 0111 Drawing with CAD: 3 semester hours.

A basic study of mechanical drawing with computer-aided-drafting emphasis. Instructional units include icon uses with layers, linetypes and colors, editing drawings, coordinate usage, polylines, text; hatching, dimensioning, multiview, and layout. Equivalent to GEMT 1111. F, S (PLA)

CET 0112 Beginning Survey: 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. F, S (PLA) – If passed the Fundamentals of Surveying Exam , (CH)

CET 0121 Civil Engineering Technology 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 rPLAting to civil engineering technology drawings. Computer-aided-drafting (CAD) is used for drawings. Equivalent to GEMT 1121. PREREQ: CET 0111/GEMT 1111. S (PLA)

CET 0122 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 0112. F, S (PLA) – If passed the Fundamentals of Surveying Exam , (CH)

CET 0216 Route Survey and GPS Fundamentals: 3 semester hours.

Study of route surveying and route locations; circular, spiral, and parabolic curves as applied to highway design. Field data will be collected using GPS equipment. Plans will be drawn using CAD and survey/engineering software. PREREQ: CET 0122. F (PLA)

CET 0226 Construction Surveying: 3 semester hours.

Operations in construction surveying. Construction staking procedures and use of data collection software. PREREQ: CET 0216. S (PLA)

CET 0228 Principles of GIS: 3 semester hours.

Study of GIS fundamentals, introduction to GPS, databases, and metadata. Practical application of ESRI ArcView. Build, edit, and query a GIS; basic spatial analysis. Requires competence in computer operating systems. PREREQ: CET 0120. S (PLA) (CH)

GEMT 2231 Survey Computations: 3 semester hours.

Units of measurement and conversions, check and adjustment of raw data, closure and adjustment of survey figures, calculations for missing elements of a figure, working coordinates and coordinate geometry (COGO), intersections of straight lines and circles, instrument specifications and introduction to adjustment theory. F, S (CH)

GEMT 3310 Boundary Surveying Law: 3 semester hours.

Concept of boundaries, ownership, transfer, boundary law principles, presumptions, easements and reversions, sequential and simultaneous conveyances, case studies, Riparian and littoral rights, state laws, rules for practicing surveying, ALTA survey. PREREQ: GEMT junior status or permission of instructor. F, S (CH)

GEMT 3311 Advanced Surveying: 3 semester hours.

Discuss transverse mercator projection and state plane coordinates, spherical trigonometry and astronomical observation, and coordinate geometry calculations. Control surveys include triangulation, precise traverse, intersection and resection. Collect data using robotic station, digital level, and precise leveling. PREREQ: CET 0226 or permission of instructor. F (CH)

GEMT 3312 Public Land Surveying: 3 semester hours.

Study of surveys of public land. Includes a general scheme of subdivision of U.S. public lands and legal aspects of land surveys, riparian rights, and irregularities in subdivision. Studies of Idaho Codes and regulation of public land surveys, corner perpetuation and filing, and recording of surveys. Students do case study and final report. PREREQ: CET 0122. F (CH)

GEMT 3313 Surveying Software Applications: 2 semester hours.

Civil/survey software. Topics include data download; batch file creation; editing and processing; COGO functions; field to finish functions; area and lot sizing; INs, DTMs and contours creation; calculation of volumes and basic road design and layout. PREREQ: CET 0226 or permission of instructor. F (CH)

GEMT 3314 Research and Evidence in Surveying: 3 semester hours.

Survey of research sources and techniques including field, surveyors' offices, governmental agency, courtroom procedures and practices. Local government agency permit and approval procedures. Surveyor/attorney interaction and roles. Student will work on case studies and prepare a final report. PREREQ: CET 0226. S (PLA)

GEMT 3315 Survey Adjustments

GEMT 3315 Surveying Adjustments: 3 semester hours. Studies matrix inverse; solution of linear equation by matrices, error propagation, theory and computation of least squares adjustments, coordinate transformation, error ellipses, and statistical testing. PREREQ: MATH 1170, MATH 1153 and CET 0226/GEMT 2226. S

GEMT 3317 Subdivision Planning and Platting: 2 semester hours.

Land use planning; governmental regulations and permits as applied to subdivisions; subdivision planning, computations and preparation of subdivision plats. PREREQ: CET 0226. PRE-or-COREQ: GEMT 3313. F (PLA)

GEMT 3319 Writing Legal Descriptions: 1 semester hour.

Covers principles of interpretation, techniques, and forms for descriptions and preparation of land descriptions. Layout, content, and display of plats and descriptions will be covered. PREREQ: Permission of instructor. F, S (PLA) (CH)

GEMT 4400 Essentials of Surveying: 2 semester hours.

Preparation for fundamentals of surveying exam. May not be used as a technical elective. May be repeated once for a total of 4 credits. PREREQ: Senior in Geomatics, graduate or Civil Engineering Technology, Civil Engineering, or industry experience. Graded S/U. F, S: (CH)

GEMT 4411 Geodesy: 3 semester hours.

Introduces geometry of ellipsoid, reference coordinate systems, local geodetic coordinate system, reduction of observation to other geodetic values, precise leveling and orthometric height, direct and inverse geodetic position computation and gravity field of earth. PREREQ: GEMT 3311 or permission of instructor. S: (CH)

GEMT 4415 Survey Office Practice: 3 semester hours.

Introduction to the broad skills required of a surveyor running a business. Topics covered include formulating a business plan, forms of business organizations, basic financial forms and accounting, concepts of pricing and bidding, personnel management, marketing, contracts and proposals, and project management. PREREQ: Senior standing or permission of instructor. F, S: (PLA)

Objectives

Graduates of the Surveying and Geomatics Engineering Technology program will:

1. Have the basic math and science knowledge and technical skills of the Surveying and Geomatics Engineering Technology discipline appropriate to enter careers in the geospatial community, for example, boundary surveying and legal principles, route and construction surveying, survey measurement analysis and adjustments, Global Positioning System (GPS), photogrammetry, geodesy, land/Geographic Information Systems (GIS), and 3D scanning.
2. Have the ability to execute surveying/geomatics project activities for delivery in response to the needs of private and public industry.
3. Have appropriate understanding of standards and specifications of surveying/geomatics practices in analyzing positional accuracy of measurement systems and in preparing land records and plats by meeting legal requirements.

4. Have the knowledge to pass the national Fundamentals of Surveying and PS exams, and after gaining experience, be qualified to take the Professional Surveying License Exams with an understanding of continued lifelong learning.
5. Have an understanding of the professional, ethical and social issues with commitment to quality and dependability.