Civil Engineering and Geomatic (CEG)

CEG 111. Introduction to Gis and Gnss. 4.0 Credits. Class-2.0. Clinical-0.0. Lab-4.0. Work-0.0
This course introduces the methods and techniques used in the Geographic Information Systems (GIS) and Global Navigation Satellite Systems (GNSS) professions. Emphasis is placed on data collection and mapping using GIS software. Upon completion, students should be able to use GNSS technologies to collect field data and create GIS maps.

CEG 115. Intro to Tech & Sustainability. 3.0 Credits. Class-2.0. Clinical-0.0. Lab-3.0. Work-0.0
This course introduces basic skills, sustainability concepts and career fields for technicians. Topics include career options, technical vocabulary, dimensional analysis, measurement systems, engineering graphics, professional ethics, and related topics. Upon completion, students should be able to identify drawing elements and create sketches, perform basic engineering computations and identify measures of sustainable development.
Corequisites: Take MAT 121 or MAT 171

CEG 151. Cad for Engineering Technology. 3.0 Credits. Class-2.0. Clinical-0.0. Lab-3.0. Work-0.0
This course introduces computer-aided drafting (CAD) software. Topics include file and data management, drawing, editing, dimensioning commands, plotting, and related topics. Upon completion, students should be able to create and plot basic drawings and maps using CAD software.

CEG 210. Construction Materials & Methods. 3.0 Credits. Class-2.0. Clinical-0.0. Lab-3.0. Work-0.0
This course covers the behavior and properties of Portland cement, asphaltic concretes, and other construction materials, including construction methods and equipment. Topics include cementing agents, aggregates, water and admixture materials with their proportions, production, placement, consolidation, curing; and their inspection. Upon completion, students should be able to proportion Portland concrete mixes to attain predetermined strengths, perform standard control tests on Portland cement concrete, identify inspection criteria for concretes, identify construction equipment and applications.
Prerequisites: Take ENG 111

CEG 211. Hydrology & Erosion Control. 3.0 Credits. Class-2.0. Clinical-0.0. Lab-3.0. Work-0.0
This course introduces basic engineering principles and characteristics of hydrology, erosion and sediment control. Topics include stormwater runoff, gravity pipe flow, open channel flow, low impact development (LID), erosion control devices and practices. Upon completion, students should be able to analyze and design gravitational drainage structures, identify LID and erosion control elements, and prepare a stormwater drainage plan.
Prerequisites: Take One Set: Set 1: DMA 060, DMA 070, and DMA 080; Set 2: DMA 065; Set 3: MAT 121; Set 4: MAT 171; Set 5: MAT 003; Set 6: BSP 4003

CEG 212. Introduction to Environmental Technology. 3.0 Credits. Class-2.0. Clinical-0.0. Lab-3.0. Work-0.0
This course introduces basic engineering principles of hydraulics, and water and wastewater technologies. Topics include fluid statics, fluid dynamics, flow measurement, the collection, treatment, and distribution of water and wastewater. Upon completion, students should be able to identify water and wastewater system elements, describe water and wastewater system processes and perform basic hydraulics and treatment computations.
Prerequisites: Take CEG 211; Take EGR 250 EGR 251 or MEC 210

CEG 230. Subdivision Planning & Design. 3.0 Credits. Class-1.0. Clinical-0.0. Lab-6.0. Work-0.0
This course covers the planning and design concepts related to subdivisions including analysis of development standards, engineering, and the creation of CAD drawings. Topics include applicable codes, lot creation, roadway system layout, stormwater drainage, low impact development (LID) concepts, and related topics. Upon completion, students should be able to prepare a set of subdivision plans.
Prerequisites: Take Each Group: Take CEG 151, DFT 151, or EGR 120; Take; CEG 211; Take SRV 111

CEG 235. Project Management and Estimating. 3.0 Credits. Class-2.0. Clinical-0.0. Lab-3.0. Work-0.0
This course covers planning and estimating practices which are applicable to the civil engineering and related construction industries. Emphasis is placed on construction project planning and management, material take-offs labor and equipment requirements in accordance with industry formats, and other economic topics. Upon completion, students should be able to accurately complete material take-offs, prepare cost estimates, and prepare construction schedules.
Prerequisites: Take CEG 115 and CEG 151