CONSTRUCTION ENGR TECH (2990)

2990:125. Statics. (3 Credits)
Prerequisites: 2030:154 and 2820:160. This course covers forces, resultants, and couples. Equilibrium of force systems. Trusses, frames, centroid, moment of inertia, and friction.

2990:129. Computer Applications in Construction. (3 Credits)
This course introduces students to important computing skills for construction managers including software for estimating, scheduling, presentations, general business administration and graphics.

2990:131. Building Construction. (2 Credits)
Materials and methods used in construction. Encompasses buildings constructed with wood, steel, concrete or a combination of these materials.

2990:150. Plan Reading. (2 Credits)

2990:225. Strength of Materials. (3 Credits)

2990:226. Construction Supervision. (3 Credits)
Introduction to topics on construction supervision including planning, directing and coordinating onsite activities to build quality defined by drawings and specifications.

2990:234. Elements of Structures. (3 Credits)

2990:235. Construction Inspection. (3 Credits)
Prerequisite: 2990:131. Fundamentals of total quality management and construction inspection.

Prerequisite: 2030:154. Laboratory testing of soils with emphasis on physical properties of soil. Laboratory and field procedures used for quality control.

2990:238. Materials Testing II. (2 Credits)
Prerequisite: 2030:154. Mix design of concrete. Laboratory testing of concrete containing ordinary Portland cement and pozzolanic admixtures. Experiments demonstrate physical properties as related to design and quality control.

2990:245. Construction Estimating. (3 Credits)
Prerequisite: 2030:154 and 2990:150. Quantity takeoffs in construction to include mass excavations, foundation systems, structural steel, residential construction, and various commercial construction methods.

2990:246. Site Engineering. (3 Credits)
Prerequisites: 2990:131 The content includes study of the development of a site including surveying, excavation, soil treatment, heavy equipment requirements, storm water management, pavement design, and construction of roadways.

2990:248. Construction Graphics. (3 Credits)
Introduction to terminology and drawing basics with a focus on civil/site plans, architectural and structural drawing.

2990:254. Building Codes. (3 Credits)
Prerequisite: 2990:131. Students learn fundamental concepts for construction related to the residential building code.

2990:310. Residential Building Construction. (3 Credits)
Introduction to building design, wood framing, and mechanical systems as commonly found in residential housing.

2990:312. Neighborhood Revitalization Project. (3 Credits)
Residential construction and inspection knowledge used to perform field work, service projects, and written inspection reports.

2990:320. Advanced Materials Testing. (3 Credits)
Prerequisite: 2990:241. This course investigates the usage of precision strain gage applications used by technicians in determining stresses in structural elements and mechanical parts.

2990:351. Construction Quality Control. (3 Credits)
Prerequisites: Admission into the BCET program or permission of instructor. Overview of quality control concepts and techniques as related to the construction industry including the necessary statistical tools; exposes students to civil, mechanical and electrical inspection requirements.

2990:352. Field Management & Scheduling. (2 Credits)
Prerequisites: 2990:245 or permission. Planning, scheduling, and controlling of field work within time and cost constraints. Manual methods and computer software packages studied.

2990:354. Foundation Construction Methods. (3 Credits)
Prerequisites: 2990:234 and 2990:237. Soil mechanics and soils exploration as related to construction. Foundation construction methods and practice in the interest of safety and suitable economy.

2990:356. Safety in Construction. (3 Credits)
The purpose of this course is to explain what creates hazards and why, and to suggest where to anticipate trouble in each phase of the work as it progresses.

2990:358. Advanced Estimating. (3 Credits)
Prerequisite: 2990:245 or permission of instructor. This course focuses on estimating and bidding for public and private construction. Includes heavy/highway, residential and building construction with use of computer software to facilitate bid price.

2990:359. Construction Cost Control. (3 Credits)
Prerequisite: 6200:201 or 2420:211. Course develops a practical understanding of the latest managerial accounting principles and practices as they apply to the construction business.

2990:361. Construction Formwork. (3 Credits)
Prerequisite: 2990:234 or permission. Introduction to design and construction of formwork and temporary wood structures.

2990:362. Advanced Elements of Structures. (3 Credits)
Prerequisite: 2990:234. This course examines advanced topics in structural engineering and is an extension of Elements of Structures.

2990:371. Green & Sustainable Building Practices. (3 Credits)
This course is designed to provide an understanding of sustainable construction practices and their importance on environmental issues.

2990:453. Legal Aspects of Construction. (2 Credits)
Prerequisite: Admission into the BCET program or permission of instructor. Study of business of contracting and subcontracting and legal problems therein such as breach, partial performance, payment, insolvency, subsurface. Review of standard contracts and construction industry rules of arbitration.
2990:455. Computerized Precision Estimating. (3 Credits)
Prerequisite: 2990:245. Students will explore sophisticated software programs utilized by the construction industry to prepare estimates and bid packages.

2990:462. Mechanical Service Systems. (3 Credits)
Introduction to materials and equipment used in mechanical heating, ventilating, air conditioning, water and waste systems.

2990:463. Electrical Service Systems. (3 Credits)
Introduction to materials and equipment in electrical systems of buildings. Includes illumination, electrical sources, materials and distribution. Emphasis of fire safety.

2990:465. Heavy Construction Estimating. (3 Credits)
Prerequisite: 2990:245. Quantity takeoffs and cost analysis to include methods, systems, and equipment relevant to heavy highway and civil infrastructure projects.

2990:466. Hydraulics. (3 Credits)
Prerequisite: 2030:356. Introduction to hydrology. Flow in closed conduits and open channels, distribution, systems, storage requirements and basic concepts of hydraulic structures. Basic concepts of seepage and working knowledge of pumps.

2990:468. Construction Management. (3 Credits)
Prerequisites: 2990:352 and 2990:358. Construction Management takes established construction practices, current technological advances, and latest management methods and makes them into an efficient, smooth working system.

2990:469. Contracts and Specifications. (2 Credits)
Prerequisite: Admission to BSCET program or permission. This course studies the principles and applications of construction specifications, contracts, processes for managing professional risk and increasing economic performance of the construction process.

2990:471. Understanding LEED Guidelines. (3 Credits)
Prerequisite: 2990:371 or permission of instructor. Provides an understanding of LEED guidelines and requirements and help prepare the student for the LEED associate exam.

2990:479. CPC Seminar. (3 Credits)
Prerequisite: Must be of senior level status towards a B.S. Degree in Construction Engineering Technology or permission of instructor. This course prepares students for the content and format of the Certified Professional Constructor’s Examination.

2990:489. Special Topics in Construction. (1-3 Credits)
Prerequisite: Permission of instructor. (May be repeated for up to six credits.) Special lecture/laboratory courses offered once or only occasionally in areas where no formal courses exist.

2990:490. Workshop in Construction. (1-3 Credits)
Prerequisites: Permission of instructor. (May be repeated for up to six credits.) Group studies of special topics in construction. May not be used to meet undergraduate major requirements in construction. May be used for elective credit only.

2990:497. Honors Project. (1-3 Credits)
Prerequisite: Senior standing in Honors College and permission of supervising faculty in student’s degree field and pursuit of major in CET. Individual Senior Honor’s Project relevant to student’s major field of study. Specific projects are approved and supervised by a designated member of the faculty in the student’s degree field.

2990:498. Independent Study in Construction. (1-3 Credits)
Prerequisite: Permission of instructor. (May be repeated for up to six credits.) Directed study in a special field of interest chosen by student in consultation with instructor.