UNIVERSITY OF MARYLAND EASTERN SHORE

UNIVERSITIES AT SHADY GROVE

DEPARTMENT OF CONSTRUCTION MANAGEMENT TECHNOLOGY

COURSE DESCRIPTIONS

CMTE 201 Architectural Drawing 3 crs.
This is an introductory course in architectural planning and blue print reading utilized by architects and builders of residential, commercial, and light industrial properties throughout the construction industry. Students utilize CAD drafting skills and sketches to produce plans, details, and sections used in field and office operations. Lecture one hour, laboratory four hours. Prerequisite: EDTE 131.

CMTE 205 Computer Applications in Construction 3 crs.
This course develops a solid understanding of micro-computers, the Windows operating system, and Internet usage. Students develop proficiency in the use of various commercially available software packages, such as word processing, presentation, spreadsheet, and database management. A variety of construction specific software programs in estimating, scheduling, and construction project management are introduced. Lecture two hours; laboratory two hours. Prerequisite: Sophomore standing.

CMTE 211 Statics 3 crs.
This course covers the composition and resolution of forces, equilibrium of force systems; application of the principles of statics to problems, including force analysis of simple structures; centroids; and moments of inertia. Lecture three hours. Prerequisites: MATH 110 and PHYS 121.

CMTE 212 Strength of Materials 4 crs.
This course covers the behavior of materials subjected to tension, compression, shear, and bending; design of beams and columns; tests to determine the physical properties of various structural materials, including steel, wood, and aluminum; and analysis and interpretation of test data. Lecture three hours; laboratory two hours. Prerequisites: CMTE 211 and MATH 112.

CMTE 214 Construction Surveying 3 crs.
This course covers coordinates, directions, distances and elevations. The course includes traverses, boundary surveys leveling, national rectangular coordinate systems, property description, public land subdivision, metes and bounds, and topographic surveys. Lecture one hour; laboratory four hours. Prerequisite: MATH 110 or MATH 111.

CMTE 230 Construction Materials 3 crs.
The properties of various materials used in construction, such as wood, steel, clay products, concrete, plastic, glass, concrete products, soils, and other materials are covered in this course. Lecture two hours; laboratory two hours.

CMTE 286 Construction Planning & Scheduling 3 crs.
The focus of this course is on the application of planning and scheduling techniques to a construction project. The use of bar charts and critical path method (CPM) are emphasized, as well as cost allocation, resource leveling, scheduling updating, and microcomputer application. Lecture two hours; laboratory two hours. Prerequisites: CMTE 201, CMTE 205.

CMTE 295 Construction Management Internship I 2 crs.
This course is designed to provide students with work experience as interns under supervision of construction professionals. Students become familiar with many phases of construction under actual job conditions, which may include estimating, field engineering, inspecting, scheduling, and supervision. Students must register for the course during summer school and work a minimum of 40 hours per week for six (6) weeks to receive credit for the course. Students enrolled in the Military Reserve Officer Training Corps may receive credit for (1) summer camp experience under this course listing (while enrolled at UMES). Prerequisites: Completion of Sophomore year and permission of instructor.

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CMTE 311 Construction Methods I 3 crs.
The study and analysis of job planning, work methods, materials, equipment, and power tool and equipment safety methods employed on residential construction projects are covered in this course. Lecture one hour; laboratory four hours. Prerequisites: CMTE 201, CMTE 230, and MATH 110 or MATH 111.

CMTE 312 Construction Methods II 3 crs.
This course is a continuation of Construction Methods I as applied to commercial, institutional, and industrial construction projects. Integration of OSHA and MOSHA safety standards for personal safety are covered in this course. Lecture one hour; laboratory four hours. Prerequisite: CMTE 311.

CMTE 313 Structural Design I 3 crs.
This course covers theory and principles of the design of steel and timber structural elements and connections and their applications in construction. Lecture three hours. Prerequisite: CMTE 212.

CMTE 314 Structural Design II 3 crs.
This course covers the theory and principles of the design of reinforced concrete and masonry structural elements and their applications in construction. Lecture three hours. Prerequisite: CMTE 212.

CMTE 315 Environmental Technology I 3 crs.
This course covers heat loss, heat gain, and humidity control; the control of temperature and humidity in buildings; basics of designing heating, ventilation, and air conditioning systems; sizing of pipes and ducts, and selection of HVAC equipment. Principles of water services, drainage, waste and vent, and fire protection systems will also be covered. Lecture two hours; laboratory two hours. Prerequisites: Junior standing, CMTE 201, ENGL 305, MATH 112, and PHYS 121.

CMTE 316 Environmental Technology II 3 crs.
This course covers the principles and practices of electrical systems, lighting systems, vertical transportation for buildings, sound control, and year-round climate control in buildings. The course also includes code provisions and cost estimation. Lecture one hour; laboratory four hours. Prerequisites: CMTE 201, ENGL 305, PHYS 121, PHYS 122, and MATH 112.

CMTE 317 Soils In Construction 3 crs.
This course covers the identification and properties of soils with emphasis on laboratory and field testing. The influence of soil material in certain construction operations and in the construction contract are emphasized. Lecture one hour. Laboratory four hours. Prerequisites: CMTE 212 and CMTE 230.

CMTE 342 Construction Estimating I 3 crs.
The classification of work, quantity survey techniques, as well as cost estimating of labor, material, and equipment used in the completion of construction projects are covered in this course. Lecture two hours; laboratory two hours. Prerequisites: CMTE 311, MATH 110 or MATH 111.

CMTE 395 Construction Management Internship II 2 crs.
This course is designed to provide students with work experience as interns under supervision of construction professionals. Students become familiar with many phases of construction under actual job conditions, which may include estimating, field engineering, inspecting, scheduling, and supervision. Students must register for the course during summer school and work a minimum of 40 hours per week for six (6) weeks to receive credit for the course. Students with verifiable construction experience of three (3) years or more may receive credit under this course listing. Verification will be through letters of recommendation from employer(s) on company letterhead and documented payroll receipts. Junior college transfer students who have completed an Associate Degree Program are required to complete one internship course.

CMTE 425 Construction Management I 3 crs.
This course covers construction industry organization and ethics; contract documents, their relationships, meanings and significance in construction; human relations and communications. Safety, health, and risk control are topics that are also included in this course. Lecture three hours. Prerequisites: CMTE 205, CMTE 286, CMTE 312.

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CMTE 426 Construction Management II 3 crs.
This course covers the effective management and control to complete a construction project in accordance with the contract documents, within budget, on time, and safely. Topics discussed include professional ethics, project management principles, effective communications, cost engineering, management accounting, procurement, change orders, claims, value engineering, safety management, and computer applications. Lecture three hours. Prerequisites: CMTE 286, CMTE 425, and CMTE 445.

CMTE 445 Construction Estimating II 3 crs.
This course covers the analysis and determination of costs of construction operations, including all the normal bid-preparation activities that take place in a constructor's estimating section. This course also includes construction cost accounting and control, microcomputer applications, and professional ethics. Lecture three hours. Prerequisites: CMTE 205 and CMTE 342.

CMTE 454 Site Development 3 crs.
This course covers market analysis and search, site selection criteria, zoning, deed restrictions, physical influences on land, use of information coming from personal interviews and printed information from city and county offices, and preliminary layout and design of selected projects. Lecture two hours; laboratory two hours. Prerequisites: CMTE 201, CMTE 214, and CMTE 312.

CMTE 488 Green Building Technology 3 crs.
This course covers selected construction problems by individuals or project teams. The course includes presentation of selected topics by students and construction industry representatives. Laboratory four hours. Prerequisite: Senior standing in Construction.

CMTE 499 Undergraduate Research in Construction Management Technology 1-3 crs.
This course is designed for the junior-senior undergraduate student who has an interest in pursuing a special problem as an independent research project. Credits and hours may be arranged for either or both semesters and require the consent of the instructor and approval of the Department Chairman.