CONSTRUCTION MANAGEMENT (CM)

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CM Courses

CM 1113 Construction Materials and Assemblies (2 units)
Term Typically Offered: F, SP

Exploration of the various materials, assemblies, and processes used and applied in the building construction. Presentation, discussion, analysis, study and research of construction materials and assemblies. Introductory survey of the various materials explored during the lecture section with a laboratory constructing the same. Course may be offered in classroom-based, online, or hybrid format. 1 lecture, 1 laboratory. Formerly CM 113.

CM 1114 Mechanical, Electrical, and Plumbing Construction Materials and Assemblies (2 units)
Term Typically Offered: F, SP

Exploration of the various materials, assemblies, and processes used and applied in the Mechanical, Electrical and Plumbing (MEP) building services construction process. Includes presentation, discussion, analysis, study and research of MEP construction materials and assemblies. Course may be offered in classroom-based, online, or hybrid format. 1 lecture, 1 laboratory.

CM 1115 Fundamentals of Construction Management (4 units)
Term Typically Offered: F, SP

Introduction to the fundamentals of project based estimating, scheduling, construction project management, and building technology. Course may be offered in classroom-based, online, or hybrid format. 2 lectures, 2 laboratories. Formerly CM 115.

CM 1280 Fundamentals of Virtual Design and Construction Management (3 units)
Term Typically Offered: F, SP, SU

Use of building information modeling software to emphasize residential, commercial, and heavy civil assembly methods and techniques. BIM drafting applications integrated with construction materials, details, and assemblies supporting the understanding of the construction building process. Course may be offered in classroom-based, online, or hybrid format. 1 lecture, 2 laboratories. Formerly CM 280.

CM 1413 Jobsite Construction Management (3 units)
Term Typically Offered: F, SP, SU

Management activities applicable to the construction process involving techniques, applications, and theory needed in a jobsite environment. Addresses the relationships, roles, and perspectives of all stakeholders. Integrated utilization of temporary structures associated with field construction. Field trip required. Course may be offered in classroom-based, online, or hybrid format. 1 lecture, 2 laboratories. Replaced CM 413.

CM 2113 Soil Analysis and Construction of Foundations & Temporary Structures (2 units)
Term Typically Offered: F, SP
Prerequisite: CM 113 or CM 1113.

Principles and practices for the analysis of soils and sustainable design, fabrication, and installation of foundations systems for building systems and temporary structures for construction. Methods and materials used for excavation and foundation construction; including cost, schedule, and safety considerations. Field trip required. Course may be offered in classroom-based, online, or hybrid format. 1 lecture, 1 laboratory.

CM 2114 Principles of Mechanical, Electrical, and Plumbing Building Systems (2 units)
Term Typically Offered: F, SP
Prerequisite: CM 1114.

Principles and practices for the sustainable design, fabrication, and installation of mechanical, electrical, and plumbing (MEP) building systems; including thermodynamics, air/gas, water/waste water, electrical, lighting, and control systems. Methods and materials used for fabrication and installation; including cost and schedule considerations. Course may be offered in classroom-based, online, or hybrid format. 1 lecture, 1 laboratory.

CM 2239 Construction Surveying (3 units)
Term Typically Offered: F, SP
Prerequisite: MATH 141 or MATH 1261.

Theory and practice of plane surveying with an emphasis on construction applications. May include operation and care of survey equipment, distance measurement, leveling, angular measurement, construction layout and staking, earthwork analyses, basic utilities and roadwork, as-built surveys, legal land descriptions, and surveying workflow management. Field trip required. Course may be offered in classroom-based, online, or hybrid format. 2 lectures, 1 laboratory. Formerly CM 239.

CM 3214 Residential Construction Management (4 units)
Term Typically Offered: F, SP
Prerequisite: CM 115 or CM 1115; CM 280 or CM 1280; and CM 413 or CM 1413.

Materials, methods, and techniques associated with residential construction operations. May include foundations, framing, roofing, MEPF systems (mechanical, electrical, plumbing and fire protection), and exterior and interior finishes. Scheduling, estimating, and contract documents are integrated into a project-based approach. Field trip may be required. Course may be offered in classroom-based or hybrid format. 2 lectures, 2 laboratories. Formerly CM 214.

CM 3310 Construction Means and Methods (3 units)
Term Typically Offered: F, SP
Prerequisite: Sophomore standing and Construction Management minor.

Construction means, methods, and techniques related to the built environment including residential, commercial, heavy civil and HVACR construction. Focus on the major material assemblies and systems in construction with an emphasis on practices, procedures, sequences, tools, equipment, and temporary structures. Course may be offered in classroom-based or hybrid format. 3 lectures. Formerly CM 310.

CM 3313 Commercial Construction Management (4 units)
Term Typically Offered: F, SP
Prerequisite: ARCE 211 or ARCE 1121; and CM 214 or CM 3214.

Materials, methods, and techniques associated with large commercial and institutional construction operations. Building systems analysis of foundations, waterproofing, structural framing, exterior cladding, and finishes. Scheduling, estimating, and construction contracts are integrated into a project based approach. Field trip may be required. Course may be offered in classroom-based or hybrid format. 2 lectures, 2 laboratories. Formerly CM 313.

CM 3314 Heavy Civil Construction Management (4 units)
Term Typically Offered: F, SP
Prerequisite: Construction Management major or Heavy Civil minor, and ARCE 211 or ARCE 1121, and CM 2113, and CM 214 or CM 3214; or Heavy Civil minor and CE 3375 and ENGR 2211.

Materials, methods, and techniques associated with civil engineering projects and heavy construction operations. Bridge, dam, pile driving, road construction, rigging and load handling, structural steel erection; equipment selection, tilt-up and temporary structures. Scheduling, estimating, and construction contracts. Course may be offered in classroom-based or hybrid format. 2 lectures, 2 laboratories. Formerly CM 314.

CM 3317 Sustainability and the Built Environment (3 units)
Term Typically Offered: F, SP, SU
2026-28 or later: Upper-Div GE Area 2/5
2020-26 catalogs: Upper-Div GE Area B
Sustainability Focused
Prerequisite: Junior standing; completion of GE Area 1 with grades of C- or better (GE Area A for the 2020-26 catalogs); and completion of GE Area 2 with a grade of C- or better (GE Area B4 for the 2020-26 catalogs).

Interdisciplinary analysis of sustainable strategies and technologies to enhance the built environment. A systems approach to green building science that includes sustainable site development, water use efficiency, renewable energy, improving material use, indoor environmental quality, and design innovation. Course may be offered in classroom-based, online, or hybrid format. 3 lectures. Fulfills GE Areas Upper-Division 2 or Upper-Division 5 (GE Area Upper-Division B for students on the 2020-26 catalogs). Formerly CM 317.

CM 3318 Housing and Communities (3 units)
Term Typically Offered: F, SP, SU
2026-28 or later: Upper-Div GE Area 4
2020-26 catalogs: Upper-Div GE Area D
Sustainability Related
Prerequisite: Junior standing; completion of GE Area 1 with grades of C- or better (GE Area A for the 2020-26 catalogs); completion of GE Area 2 with a grade of C- or better (GE Area B4 for the 2020-26 catalogs); and completion of one lower-division course in GE Area 4 (GE Areas D1 or D2 for the 2020-26 catalogs).

An overview of the social, economic, environmental and cultural impacts of housing on communities and nations. Students are presented with varied perspectives to understand the different facets of housing and their impacts on the human experience. Course may be offered in classroom-based, online, or hybrid format. 3 lectures. Fulfills GE Area Upper-Division 4 (GE Area Upper-Division D for students on the 2020-26 catalogs). Formerly CM 318.

CM 3334 Construction Law (2 units)
Term Typically Offered: F, SP
Prerequisite: Junior standing.

Intersection of law and the construction industry. Survey of most major legal issues potentially encountered during construction activity. Course may be offered in classroom-based, online, or hybrid format. 2 lectures. Formerly CM 334.

CM 3335 Construction Economics, Finance, and Accounting (3 units)
Term Typically Offered: F, SP, SU
Prerequisite: One of the following: BUS 212, BUS 2212, BUS 214, or BUS 2214.

Principles of economic evaluations using time value of money to compare cost alternatives related to construction, design, and real property development. Fundamentals of construction accounting principles to include income recognition, job cost control, cash flow analysis and associated cost reports. Course may be offered in classroom-based, online, or hybrid format. 3 lectures. Formerly CM 335.

CM 4411 Specialty Contracting Construction Management (4 units)
Term Typically Offered: F, SP
Prerequisite: CM 2114; and CM 313 or CM 3313.

Construction Managment of mechanical, electrical, and plumbing systems. Heating, ventilating, air conditioning, power distribution, grounding, lighting, communication, fire detection/protection, and plumbing. Integration of scheduling, estimating, and construction subcontracts with a project-based approach. Course may be offered in classroom-based, online, or hybrid format. 2 lectures, 2 laboratories. Formerly CM 411.

CM 4420 Professional Preparation (1-4 units)
Term Typically Offered: F, SP, SU
Prerequisite: Junior standing.

Professional practice related to the construction management industry. Goals and objectives achieved through analysis, study, and preparation for a particular professional practice. The Class Schedule will list subtitle selected. Repeatable to 4 units. Course may be offered in classroom-based, online, or hybrid format. 1 to 4 lectures. Formerly CM 422.

CM 4421 Interdisciplinary Practices (1-3 units)
Term Typically Offered: F, SP, SU
Prerequisite: Junior standing.

Advanced examination of selected interdisciplinary topics. Topics will be examined from perspective of multiple disciplines. The Class Schedule will list subtitle selected. Repeatable up to 3 units. Course may be offered in classroom-based, online, or hybrid format. 1 to 3 lectures. Formerly CM 424.

CM 4436 Heavy Civil Temporary Structures and Shoring (3 units)
Term Typically Offered: F
Prerequisite: One of the following: ARCE 211, ARCE 1121, CE 352 or CE 3352; and one of the following: CM 314, CM 3314, CE/CM 371, or CE 3375.

Design and construction of retaining walls, concrete formwork, falsework, scaffolding, ramps, platform, bracing, and guying as applied to heavy civil projects. Field trip may be required. 2 lectures, 1 laboratory. Crosslisted as CE/CM 4436. Formerly CE/CM 436.

CM 4437 Heavy Civil Projects and Equipment (3 units)
Term Typically Offered: SP
Prerequisite: One of the following: CM 314, CM 3314, CE/CM 371, or CE 3375.

Heavy civil projects logistics, construction, operations, planning, management, workflow and sequencing, equipment management, fleet configuration and maintenance, equipment productivity and cost optimization, asphalt specifications. 2 lectures, 1 laboratory. Crosslisted as CE/CM 4437. Formerly CE/CM 437.

CM 4443 Management of the Construction Firm (2 units)
Term Typically Offered: F, SP
Prerequisite: CM 3335 or Senior Standing and consent of instructor.

Applications of strategic management techniques and business strategies for long-range planning of the construction firm. Entrepreneurialism, ethics, finance, organizational structure and leadership while understanding labor relations and human resource management. Course may be offered in classroom-based, online, or hybrid format. 2 lectures. Formerly CM 443.

CM 4450 Integrated Facility Development, Design, Construction, and Operations (3 units)
Term Typically Offered: F, SP, SU
Prerequisite: CM 3313 or CM 3314; or Senior standing and consent of instructor.

Evaluation of roles and relationships of owner, designer, and construction professionals over project life cycles. Modeling, conceptual estimating, lean scheduling, contract selection, integrated delivery, design management, program management, and influential leadership strategies and techniques. Course may be offered in classroom-based, online, or hybrid format. 1 lecture, 2 laboratories. Formerly CM 450.

CM 4461 Senior Project I (3 units)
Term Typically Offered: F, SP
Prerequisite: Senior standing and Construction Management major.

Senior project preparation and development around a topic including processes, timelines, requirements, and best practices. Outcome for the course will include topic selection, literature review, methodology, and paper formatting. Course may be offered in classroom-based, online, or hybrid format. 3 lectures. Formerly CM 461.

CM 4462 Senior Project II (3 units)
Term Typically Offered: F, SP
Corequisite: CM 4461.

Completion of a two semester comprehensive project under faculty supervision. Carried out and completed involving the student's technical and creative skills, including completion and submission of final paper. Course may be offered in classroom-based, online, or hybrid format. 3 lectures. Formerly CM 462.

CM 4475 Real Property Development Principles (3 units)
Term Typically Offered: F, SP
Prerequisite: Junior standing.

Development process and its major actors: investors, developers, government agencies, environmental and local stakeholders; their development roles, objectives, approaches. Basics of urban markets and economics, financing, regulation, public planning; value added, contractual, environmental and community context factors. Course may be offered in classroom-based, online, or hybrid format. 3 lectures. Formerly CM 475.

CM 4485 Cooperative Education Experience (1-6 units)
Term Typically Offered: F, SP
CR/NC
Prerequisite: Consent of instructor.

Work experience in an area directly related to the construction industry for 3 months. Positions are paid and usually require relocation and registration in course for one term. Registration in course is required at start of work experience. Formal report and evaluation by work supervisor required. Repeatable up to 12 units. Credit/No Credit grading only. Formerly CM 485.

CM 4495 Cooperative Education Experience (12 units)
Term Typically Offered: TBD
CR/NC
Prerequisite: Consent of instructor.

Work experience in an area directly related to the construction industry for 6 months. Positions are paid and usually require relocation for two consecutive semesters. Registration in course is required at start of work experience. Formal report and evaluation by work supervisor required. Repeatable up to 24 units. Credit/No Credit grading only. Formerly CM 495.