

CONSTRUCTION MANAGEMENT • CM

†Registration in any course above CM 2121 is restricted to students admitted to a senior college with a declared CM major or minor. A grade of "C" or better is required in all CM prerequisite course.

1010 Construction Graphics and Nomenclature (3) Credit or registration in MATH 1550. 2 hrs. lecture; 2 hrs. lab. Graphic communication concepts and techniques relating to construction processes and nomenclature.

1020 Engineering Graphics for Mechanical Engineering (2) 4 hrs. lab. Credit will not be given for both this course and CM 1030. Not open to construction management majors. Conception, visualization, and communication of creative design concepts; introduction to engineering drafting and USA Standards Institute standards; freehand sketching; three-dimensional forms used in solution of engineering problems; use of solid modeling software in design and design communication.

1030 Engineering Graphics (2) 4 hrs. lab. Credit will not be given for both this course and CM 1020. Not open to construction management and mechanical engineering majors. Conception, visualization, and communication of creative design concepts; introduction to engineering drafting and USA Standards Institute standards; freehand sketching; three-dimensional forms used in solution of engineering problems; use of automated graphical techniques in design and design communication.

2012 Plan and Cost Analysis for Residential Construction (3) Prereq.: CM 1010 and MATH 1550 with a "C" grade or better. 2 hrs. lecture; 2 hrs. lab. Interpretation of working drawings and specifications; cost estimation; bidding; materials, methods, and equipment for residential construction.

2121 Materials, Methods, and Equipment I (3) Prereq.: credit or registration in CM 2012. Job planning, work methods, materials, and equipment required in building and heavy construction.

†**2131 Materials, Methods, and Equipment II (Heavy and Industrial Construction) (3)** Prereq.: CM 2121. Continuation of CM 2121. Emphasis on both heavy and industrial equipment.

†**2141 Construction Planning and Scheduling (3)** Prereq.: ISDS 1100 or IE 2060 and CM 2121 or IE 1002. Fundamentals of planning and scheduling techniques used in the construction industry to manage construction projects.

†**3000 Construction Safety (3)** Construction safety relating to accident causation; contractual obligations; project management and coordination.

†**3100 Construction Surveying (3)** Prereq.: CM 2121. 2 hrs. lecture; 2 hrs. lab. Principles of construction surveying, fundamental measuring procedures, error analysis, leveling, traverse measurements, horizontal curves, vertical curves, and earthwork calculations.

†**3121 Commercial Construction Estimating (3)** Prereq.: CM 2012 and 2121. 2 hrs. lecture; 2 hrs. lab. Principles of estimating including quantity surveys, pricing analysis, and bid package preparation for commercial construction.

†**3131 Industrial Construction Estimating (3)** Prereq.: CM 2131 and 3121. 2 hrs. lecture; 2 hrs. lab. Principles of estimating including quantity surveys, pricing analysis, and bid package preparation for industrial construction.

†**3141 Highway Construction (3)** Prereq.: CM 3100. Basic fundamentals of highway construction including: earthmoving, drainage, road paving, bridge, and retaining walls; interpretation of plans and specifications; materials, methods, equipment, and estimating.

†**3210 Advanced Computer Applications for Construction Management (3)** Prereq.: CM 2141. Application of software programs currently being used in the construction industry.

†**3303 Mechanical and Electrical Systems (3)** Prereq.: CM 2121 and PHYS 2002. Mechanical and electrical systems in residential and commercial buildings; nomenclature and design consideration; emphasis on management, quality control, and installation procedures.

†**3400 Construction Materials (3)** Prereq.: CM 2121. Fundamentals involved in design, evaluation, testing, and construction of asphalt, concrete, aggregates, steel, timber, and composites; mechanic properties of soils, compaction, and slope stability; construction of shallow and deep foundations, and retaining walls.

†**3505 Structural Technology I (3)** Prereq.: MATH 1550 and PHYS 2001. Rigid and deformable body structural mechanics for construction management majors focusing on determination of the nature, magnitudes, and equilibrium requirements of forces acting on structures and the internal load effects (stress and deformation) of these forces on the structural components.

†**3506 Structural Technology II (3)** Prereq.: CM 3505. Structural design of ordinary timber, steel, and reinforced concrete buildings and bridges in accordance with appropriate design code specifications; emphasizes allowable stress design provisions to achieve safe and serviceable structural resistance to vertical and lateral load effects.

†**4200 Construction Administration (3)** Prereq.: CM 2141, 3121 and credit or registration in CM 3000. Principles and theory of ownership, organization, contracts, insurance, bonding, and labor relations pertaining to the construction industry.

†**4201 Construction Law (3)** Prereq.: CM 4200. The law of business and current legal problems, roles, and responsibilities associated with the construction industry; emphasis on claims avoidance.

†**4202 Construction Enterprise (3)** Prereq.: CM 3210 and 4200. Open to Construction Management majors only. A comprehensive study of construction management as it relates to a single construction enterprise.

†**4206 Special Topics in Construction Management (3)** May be taken for a max. of 6 sem. hrs. when topics vary. Advanced topics, current issues, or recent developments in the construction industry.

†**4207 Independent Study (3)** Prereq.: consent of a faculty member. May be taken for a max. of 6 sem. hrs. of credit when topics vary. Research on a construction topic as chosen by the student under direct supervision of a chosen faculty member.