

BCN 1001 Introduction to Construction Management. F, S. (1) (S/U). To familiarize pre-construction students with the nature and functioning of the construction industry and the Construction management curriculum. The specific safety regulations pertaining to the construction industry will be emphasized.

BCN 1210 Construction Materials. F, S. (3). Sources, properties and uses of construction materials.

BCN 1251C Construction Drawing. F, S. (3). Provides basic working knowledge of architectural graphics, practice in instrumental drawing, and experience in free hand sketching.

BCN 1582 International Sustainable Development. F, S. (3). (S, I). Provides an overview of international trends in reducing the environmental impacts of land development and construction. Surveys best practices in a dozen countries around the world.

BCN 2400C Construction Mechanics Statics. SS. (2). *Prereq: PHY 2004 and PHY 2004L.* An introductory course in the evaluation of structural behavior as it relates to building. Primarily for building construction majors. The combination of BCN 2400 and 2401 is equivalent to BCN 2405.

BCN 2401C Construction Mechanics Strength of Materials. SS. (2). *Prereq: BCN 2400.* Structural behavior of load resisting members in buildings. Properties of structural materials. Primarily for building construction majors. The combination of BCN 2400 and 2401 is equivalent to BCN 2405.

BCN 2405C Construction Mechanics. F, S. (4). *Prereq: PHY 2004 and PHY 2004L.* An introductory course in the evaluation of structural behavior as it relates to buildings, the properties of structural materials, and the structural behavior of load resisting members. Primarily for building construction majors.

BCN 3012 History of Construction. F, S. (3). (H, I). Traces western building technology from prehistoric man to the present. Development of the art and science of building.

BCN 3027C Principles of Construction Management. F, S. (3). *Prereq: junior standing, or permission of instructor.* Examination of role of various players involved in the construction and the administration of a construction project. Importance of ethical conduct in all aspects of construction business and operations. Development of advanced writing and presentation skills for construction professionals.

BCN 3223C Soils and Concrete. F, S. (3). *Prereq: BCN 1210, BCN 2405C, BCN 3224C.* Study of the construction process to include soils, demolition, earth-moving equipment, foundations, concrete mix design, and concrete placement techniques. Includes field visits and soils and concrete laboratories.

BCN 3224C Construction Techniques. F, S. (3). *Prereq: BCN 1210 and BCN 1251C.* Study of vertical construction process to include wooden platform frame construction, cast-in-place and pre-cast concrete construction, and steel erection. Included are masonry construction, interior and exterior finishes, vertical transportation, roofing and other building components.

BCN 3240C Equipment and Methods for Heavy/Highway Construction. S. (3). *Prereq: Junior or Senior standing.* Theory and practice of equipment utilization and construction methods. Analysis of costs through production rates. Optimizing crew and equipment. Labor and heavy equipment production. Earthwork (sitework) execution methods and inspection.

BCN 3255C Graphic Communication in Construction. F, S. (3). *Prereq: BCN 1251C.* Study of construction communication tools, including the use of computer-aided drafting (applications of 4-D modeling in construction), blueprint reading, free hand sketching, model building, piece-based simulations and the Internet.

BCN 3281C Construction Methods Laboratory. F, S. (2). Construction aspects of surveying with field and classroom exercises in the use of transit, level, chain and related equipment.

BCN 3431C Structures. F, S. (3). *Prereq: BCN 2405C.* To familiarize the student with the material properties, code requirements, analysis, and construction procedures for steel and reinforced concrete structures.

BCN 3521C Electrical Systems. F, S. (2). Principles and practices of electrical systems, including code provisions and cost estimations.

BCN 3611C Construction Estimating 1. F, S. (3). *Prereq: BCN 3027C, 3224C and BCN 3255C.* Classification of work, quantity survey techniques and basic estimating principles applied to simple construction projects.

BCN 3700 Construction Contracts. F, S. (3). *Prereq: BCN 3027C.* Function of the construction industry, construction contracting practices and construction contracts and delivery methods. Demonstrate professional writing and presentation skills. Be aware of the ethical questions that arise in construction contracts and procurement.

BCN 3730 Construction Safety, Health and Environment. F, S. (3). Construction safety issues, concerns, requirements, and procedures. The analysis includes costs, planning, administration, inspection, prevention, loss control and drug-free place. Understanding of the major health issues encountered on construction sites. Appreciation for the need to be environmentally responsible.

BCN 4105 Sustainable Housing: Putting the 3 E's into Residential Practice. S. (3). Sustainability: The balance and intersection of "the 3 e's": environment, economics and social equity. Post-industrial residential planning and building practices have neglected to address the 3 e's. In this course students will learn "Sustainable" includes more than building green and examine approaches to advance the development and building of sustainable housing.

BCN 4237 Roofing Systems. F. (3). Study and analysis of building various roof systems, including design, materials, installation, inspection and maintenance. Includes damp-proofing and waterproofing techniques.

BCN 4252 Introduction to Building Information Modeling. S. (3). *Prereq: BCN 3255C.* Learn current building information modeling (BIM) software to identify design errors, to improve construction process.

BCN 4423C Temporary Structures. F, S. (3). *Prereq: 3431C, senior standing.* To study the temporary structures that contractors have to build in order to construct the primary structure. This includes formwork; scaffolding; and equipment for hoisting materials, personnel, and erecting structures.

BCN 4510C Mechanical Systems. F, S. (4). *Prereq: senior standing.* Principles and practices of building piping systems, hydraulics and pumps, comfort conditioning systems for building, heating and refrigeration equipment, building code considerations, plan reading and cost estimation.

BCN 4594 Building Energy Modeling F (3) As energy becomes a more precious commodity, it's crucial to design and operate high performance buildings. A solid foundation of energy engineering and sustainability principles is essential to achieving these higher performance standards.

BCN 4612C Construction Estimating 2. F, S. (3). *Prereq: BCN 3611C, BCN 3223C and senior standing.* Analysis and determination of cost of construction operations including applicable indirect and overhead costs and the preparation of bid proposals for commercial construction projects. A cost control system is introduced and implemented with sample field generated problems.

BCN 4709C Construction Project Management. F, S. (3). *Prereq: BCN 4612C and senior standing.* Understanding the various forms of project delivery methods (Design-Bid-Build, Design-Build, and Construction Management) and the underlying principles for choosing the appropriate system. Recognizing the complexity of the preconstruction process including conceptual estimating & scheduling, life cycle costing, constructability reviews, value engineering, risk management, and special contract requirements. Understanding management and administration of a construction project.

BCN 4712C Leadership and Management in Construction. F, S. (3). *Prereq: senior standing.* Leadership and management principles for construction professionals, with a major emphasis on the diverse workforce; ethical issues in construction; and the development of negotiation and conflict resolution skills.

BCN 4720 Construction Planning and Control. F, S. (3). *Prereq: BCN 3611C and senior standing.* Computer application of cost and manpower estimates as construction scheduling and management techniques.

BCN 4723 - Design-Build Delivery Methods. F. (3). *Prereq: Junior/Senior Standing.* Theory and practice of design-build contract delivery method. This will include an explanation of the history of design-build, the advantages and disadvantages of design-build as a delivery method and a thorough analysis of the major components of design and construction.

BCN 4753 Construction Finance. F, S. (3). *Prereq: senior standing.* Basic principles and applications of construction finance with an emphasis on the acquisition and management of construction loans, mortgages and construction accounting. Understand the Contractor's balance sheet.

BCN 4787C Construction Capstone Project. F, S. (3). *Prereq: BCN 4612C, BCN 4720, BCN 4753 and senior standing.* A construction project will be simulated with each student being responsible for designing, developing, estimating, scheduling, contracting and administering the work for the completion of a small commercial, residential, civil, or light industrial project.

BCN 4880 Management Heavy/Highway Construction F. (3). *Prereq: junior or senior standing.* Theory and practice of construction planning, methods and project management. Project control from conception through the construction phase: procurement of design professional, prime contractor, subcontractor, construction manager, project/program manager. Also includes definition of and delineation between each entity, construction contract types, delivery systems, heavy/highway plans reading, quality assurance/quality control, nuances of planning and bidding a unit price project, and project administration.

BCN 4905 Special Studies in Construction. F, S, SS. (1-4). Special areas of study in construction adjusted to the needs of individual students. Enrollment upon recommendation of director only.

BCN 4949 Construction Management Internship. (F, S, SS) (3). Minimum two-term employment in construction management. Requires advance approval. Internship work reports and oral presentation also required. (S-U)

BCN 4956 International Studies in Construction. SS. (1-4); can be repeated with a change in content up to 6 credits). *Prereq: Admission to a UF approved study abroad program and permission of the school director.* Formal course work taken at a foreign university as part of an approved study abroad program. The course focus is on the construction industry in the host country. Course content will vary and may address various construction issues including local construction techniques, construction materials, and the influence on construction of the local culture, traditions, architecture, history, and political climate.