

CONSTRUCTION MANAGEMENT

BCN 5470 Construction Methods Improvements 3 Credits

Grading Scheme: Letter Grade

Methods of analyzing and evaluating construction techniques to improve project time and cost control. Work sampling, productivity ratings, crew balance studies, time lapse photography, and time management.

Prerequisite: graduate standing.

BCN 5618C Comprehensive Estimating 3 Credits

Grading Scheme: Letter Grade

Classification of work and quantity survey techniques. Analysis and determination of costs of construction operations including direct and overhead costs, cost analysis, and preparation of bid proposals.

Prerequisite: graduate standing.

BCN 5625 Construction Cost Analysis 3 Credits

Grading Scheme: Letter Grade

Study of cost engineering and cost distribution and comparative analysis of actual and estimated cost as used for project control.

Prerequisite: BCN 4612C/BCN 5618C, 4720/BCN 5722 graduate standing.

BCN 5705C Project Management for Construction 3 Credits

Grading Scheme: Letter Grade

Project organization, site planning, and implementation.

Prerequisite: BCN 5618C, BCN 6748, non-BCN graduate.

BCN 5722 Advanced Construction Planning and Control 3 Credits

Grading Scheme: Letter Grade

Time-cost relationships for various construction operations.

Prerequisite: BCN 4720, graduate standing.

BCN 5729 Design-Build Delivery Methods 3 Credits

Grading Scheme: Letter Grade

This course will be focusing on an in depth examination of the advantages and disadvantages of design-build, the methodology of the design-build delivery process and implementation of this process. The class will be featuring inter-disciplinary instructors, industry speakers, and a design-build team competition with industry and faculty judges.

BCN 5737 Advanced Issues in Construction Safety and Health 3 Credits

Grading Scheme: Letter Grade

Current construction safety and health issues. Development of specific methodology to provide hazard reduction on job sites.

Prerequisite: BCN 4735, graduate standing.

BCN 5776 International Construction Business Management 3 Credits

Grading Scheme: Letter Grade

Construction contracting, emphasis on international economics, marketing, contracts, design, and specifications.

Prerequisite: BCN 6748, graduate standing.

BCN 5778 Facilities Operation and Maintenance 3 Credits

Grading Scheme: Letter Grade

Facilities management as a specialized professional career; study of how a facility, its people, equipment, and operations are served and maintained.

Prerequisite: graduate standing.

BCN 5789C Construction Project Delivery 3 Credits

Grading Scheme: Letter Grade

Designing, developing, estimating, scheduling, contracting, and administering small construction project, including extensive site and feasibility analysis.

Prerequisite: BCN 5618C, 4720, BCN 6748, non-BCN graduate.

BCN 5874 Equipment and Methods for Heavy Construction 3 Credits

Grading Scheme: Letter Grade

Teaching non-engineering students the theory and practice of heavy equipment utilization and construction methods through analysis of costs through production rates, optimizing crew, and equipment. Also including an introduction to planning and executing a construction project.

BCN 5885 Methods and Management for Heavy Construction 3 Credits

Grading Scheme: Letter Grade

Project control from conception through the construction phase: procurement of design professional, prime contractor, subcontractor construction manager, project/program manager, etc., and the 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.

BCN 5905 Special Studies in Construction 1-5 Credits, Max 12 Credits

Grading Scheme: Letter Grade

For students requiring supplemental work in the building construction area.

Prerequisite: graduate standing.

BCN 5949 Graduate Construction Management Internship 1-3 Credits, Max 6 Credits

Grading Scheme: S/U

Two-term employment in construction management position.

Prerequisite: approval of graduate coordinator.

BCN 5957 Advanced International Studies in Construction 1-4 Credits, Max 6 Credits

Grading Scheme: S/U

Issues of local construction techniques, construction marketing, international construction, sustainability, global economics, and influence on construction of local culture, traditions, architecture, history, and political climate.

Prerequisite: graduate standing or supervising instructor's approval; admission to approved study abroad program.

BCN 6036 Research Methods in Construction 3 Credits

Grading Scheme: Letter Grade

Research proposal development process and statistical, computational, visualization, and presentation tools available to researcher.

Prerequisite: graduate standing.

BCN 6558C Building Integrated Renewable Energy Systems 3 Credits

Grading Scheme: Letter Grade

Addressing the emergence of economically and technically viable renewable energy systems and US and European Union policies calling for a net zero built environment. Provides the renewable energy piece for the Sustainable Construction (SCN) track in the BCN Masters program. It also provides additional capabilities and opportunities for students interested in employment in the renewable energy sector.

Prerequisite: Graduate standing in Construction Management, Engineering or Architecture

BCN 6580 High-Performance Green Building Delivery Systems 3 Credits**Grading Scheme:** Letter Grade

High-performance green buildings; emerging delivery systems, evaluating their sustainability, and details on LEED criteria.

Prerequisite: graduate standing, BCN 6585/ICM 6680, or consent of instructor.**BCN 6583 Sustainable Housing 3 Credits****Grading Scheme:** Letter Grade

Familiarizes students with various approaches to developing and constructing sustainable residential environments, incorporating environmental, social and financial sustainability practices. Students examine a range of metrics and approaches for benchmarking and performance. Projects involve case studies of sustainable housing and developments in Florida and throughout the US and world.

BCN 6584C Building Energy Modeling 3 Credits**Grading Scheme:** Letter Grade

As energy is becoming more precious, it is crucial for building sector to proactively design and operate high performance buildings. To achieve higher standards in building design and operation, a solid foundation of energy engineering and sustainability principles is essential.

Prerequisite: Graduate Standing in Building Construction, Engineering, or Architecture.**BCN 6585 Sustainable Construction 3 Credits****Grading Scheme:** Letter Grade

Sustainability principles applied to planning, design, operation, renovation, and deconstruction of built environment. Emphasis on resource efficiency, environmental protection, and waste minimization.

Prerequisite: graduate standing.**BCN 6586 Construction Ecology and Metabolism 3 Credits****Grading Scheme:** Letter Grade

Sustainability principles and concepts related to reducing environmental impacts of creating, operating, and deconstruction built environment.

Prerequisite: graduate standing.**BCN 6641 Construction Value Engineering 3 Credits****Grading Scheme:** Letter Grade

Principles and applications of value engineering in construction industry.

Prerequisite: BCN 4612C/BCN 5618C, graduate standing.**BCN 6748 Construction Law 3 Credits****Grading Scheme:** Letter Grade

Formation of a company, licensing, bid process, contracts, plans and specifications, mechanics liens, insurance bonds, and remedies as they relate to the building constructor and construction manager. Case studies.

Prerequisite: graduate standing.**BCN 6785 Construction Information Systems 3 Credits****Grading Scheme:** Letter Grade

Potential applications of computer and information systems in construction industry.

Prerequisite: CGS 2531 or equivalent, graduate standing.**BCN 6905 Directed Independent Study in Construction 1-3 Credits, Max 3 Credits****Grading Scheme:** Letter Grade

Directed Independent Study in Construction

Prerequisite: graduate standing.**BCN 6933 Advanced Construction Management 1-5 Credits, Max 12 Credits****Grading Scheme:** Letter Grade

Financial and technological changes affecting construction and the management of construction projects.

Prerequisite: graduate standing.**BCN 6940 Supervised Teaching 1-3 Credits, Max 3 Credits****Grading Scheme:** S/U

Supervised Teaching

Prerequisite: graduate standing.**BCN 6971 Research for Master's Thesis 1-15 Credits****Grading Scheme:** S/U

Research for Master's Thesis

Prerequisite: graduate standing.**FES 6705 Communications in Emergency Management 3 Credits****Grading Scheme:** Letter Grade

Discussing several aspects of communication: communication coordination among emergency responders and agencies; effective communication with the public, including education programs; and guidelines for media relations and the use of new and traditional media to communicate during a crisis

FES 6724 Fire and Emergency Services Response Planning 3 Credits**Grading Scheme:** Letter Grade

Comprehensive response planning including theory and value of response planning are examined. Steps to develop a strategic response plan are examined and discussed.

FES 6726 Hazard Mitigation and Preparedness 3 Credits**Grading Scheme:** Letter Grade

Introducing major principles involved in preparing for and mitigating the impact of hazards in the context of ES/DM including key features and characteristics of both natural and man-made hazards, the risk assessment process that is used to determine community vulnerability, and in-depth discussion of hazard mitigation planning.

FES 6735 International Emergency/Disaster Management 3 Credits**Grading Scheme:** Letter Grade

Applying science and technology, planning, risk analysis, and management in dealing with events that have the potential to kill and injure large numbers of people, do extensive property damage, and destroy our economic and physical infrastructure.

FES 6736 Homeland Security and Emergency Management 3 Credits**Grading Scheme:** Letter Grade

Understanding of issues related to domestic and international terrorism, understanding of key terms and incidents, and development of practical plans for providing emergency services before, during, and after a terroristic incident.

FES 6786 Research Methods in FES 3 Credits**Grading Scheme:** Letter Grade

Covering the research proposal development process and the statistical, computational, visualization, and presentation tools available to the researcher.

Prerequisite: Completion of 18 graduate credit hours in FES

FES 6806 Disaster Response and Recovery 3 Credits**Grading Scheme:** Letter Grade

Exploring response and recovery operations in the emergency / disaster management profession. Typical challenges to be expected during response efforts along with tools and techniques to enhance the ability to protect lives, reduce property damage and minimize disruption through multi-organizational preparedness, coordination and improvisation will be examined.

FES 6826 Emergency Services - Disaster Planning 3 Credits**Grading Scheme:** Letter Grade

Introducing the process and practice of emergency/disaster planning. The relationship between emergency planning and disaster management and the principles of social psychology, communication theory and approaches to public education are explored.

FES 6827 Business Continuity and Disaster Planning 3 Credits**Grading Scheme:** Letter Grade

Addressing risks from cyber attacks, rioting, protests, product tampering, bombs, explosions, and terrorism. Extensive disaster planning and readiness checklists and developing alternate work and computing sites and emergency facilities.

FES 6836 Impacts of Natural and Man-made Disasters on Buildings 3 Credits**Grading Scheme:** Letter Grade

Impacts of natural and man-made disasters, including terrorist attacks, on buildings.

FES 6916 Research for Master's Report 3 Credits**Grading Scheme:** S/U

Research for Masters Report

Prerequisite: FES 6786: Research Methods in FES**FES 6940 Practicum in FES 1-3 Credits, Max 3 Credits****Grading Scheme:** S/U

Practicum in FES

Prerequisite: Completion of 18 graduate credit hours in FES**FES 6971 Research for Master's Thesis 1-6 Credits, Max 6 Credits****Grading Scheme:** S/U

Research for Master's Thesis

Prerequisite: FES 6786C**ICM 5905 Special Studies 1-3 Credits, Max 12 Credits****Grading Scheme:** Letter Grade

Special Studies

Prerequisite: Graduate Standing**ICM 6420 Commercial Management and Cost Control 3 Credits****Grading Scheme:** Letter Grade

Budgeting and estimating, and principles of cost analysis for international projects.

Prerequisite: graduate standing.**ICM 6440 Construction Value Management 3 Credits****Grading Scheme:** Letter Grade

Classical value management/value engineering principles; practical applications for designers, contractors, suppliers, and other construction functions. Students conduct full-scale VM/VE studies of recent international projects.

Prerequisite: graduate standing.**ICM 6680 Principles of International Sustainable Construction 3 Credits****Grading Scheme:** Letter Grade

Techniques for creating good indoor and outdoor environments, renewable resources, conservation, low environmental impact methods, life cycle assessments.

Prerequisite: graduate standing.**ICM 6682 Construction Ecology and Metabolism 3 Credits****Grading Scheme:** Letter Grade

Application of ecological theory and developments in industrial ecology to ecological design in built environment.

Prerequisite: graduate standing.**ICM 6684 High-Performance Green Building Delivery Systems 3 Credits****Grading Scheme:** Letter Grade

Overview of emerging delivery systems for high-performance green buildings and the basis on which their sustainability can be evaluated. LEED criteria are discussed in detail.

Prerequisite: graduate standing, BCN 6585 or ICM 6680, or consent of instructor.**ICM 6710 Construction Human Resource Management 3 Credits****Grading Scheme:** Letter Grade

Theories of human behavior and influence and leadership, organization, environment, motivation, and culture.

Prerequisite: graduate standing.**ICM 6716 Construction Productivity and Methods Improvement 3 Credits****Grading Scheme:** Letter Grade

Examines the factors that impact construction productivity, the use of management tools to develop construction productivity improvement programs, methods for performing construction loss calculations, and strategies for developing productivity improvement programs for the construction environment.

ICM 6750 Managing Construction Information Technology 3 Credits**Grading Scheme:** Letter Grade

Applications of computer and information systems in international construction industry. How information technology develops and how it dramatically affects structure, process, and performance of projects.

Prerequisite: graduate standing.**ICM 6761 Advanced Planning, Scheduling, and Logistics 3 Credits****Grading Scheme:** Letter Grade

Overall schedule, including overall durations and phasing and review points, principles of logistics planning, and practicalities of detailed network scheduling.

Prerequisite: graduate standing.**ICM 6762 Construction Risk Management 3 Credits****Grading Scheme:** Letter Grade

Overview of what is meant by risk and uncertainty and influences in international construction industry.

Prerequisite: graduate standing.**ICM 6770 Advanced Project Safety Management 3 Credits****Grading Scheme:** Letter Grade

International, governmental, and construction industry requirements of safety and loss control regulations. Project responsibilities.

Prerequisite: graduate standing.

ICM 6775 Manufactured Construction Processes 3 Credits

Grading Scheme: Letter Grade

Addresses the differences between construction using conventional site built techniques versus construction of buildings and components in factory settings and how this affects construction processes. Compares manufactured construction techniques internationally including Japan, Europe, and Australia.

ICM 6905 Directed Independent Study in International Construction 1-3 Credits, Max 3 Credits

Grading Scheme: Letter Grade

Directed Independent Study in International Construction

ICM 6910 Supervised Research 1-3 Credits, Max 3 Credits

Grading Scheme: S/U

Supervised Research

ICM 6930 Construction Communication and Research 3 Credits

Grading Scheme: Letter Grade

Research proposal development process and statistical, computational, visual, and presentational tools available to researcher.

Prerequisite: graduate standing.

ICM 6934 International Construction Research 1-6 Credits, Max 12 Credits

Grading Scheme: S/U

International Construction Research