

# BUILDING CONSTRUCTION (BLDG)

## **BLDG1015 DRAWINGS & SPECIFICATIONS**

The development and interpretation of civil, architectural, structural, and electrical drawings; freehand sketching of construction details and sections; computer-aided construction drafting. (4 credits) summer

## **BLDG1050 CONTRACTS & CODES**

A comprehensive study of construction contracts including conditions of agreement and modifications. Students analyze the Massachusetts State Building Code as it applies to buildings. **Prerequisites:** *BLDG1015 and BLDG1100 (4 credits)*

## **BLDG1100 CONSTRUCTION METHODS**

A detailed study of current methods and equipment used in timber, masonry and steel construction. Laboratory exercises emphasize plan reading. (4 credits)

## **BLDG1500 COST ESTIMATING**

The fundamentals of construction estimating are covered. Quantity surveys are made for various building components and prices determined for labor and materials, using a current pricing handbook. Standard estimators' forms are prepared. Computer techniques and applications are also examined. (4 credits) summer

## **BLDG1600 HORIZONTAL CONSTRUCTION**

Survey of current methods and equipment used in heavy construction projects including highways, tunnels, bridges, dams, storm drains and sanitary sewers. **Prerequisite:** *BLDG1100 (2 credits)*

## **BLDG1900 BASIC BUILDING SERVICES**

Examines the basic building services, including heating, water, plumbing, drainage, ventilation, air-conditioning, vertical transportation, acoustical control, electrical controls, and associated building code requirements. (4 credits)

## **BLDG2000 STRUCTURAL DESIGN I**

Topics include the principles of mechanics with emphasis on the use of dimensions, weights, forces and angles, centroids, center of gravity, free body diagrams and the laws of equilibrium as applied to trusses. **Prerequisite:** *MATH1065 and PHYS1005*

## **BLDG2200 BUILDING INFORMATION MODELING**

This course examines the use of Autodesk's REVIT software platform as a complete building design and documentation solution, supporting all phases of design, construction documentation, and construction management required for a building project. Students will create massing and conceptual studies that evolve into building models with schedules, details, renderings, walk-throughs, and other topics via studying real-world building designs. **Prerequisite:** *BLDG1015 (4 credits)*

## **BLDG2500 PROJECT ESTIMATING & SCHEDULING**

Students learn and apply the basic principles and current practices employed in estimating project costs including unit costs, overhead and profit. Scheduling tools, such as critical path method and bar charts, are examined as an aid and technique in project planning, budgeting and cost control. **Prerequisites:** *BLDG1015 and BLDG1100 (4 credits)*

## **BLDG2600 TESTING OF MATERIALS**

Testing of Materials focuses on how to properly determine the properties of the most common construction industry materials. These materials include soils, aggregates, asphalt, concrete, steel, wood and masonry. Particular attention is paid to proper laboratory techniques for data acquisition and reporting. (2 credits)

## **BLDG3100 CONSTRUCTION OPERATIONS**

Material handling in heavy construction. The selection and application of heavy construction equipment including equipment productivity and cost **Prerequisite:** *BLDG1100 (4 credits)*

## **BLDG3200 PLANNING & SCHEDULING**

Topic items include project network planning, scheduling, and cost control models. Computer applications to PERT and CPM will be explored and used by the student. (4 credits) spring

## **BLDG3450 CONSTRUCTION PROJECT COST ANALYSIS**

This course will also introduce students to modern techniques for analyzing costs for both vertical and horizontal construction. Costs will be compared to a baseline established for project control. Students will analyze the variety of factors and different methods that affect construction costs. Primary class emphasis is on the cost analysis process available to project managers. **Prerequisite:** *BLDG3200 (4 credits)*

## **BLDG3600 CONSTRUCTION MANAGEMENT THEORY**

Construction project management from conception to completion is covered. The course covers feasibility studies, site selection, planning, programming, design coordination, and contracting procedures of actual construction. Emphasis is placed on contractor operations, project administration, job planning, and subcontract coordination. **Prerequisite:** *third year status; or BLDG1500 and enrollment in the Professional Certificate in Managing Construction Projects (4 credits)*

## **BLDG3700 CONSTRUCTION SAFETY & RISK MANAGEMENT**

Topics include the knowledge and skills required to effectively manage safety compliance and risk associated with construction. **Prerequisite:** *BLDG1100 (3 credits)*

## **BLDG3800 SPECIAL TOPICS IN BUILDING CONSTRUCTION**

These courses present topics that are not covered by existing courses and are likely to change from semester to semester. Refer to the semester schedule for the courses offered that semester. Contact the faculty assigned for more information about the course topic. (1 - 4 credits)

## **BLDG4250 FINANCING CONSTRUCTION PROJECT**

An investigation of construction financing during all phases of project development. Topic items include: permanent loans, construction loans, sources of mortgage funds and venture capital, and tax and interest considerations. Emphasis is placed on the role of the banker as a vital member of the construction management team. **Prerequisite:** *third year status (4 credits)*

## **BLDG5500 SENIOR PROJECT IN BUILDING CONSTRUCTION MANAGEMENT**

Students have the opportunity to explore and present on a construction management topic of their choice. A final oral presentation is required. (4 credits)