Washington University in St. Louis

Master of Construction Management

Email: sever@wustl.edu
Website: https://sever.wustl.edu/degree-programs/construction/index.html

Courses

Visit online course listings to view semester offerings for T64 CNST (https://courses.wustl.edu/CourseInfo.aspx?sch=T&dept=T64&crslvl=5:8).

T64 CNST 523A Construction Cost Estimating
Construction cost estimating explores the application of cost estimating principles and estimating within a project management framework in conjunction with scope definition, quality control, planning and scheduling, risk management and loss prevention techniques, local conditions, information and communication, and working relations with stakeholders. Using a single building project, the course introduces the application of basic quantity surveying and estimating principles using a methodical approach with suggested check lists and techniques for arriving at a reliable cost estimate including direct, indirect, and contingency costs and profits. Student's estimating efforts culminate with a competitive bid day scenario. Prerequisite: T64 573 or permission of instructor.
Credit 3 units.

T64 CNST 550D Heavy Civil Construction Management
This course provides a broad perspective of the means, methods, and procedures associated with managing civil engineering and heavy construction projects. Topics include strategic bidding and estimating, heavy equipment, marine construction heavy civil operations and bridge building. Integration of scheduling, estimating, and construction contracts with a project based approach. Prerequisite: T64 573 or permission of instructor.
Credit 3 units.

T64 CNST 572 Legal Aspects of Construction
A survey of the legal problems of the construction manager, including but not limited to liability in the areas of contracts, agency, torts, insurance, bad judgment and oversight.
Credit 3 units.

T64 CNST 573 Fundamentals in Construction Management
In this course, students will be exposed to the overall construction process from initial concept through startup of the completed facility. The focus is to provide familiarization of the construction and contracting process and potential involvements by construction managers in the planning, design, construction, and post construction phases. Additional topics are introduced to provide a foundation which will prepare students for future construction management coursework. Case studies and industry examples are used throughout the course to authenticate the lectures and assignments.
Credit 3 units.

T64 CNST 574C Construction Project Planning and Scheduling
Project planning and scheduling process utilizing current techniques including critical path analysis for effective and logical scheduling of construction projects. Identification of project activities and their relationships; schedule development, analysis, and updating; relationship of project costs and resources to the schedule; legal implications; effective communication of schedule information; development of procedures to monitor actual field progress; computer application in project scheduling. Prereqs: T64 CNST 573 or permission of instructor.
Credit 3 units.

T64 CNST 579 Advanced Construction Management
A comprehensive study of the operations encountered in the management of a construction firm. Topics include estimating, scheduling, forms of contracts, risk analysis and management, extra work orders, claims and disputes, construction safety, and contract close-out. Prerequisite: T64 573, T64 574, T64 523A, or permission of the program director.
Credit 3 units.

T64 CNST 580B Digital Construction Technology
This course focuses on BIM's philosophy of integration between designers, construction professional, and owners, in order to overcome both technological and implementation changes using Virtual Design and Construction (VDC) and Integrated Project Delivery (IDP). VDC is a methodology that relies on a multidisciplinary collaboration of the digital simulation of design & construction. IPD, on the other hand, integrates people, systems, business structures and practices into a process to optimize efficiency and productivity. In this course, students will learn about BIM's application by exploring 3D, 4D aspects of BIM including geometry, spatial relationships, quantity take off, estimation and scheduling. Along with that, students also will learn about Virtual Design and Construction (VDC) and Integrated Project Delivery (IPD) system that are integral component of a successful BIM projects. Prerequisite: T64 573 or permission of instructor.
Credit 3 units.

T64 CNST 581A MCM - M.Arch Capstone Project Phase 1
This capstone course allows MCM/MArch joint-degree program students to apply constructability principles to their MArch degree projects (A46 ARCH 616) and to successfully demonstrate how they have applied those principles. Constructability principles include analysis of the construction methods and procedures, project cost, time, value, quality, and safety. Phase 1 is to be taken simultaneously with A46 ARCH 616 Degree Project. Phase 1 students will develop a constructability review, analysis, and plan for their individual project. Prerequisites: Admission to the MCM/MArch joint-degree program, T64 573, T64 523A, and T64 574C.
Credit 1 unit.

T64 CNST 581B MCM - M.Arch Capstone Project Phase 2
This capstone course allows MCM/MArch joint-degree program students to apply constructability principles to their MArch degree projects (A46 ARCH 616) and to successfully demonstrate how they have applied those principles. Constructability principles include analysis of the construction methods and procedures, project cost, time, value, quality, and safety. Phase 2 is to be taken after completing A46 ARCH 616 Degree Project. Phase 2 students will execute the constructability plan developed in Phase 1 and prepare and present the deliverables. Pre/Corequisite: T64 581A.
Credit 2 units.