

# CONSTRUCTION MANAGEMENT (CM)

## CM 511 Construction Delivery Methods

4 Class Hours, 4 Quarter Credit Hours

Prerequisites: MGM 533 (may be taken concurrently)

This course researches the multiple types of contract delivery methods used in the construction industry and the project administration and legal issues associated with each. Topics will include contract type, party responsibility, project documentation, relevant contract law, and dispute resolution.

## CM 512 Construction and the Environment

4 Class Hours, 4 Quarter Credit Hours

Prerequisites: MGM 533 (may be taken concurrently)

This course will focus on the environmental impact of construction projects. The course will examine best practices to ensure sustainable design and construction of building facilities, site development and infrastructure work. Topics covered will include Environmental Impact Assessment (EIA), Low Impact Design (LID), Leadership in Energy and Environmental Design (LEED), and the Institute for Sustainable Infrastructure (ISI) guidelines among others. Characteristics of successful sustainable projects will be examined through case studies and engagement with industry professionals.

## CM 513 Relationship & Dispute Management

4 Class Hours, 4 Quarter Credit Hours

Prerequisites: MGM 533 (may be taken concurrently)

This course will focus on building and maintaining effective relationships across the various diverse stakeholders in the construction industry – such owners/executives, employees, general contractors, construction managers, specialty trades, suppliers, and customers. Students also learn conflict and effective conflict management, and the principled negotiation approach through sample application. Students will understand and practice dispute resolution and management. Students will focus on the impact of diversity on relationship and conflict management, negotiation, and dispute resolution.

## CM 520 Effective Projects and Teams

4 Class Hours, 4 Quarter Credit Hours

Prerequisites: MGM 533 (may be taken concurrently)

In this course, students will learn the unique aspects of teams in the construction industry, the characteristics of highly effective teams, and how to develop and manage such teams. Students will practice teamwork and leading teams through practical application exercises. Students will also explore the impact of labor demographics, job/contract, and the construction industry culture and practices on effective teamwork and performance. Students will understand the connection between teams, project management, and effective performance.

## CM 521 Risk Management

4 Class Hours, 4 Quarter Credit Hours

Prerequisites: MGM 533 (may be taken concurrently)

In this course, students will study the principles and techniques used in risk analysis and mitigation in the construction industry. Topics will include types and sources of risk, risk analysis tools, risk hierarchy, and strategies to minimize risk impact on a construction project. Through case studies, students will analyze the relationship between risk and project success.

## CM 531 Construction Health & Safety

4 Class Hours, 4 Quarter Credit Hours

Prerequisites: MGM 533 (may be taken concurrently)

This course will focus on OSHA regulations pertinent to construction field operations. Attention will be directed to the best practices, means, methods and processes to develop and implement safety planning policies and measurement of those policies. Emphasis will be placed on OSHA Standards for the construction industry with special attention to those areas which are of greatest concern to OSHA in field operations, Personal Protection, Fall Protection, Struck by Objects, Electrocutions, Confined Space Entry, and Caught in Between.

## CM 540 CM Master's Project

5 Class Hours, 5 Quarter Credit Hours

Prerequisites: MGM 504 and MGM 533 and CM 511 and CM 512 and CM 513 and CM 520 and CM 521 and CM 531 and CM 541 and (CM 542 or CM 543)

Through the lens of contemporary leadership theory, application and best practices in the construction industry, students will explore and understand their leadership style, and related strengths and challenges. Students will analyze core values, common values and ethical dilemmas in the construction workplace, and how to effectively respond to such dilemmas. Case Studies involving actual construction industry leaders will be used to explore the current challenges and opportunities in the field, such as safety and quality, sustainability, cost management, and labor issues. A final masters project will entail research and correlation of managerial/leadership issues in the construction field to the MS Construction Management program outcomes.

## CM 541 Lean Construction Principles & Practices

4 Class Hours, 4 Quarter Credit Hours

Prerequisites: MGM 533 (may be taken concurrently)

In this course, students will examine the principles and practices of the philosophy of lean manufacturing as applied to construction. Topics will include case studies, customer value definition, process analysis, waste reduction, value added activities, the use of "pull scheduling," and the need for continuous improvement.

## CM 542 Building Information Modeling

4 Class Hours, 4 Quarter Credit Hours

Prerequisites: MGM 533 (may be taken concurrently)

This course provides students with an industry view of the application of Building Information Modeling (BIM) to a construction project. Students will study basic computerized modeling technology and analyze its relationship to the development of building information modeling data.

## CM 543 Infrastructure Planning & Development

4 Class Hours, 4 Quarter Credit Hours

Prerequisites: MGM 533 (may be taken concurrently)

In this course, students will examine public sector infrastructure planning, design and implementation at the local, regional and state level; the policies, procedures and organizations behind the planning and development of infrastructure projects; the funding of public sector infrastructure projects; and the methods for the award of contracts that ultimately lead to active construction projects. Through selected examples, students will investigate the relationship between physical infrastructure systems including roads, public transportation, community facilities, public open space, surface drainage, and electric, gas, water, and waste disposal.