CM 430 Collaborative Process (3)
A comprehensive set of tools and practices that allow for high performance, interdisciplinary collaborative teams to focus on extraordinary outcomes at each step of project development, including planning, design, bidding, permitting, construction and management phases. 3 activities. Prerequisite: Minimum junior standing or consent of instructor. Crosslisted as CM/EDSA 430.

CM 432 Design-Build Project Management (3)
Management issues applicable to the design and construction integration method of project delivery. Project sponsor/project advocate techniques, monitoring the evolving design, detecting and controlling change, early warning systems, cost trending, schedule impacts, cost impacts, systems integration, contract/scope modifications, procurement, contingencies, quality, and overall process control. 3 activities. Prerequisite: Minimum junior standing.

CM 433 Integrated Project Delivery (2)
Investigation and analysis of special advanced topics in Integrated Project Delivery including Design-Build, CM-at-Risk, Alliance Contracting and other alternative delivery models and application across a wide range of project types. Topics include source selection, acquisitions, contracting, performance criteria, design management, and others. 2 activities. Prerequisite: CM 311 or consent of instructor.

CM 443 Management of the Construction Firm (4)
Applications of strategic management techniques and business strategy for managing and long-range planning of the construction firm, including accounting practices. 4 activities. Prerequisite: CM 413.

CM 452 Project Controls (3)
Planning, organization, scheduling, and control of construction projects including cost control and resource control. Use of Critical Path Method (CPM) in planning and scheduling computer applications for CPM. 3 laboratories. Prerequisite: CM 364.

CM 454 Construction Estimating (3)
Methods, procedures and computer applications associated with estimating the costs of construction projects. Additional topics of study to include analysis of the bidding process and conceptual estimating. 3 laboratories. Prerequisite: CM 364.

CM 461, 462 Senior Project I, II (2) (1-2)
Selection and completion of a comprehensive project under faculty supervision. Problems to involve the student's technical and creative skills. Student proposal must be submitted and approved by project advisor and department head prior to registration for course. Construction and team projects encouraged. Prerequisite: Consent of project advisor and department head. See department for additional guidelines and requirements.

CM 463 Senior Project: Professional Practice for Constructors (3)
Practical application of construction management theory and practice solving problems related to the built environment. 3 laboratories. Prerequisite: CM 413; corequisite: CM 443.

CM 470 Selected Advanced Topics (1–4)
Directed group study of selected topics for advanced students. Open to undergraduate and graduate students. The Schedule of Classes will list title selected. Total credit limited to 8 units. 1 to 4 lectures. Prerequisite: Consent of instructor.

CM 471 Selected Advanced Laboratory (1–4)
Directed group laboratory study of selected topics for advanced students. Open to undergraduate and graduate students. The Schedule of Classes will list title selected. Total credit limited to 8 units. 1–4 laboratories. Prerequisite: Consent of instructor.

CM 475 Real Property Development Principles (4)
Development process and its major actors: investors, developers, government agencies, environmental and local stakeholders; their development roles, objectives, approaches. Basics of urban markets and economics, financing, regulation, public planning; value added, contractual, environmental and community context factors. 4 lectures. Prerequisite: Minimum junior standing.

CM 485 Cooperative Education Experience (3-6) (CR/NC)
Full-time work experience in an area directly related to the construction industry for 3 months. Positions are paid and usually require relocation and registration in course for one quarter. Registration in course is required at start of work experience. Formal report and evaluation by work supervisor required. Credit/No Credit grading only. May be repeated for credit. Major credit limited to 6 units; total credit limited to 12 units. See department for additional requirements. Prerequisite: Consent of instructor.

CM 495 Cooperative Education Experience (12) (CR/NC)
Full-time work experience in an area directly related to the construction industry for 6 months. Positions are paid and usually require relocation for two consecutive quarters. Registration in course is required at start of work experience. Formal report and evaluation by work supervisor required. Credit/No Credit grading only. May be repeated for credit. Major credit limited to 6 units; total credit limited to 24 units. See department for additional requirements. Prerequisite: Consent of instructor.

CM 531 Construction Cost and Material Control (3)
Advanced theory and practice of cost and material control for construction projects. Emphasis on computer applications. 2 lectures, 1 activity. Prerequisite: Graduate standing or consent of instructor.

CM 533 Case Histories in Contract Administration (3)
Common points of disputes between design professional, owner, and contractor. Methods of avoidance and dispute resolution. 3 activities. Prerequisite: Graduate standing or consent of instructor.

CM 542 Advanced Construction Estimating (3)
Advanced theory and practice of cost estimating techniques. Includes standard, conceptual and parameter estimating; bidding strategies, value engineering concepts, and risk analysis. Emphasis on computer applications. 2 lectures, 1 activity. Prerequisite: Graduate standing or consent of instructor.

CM 552 Construction Project Scheduling (3)
Basic and advanced network scheduling techniques as applied to architectural building projects. Emphasis on computer applications. 2 lectures, 1 activity. Prerequisite: Graduate standing or consent of instructor.

CM 570 Selected Advanced Topics in Construction Management (4)
Directed study of selected topics in Construction Management. The Schedule of Classes will list title selected. Total credit limited to 12 units. 4 seminars. Prerequisite: Graduate standing or consent of instructor.

CM 571 Selected Advanced Laboratory (1–4)
Directed group laboratory study of selected topics for advanced students. Open to undergraduate and graduate students. The Schedule of Classes will list title selected. Total credit limited to 8 units. 1–4 laboratories. Prerequisite: Graduate standing or consent of instructor.