Department of Construction Management

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Professor Mostafa Khattab, Department Head

Undergraduate Majors

• Major in Construction Management

Minors

• Minor in Construction Management

Graduate Programs in Construction Management

The Department of Construction Management offers graduate study leading to the Master of Science degree. The focus of the department is on professional programs that successfully combine theory and application with a strong emphasis in applied management. The master's program is an advanced curriculum designed to allow students to tailor a portion of the specialization requirements to meet individual interests and goals.

Each program can be individually tailored to meet the needs and interests of the student.

Students interested in graduate work should refer to the Graduate and Professional Bulletin and the Department of Construction Management (http://cm.chhs.colostate.edu).

Master Programs

• Master of Science in Construction Management, Plan A
• Master of Science in Construction Management, Plan B

Courses

Construction Management (CON)

CON 101 Introduction to Construction Management Credits: 3 (3-0-0)
Course Description: Identify and understand relationships among participants in the construction process and its history.
Prerequisite: None.
Terms Offered: Fall, Spring.
Grade Mode: Traditional.
Special Course Fee: No.

CON 131 Graphic Communications for Construction Credits: 2 (0-4-0)
Course Description: Reading technical drawings, 2D/3D visualization, manual drafting techniques, introduction to design software applications.
Prerequisite: None.
Terms Offered: Fall, Spring.
Grade Mode: Traditional.
Special Course Fee: No.

CON 151 Construction Materials and Methods Credits: 3 (3-0-0)
Course Description: Materials and methods utilized in the design and construction of buildings.
Prerequisite: None.
Terms Offered: Fall, Spring.
Grade Mode: Traditional.
Special Course Fee: No.

CON 251 Materials Testing and Processing Credits: 2 (1-2-0)
Course Description: Testing of construction materials for standards and quality. Conduct common quality tests and document the results.
Prerequisite: CON 151.
Registration Information: Must register for lecture and laboratory.
Terms Offered: Fall, Spring.
Grade Mode: Traditional.
Special Course Fee: No.

CON 261 Construction Surveying Credits: 3 (2-3-0)
Course Description: Surveying fundamentals to field of construction, building layout, measurement procedures, vertical controls, line and grade, surveying instrument operation.
Prerequisites: (CON 131 or INTD 166) and (MATH 125 or MATH 160).
Registration Information: Must register for lecture and laboratory.
Terms Offered: Fall, Spring, Summer.
Grade Mode: Traditional.
Special Course Fee: No.

CON 265 Construction Estimating I Credits: 3 (2-2-0)
Course Description: Integration of construction materials and methods into construction systems that will be incorporated in projects.
Prerequisites: CON 131 and CON 151.
Registration Information: Must register for lecture and laboratory.
Terms Offered: Fall, Spring.
Grade Mode: Traditional.
Special Course Fee: No.

CON 266 Construction Estimating II Credits: 3 (2-1-0)
Course Description: Integration of construction materials and methods into construction systems that will be incorporated in projects.
Prerequisites: CON 265.
Registration Information: Must register for lecture and laboratory.
Terms Offered: Fall, Spring.
Grade Mode: Traditional.
Special Course Fee: No.

CON 291 Senior Project Credits: 1-3
Course Description: Comprehensive project illustrating practical application of construction management techniques.
Prerequisite: CON 151.
Terms Offered: Fall, Spring.
Grade Mode: Traditional.
Special Course Fee: Yes.

CON 292 Internship Credits: 0-6
Course Description: Internship in the construction industry.
Prerequisite: CON 151.
Terms Offered: Fall, Spring.
Grade Mode: Traditional.
Special Course Fee: Yes.
CON 267 Construction Management Pre-Internship Credit: 1 (0-0-1)
Course Description: Skills and concepts related to successful
teaching interns within the construction management industry.
Prerequisite: None.
Registration Information: Construction management majors only.
Terms Offered: Fall, Spring, Summer.
Grade Mode: Traditional.
Special Course Fee: No.

CON 270 Introduction to Road Construction Credits: 3 (3-0-0)
Course Description: Steps necessary to construct a paved roadway
from conception, land acquisition and finance through paving
operations and trafficking.
Prerequisite: None.
Term Offered: Fall.
Grade Mode: Traditional.
Special Course Fee: No.

CON 317 Safety Management Credits: 2 (2-0-0)
Course Description: Safety management in construction, corporate,
and institutional environments.
Prerequisite: None.
Registration Information: Sections may be offered: Online.
Terms Offered: Fall, Spring.
Grade Mode: Traditional.
Special Course Fee: No.

CON 351 Construction Field Management Credits: 2 (1-2-0)
Course Description: Materials and methods used in construction,
administrative and organizational planning used to complete a project.
Prerequisites: CON 251, may be taken concurrently and CON 317,
may be taken concurrently.
Registration Information: Must register for lecture and laboratory.
Terms Offered: Fall, Spring.
Grade Mode: Traditional.
Special Course Fee: No.

CON 352 Metal Fabrication for Construction Credits: 2 (1-2-0)
Course Description: Shaping, cutting, and joining of structural and
non-structural metal. Emphasis on jobsite safety, economics, and
efficiency.
Prerequisite: CON 251.
Registration Information: Must register for lecture and laboratory.
Terms Offered: Fall, Spring.
Grade Mode: Traditional.
Special Course Fee: No.

CON 359 Structures I Credits: 4 (4-0-0)
Course Description: Behavior of structural components and systems,
overview of structural engineering analysis/design process.
Prerequisite: MATH 125.
Registration Information: Junior or senior standing.
Terms Offered: Fall, Spring.
Grade Mode: Traditional.
Special Course Fee: No.

CON 360 Electrical and Control Systems Credits: 3 (2-2-0)
Course Description: Electrical and control systems and their
application in the construction industry.
Prerequisite: CON 265.
Registration Information: Must register for lecture and laboratory.
Terms Offered: Fall, Spring.
Grade Mode: Traditional.
Special Course Fee: No.

CON 365 Construction Estimating II Credits: 3 (2-2-0)
Course Description: Industry-recognized methods for work
item analysis, quantity surveying, resource estimating, and bid
development using work breakdown structures.
Prerequisite: CON 265.
Registration Information: Must register for lecture and laboratory.
Terms Offered: Fall, Spring.
Grade Mode: Traditional.
Special Course Fee: No.

CON 366 Construction Equipment and Methods Credits: 3 (2-2-0)
Course Description: Equipment/methods in heavy and highway
construction; equipment selection, productivity, and costs.
Registration Information: Construction management majors and
minors only.
Terms Offered: Fall, Spring.
Grade Mode: Traditional.
Special Course Fee: No.

CON 367 Construction Contracts/Project Administration Credits: 3 (3-0-0)
Course Description: Utilization of field engineering systems and
procedures to effectively meet project objectives.
Prerequisites: CON 265 and CON 351, may be taken concurrently.
Registration Information: Construction management majors and
minors only.
Terms Offered: Fall, Spring.
Grade Mode: Traditional.
Special Course Fee: No.

CON 370 Asphalt Pavement Materials and Construction Credits: 3 (2-2-0)
Course Description: Constituents of asphalt pavements; manufacture
of asphalt cement, emulsions, and cutbacks; material properties and
behavior.
Prerequisite: None.
Registration Information: Must register for lecture and laboratory.
Terms Offered: Fall, Spring.
Grade Mode: Traditional.
Special Course Fee: No.

CON 371 Mechanical and Plumbing Systems Credits: 3 (3-0-0)
Course Description: Heating, ventilation, air conditioning, plumbing,
and fire suppression with emphasis on design, operation, and
interaction.
Prerequisite: CON 360, may be taken concurrently or INTD 276, may
be taken concurrently.
Terms Offered: Fall, Spring.
Grade Mode: Traditional.
Special Course Fee: No.

CON 384 Supervised College Teaching Credits: Var[1-5]
Course Description:
Prerequisite: None.
Registration Information: A maximum of 10 combined credits for all
384 and 484 courses are counted towards graduation requirements.
Terms Offered: Fall, Spring, Summer.
Grade Mode: Instructor Option.
Special Course Fee: No.
CON 450  Travel Abroad-Sustainable Building Credits: 3 (3-0-0)
Also Offered As: INTD 450.
Course Description: Major components of sustainable design and construction, energy, healthy buildings, natural resources and other environmental issues.
Prerequisite: None.
Registration Information: Credit not allowed for both CON 450 and INTD 450.
Term Offered: Summer.
Grade Mode: Traditional.
Special Course Fee: No.

CON 459  Structures II Credits: 4 (4-0-0)
Course Description: Design of formwork, falsework, and shoring.
Prerequisite: CON 359.
Terms Offered: Fall, Spring.
Grade Mode: Traditional.
Special Course Fee: No.

CON 461  Construction Project Scheduling and Cost Control Credits: 3 (2-2-0)
Course Description: Strategies and techniques for efficient scheduling of project activities and control of project costs; emphasis of Critical Path Method.
Prerequisite: CON 365, may be taken concurrently.
Registration Information: Construction management majors and minors only. Must register for lecture and laboratory. Sections may be offered: Online.
Terms Offered: Fall, Spring.
Grade Mode: Traditional.
Special Course Fee: No.

CON 462  Financial Management for Construction Credits: 3 (3-0-0)
Course Description: Financial statements, financial ratios, applications of engineering economy, cash flow analysis, construction financing, and cost information systems.
Prerequisites: (ACT 205 or ACT 210, may be taken concurrently) and (MGT 305 or MGT 320).
Terms Offered: Fall, Spring.
Grade Mode: Traditional.
Special Course Fee: No.

CON 464  Construction Leadership Credits: 3 (1-0-2)
Course Description: Leading projects and people in a construction business and application of skills in a construction-based community service learning project.
Prerequisites: CON 365 and CON 367, may be taken concurrently.
Registration Information: Must register for lecture and recitation. Written consent of instructor.
Term Offered: Spring.
Grade Mode: Traditional.
Special Course Fee: No.

CON 465  Construction Management Professional Practice Credits: 3 (1-0-2)
Course Description: Professional practice using an understanding of the contractual and working relationships among all participants in the design/construction process.
Prerequisites: (CON 461, may be taken concurrently) and (CON 487A or CON 487E or CON 487B).
Registration Information: Construction management majors only. Must register for lecture and recitation.
Terms Offered: Fall, Spring.
Grade Mode: Traditional.
Special Course Fee: No.

CON 469  Soils Engineering for Construction Managers Credits: 3 (2-0-1)
Course Description: Soil mechanics, foundation engineering, and foundation construction.
Prerequisite: CON 359.
Registration Information: Must register for lecture and recitation.
Terms Offered: Fall, Spring.
Grade Mode: Traditional.
Special Course Fee: No.

CON 471  Project Management for Mechanical Systems Credits: 3 (3-0-0)
Course Description: Fundamental principles of mechanical systems. Presentation and practice of management principles relevant to mechanical projects.
Prerequisites: CON 371 and CON 365, may be taken concurrently.
Term Offered: Fall.
Grade Mode: Traditional.
Special Course Fee: No.

CON 476  Sustainable Practice-Design and Construction Credits: 3 (3-0-0)
Course Description: Major components of sustainable design/construction: energy, healthy buildings, cultural, natural resources, use, other environment/economic issues.
Prerequisite: None.
Term Offered: Fall.
Grade Mode: Traditional.
Special Course Fee: No.

CON 477  Residential Aging-in-Place and Green Building Credits: 3 (3-0-0)
Course Description: Aging-in-place and green building aspects of the residential construction market.
Prerequisite: CON 265.
Restriction:
Term Offered: Spring.
Grade Mode: Traditional.
Special Course Fee: No.

CON 487A  Internship: Construction Management I Credits: 6 (0-0-18)
Course Description:
Prerequisites: CON 267 and CON 367.
Registration Information: OSHA 10-hour construction safety card.
Terms Offered: Fall, Spring, Summer.
Grade Mode: Traditional.
Special Course Fee: No.
CON 487B Internship: Construction Management II Credits: 3 (0-0-9)
Course Description: CON 267 and CON 367.
Prerequisites: OSHA 10-hour construction safety card; 500 hours documented work experience.
Terms Offered: Fall, Spring, Summer.
Grade Mode: Traditional.
Special Course Fee: No.

CON 495 Independent Study-Construction Management Credits: Var[1-18]
Course Description: None.
Prerequisite: None.
Terms Offered: Fall, Spring, Summer.
Grade Mode: Instructor Option.
Special Course Fee: No.

CON 496 Group Study-Construction Management Credits: Var[1-9]
Course Description: None.
Prerequisite: None.
Terms Offered: Maximum of 9 credits allowed in course.
Grade Mode: Instructor Option.
Special Course Fee: No.

CON 500 Models of Disciplined Inquiry Credits: 3 (3-0-0)
Course Description: Models and methods of disciplined inquiry used in diverse organizations; applying disciplined inquiry methods to solve problems.
Prerequisite: None.
Registration Information: Admission to the construction management master’s program.
Term Offered: Fall.
Grade Mode: Traditional.
Special Course Fee: No.

CON 560 Applied Project Management Credits: 3 (3-0-0)
Course Description: Project development, planning, and control relevant to construction, manufacturing, and technology education professionals.
Prerequisite: None.
Registration Information: Admission to the construction management master’s program.
Term Offered: Fall.
Grade Mode: Traditional.
Special Course Fee: No.

CON 561 Applied Productivity Improvement Credits: 3 (3-0-0)
Course Description: Existing and emerging tools for productivity enhancement in project and production environment.
Prerequisite: None.
Registration Information: Admission to the construction management master’s program.
Term Offered: Spring.
Grade Mode: Traditional.
Special Course Fee: No.

CON 562 Issues and Trends in Construction Management Credits: 3 (3-0-0)
Course Description: Current issues and trends related to management of technology in fields associated with manufacturing and construction industries.
Prerequisite: None.
Registration Information: Admission to the construction management master’s program.
Term Offered: Fall.
Grade Mode: Traditional.
Special Course Fee: No.

CON 565 Legal Aspects of Construction Process Credits: 3 (3-0-0)
Course Description: Common points of dispute; methods of avoiding disputes among owner, architect, engineer, and contractor.
Prerequisite: None.
Registration Information: Admission to the construction management master’s program.
Term Offered: Spring.
Grade Mode: Traditional.
Special Course Fee: No.

CON 566 Advanced Construction Estimating Credits: 3 (3-0-0)
Course Description: Advanced estimating procedures dealing with special application and techniques in construction.
Prerequisite: None.
Registration Information: Admission to the construction management master’s program.
Term Offered: Fall.
Grade Mode: Traditional.
Special Course Fee: No.

CON 567 Preservation and Rehabilitation of Buildings Credits: 3 (3-0-0)
Course Description: Theory and applications of preservation technology used in the management and rehabilitation of historic and archaic buildings.
Prerequisite: None.
Registration Information: Admission to the construction management master’s program.
Term Offered: Fall.
Grade Mode: Traditional.
Special Course Fee: No.

CON 568 Construction Industry Institute Practices Credits: 3 (3-0-0)
Course Description: Senior executives from the Construction Industry Institute (CII) present best practices developed by CII over the last 25 years.
Prerequisite: CON 367.
Term Offered: Fall.
Grade Mode: Traditional.
Special Course Fee: No.

CON 569 Regulatory Impact on Construction Credits: 3 (3-0-0)
Course Description: Role government plays in the design and construction of the built environment.
Prerequisite: None.
Registration Information: Admission to the construction management master’s program.
Term Offered: Spring.
Grade Mode: Traditional.
Special Course Fee: No.
CON 571 Facility Planning and Management  Credits: 3 (3-0-0)
Course Description: Planning, organizing and managing large educational and/or commercial facilities.
Prerequisite: None.
Registration Information: Admission to the construction management master’s program.
Term Offered: Spring.
Grade Mode: Traditional.
Special Course Fee: No.

CON 575 Managerial Decision Making for Constructors  Credits: 3 (3-0-0)
Course Description: Construction and real estate development applications of multi-disciplinary managerial analysis and decision-making techniques.
Prerequisite: None.
Registration Information: Admission to the construction management master’s program.
Term Offered: Fall.
Grade Mode: Traditional.
Special Course Fee: No.

CON 576 Sustainable Technology in Built Environments  Credits: 3 (2-0-1)
Course Description: Major components of creating environmentally sustainable built environments.
Prerequisite: CON 476 or CON 450 or INTD 450.
Registration Information: Must register for lecture and recitation.
Term Offered: Spring.
Grade Mode: Traditional.
Special Course Fee: No.

CON 577 Leadership of Sustainable Community Projects  Credits: 3 (2-0-1)
Course Description: Learn and apply principles of sustainable construction management through leading and building service-learning projects.
Prerequisite: CON 476 or CON 450 or INTD 450.
Registration Information: Required background check.
Term Offered: Spring.
Grade Mode: Traditional.
Special Course Fee: No.

CON 590 Workshop  Credits: Var[1-18]
Course Description:
Prerequisite: None.
Terms Offered: Fall, Spring, Summer.
Grade Mode: Instructor Option.
Special Course Fee: No.

CON 592 Seminar  Credits: Var[1-18]
Course Description:
Prerequisite: None.
Terms Offered: Fall, Spring, Summer.
Grade Mode: Instructor Option.
Special Course Fee: No.

CON 598 Independent Study  Credits: Var[1-18]
Course Description:
Prerequisite: None.
Restriction: Must be a: Graduate, Professional.
Terms Offered: Fall, Spring, Summer.
Grade Mode: Instructor Option.
Special Course Fee: No.

CON 684 Supervised College Teaching  Credits: Var[1-18]
Course Description:
Prerequisite: None.
Restriction: Must be a: Graduate, Professional.
Terms Offered: Fall, Spring, Summer.
Grade Mode: Instructor Option.
Special Course Fee: No.

CON 687 Internship  Credits: Var[1-6]
Course Description:
Prerequisite: None.
Restriction: Must be a: Graduate, Professional.
Registration Information: Maximum of 6 credits allowed in course.
Terms Offered: Fall, Spring, Summer.
Grade Mode: Instructor Option.
Special Course Fee: No.

CON 695 Group Study  Credits: Var[1-18]
Course Description:
Prerequisite: None.
Restriction: Must be a: Graduate, Professional.
Terms Offered: Fall, Spring, Summer.
Grade Mode: Instructor Option.
Special Course Fee: No.

CON 696 Research  Credits: Var[1-18]
Course Description:
Prerequisite: None.
Restriction: Must be a: Graduate, Professional.
Terms Offered: Fall, Spring, Summer.
Grade Mode: Instructor Option.
Special Course Fee: No.

CON 699 Thesis  Credits: Var[1-6]
Course Description:
Prerequisite: None.
Restriction: Must be a: Graduate, Professional.
Terms Offered: Fall, Spring, Summer.
Grade Mode: Instructor Option.
Special Course Fee: No.