

Construction Engineering and Management: Master of Engineering (MEng) or Master of Science (MS)

COURSES [typically offered fall (f), spring (sp), summer (s)]

➤ CEM Required

- Construction Materials and Methods - f
- Construction Planning and Control - sp
- Construction Cost Estimating - sp
- Master's Report or Academic Internship with accompanying Report (3 units, requires advisor approval) or
- Master's Thesis (6 units, requires advisor approval) only for MS degrees

➤ CEM Electives (3 required)

- Project Management Systems – f
- Advanced Project Management - sp
- Advanced Construction Engineering - f
- Engineering Contracts - s
- Sustainable Construction - sp
- Building Information Modeling (BIM) - f
- Construction Safety – alternating semesters
- Construction Field Management – not currently offered
- Leadership and Ethics in Construction – not currently offered
- Site-Layout – not currently offered
- Construction, Business and Innovation (Offered in conjunction with inWorks) – alternative semesters
- Integrated Construction Leadership - sp

➤ General Electives (3 required)

Many possible electives are available in three different colleges – College of Engineering, College of Architecture and Planning and the Business School. One or two CEM Electives can be potentially be used for General Electives by petition (see Dr Rens or your advisor). Course selection should be based on planned career path, masters report focus, eligibility and availability of the courses. The easiest way to identify general electives is to look at the courses available on the future registrars schedule and then work with your adviser to select optimal courses for you.

Eligibility – many of the courses that can be used for electives have prerequisites. Some of the Architecture courses require a BA in Arch and many of the engineering courses require specific undergraduate courses. For example, someone with a BS in CE may want to take some of the graduate level structural design or hydraulic design courses.

Availability of courses – most courses are at best offered periodically, some are rarely taught. As an overview the following lists the Colleges and possible areas of study. The next section lists some possible courses by College. Other available courses can be selected. Talk to your advisor.

College of Architecture and Planning

Areas of study:

- o Sustainable Architecture
- o Planning
- o Landscaping & Geo-spatial Design

Business School

Areas of study:

- o Business Management
- o Entrepreneurship
- o Global Energy
- o International Business

College of Engineering, Design and Computing

Areas of study:

- o Civil
- o Systems
- o Mechanical
- o Electrical

General Electives listed by College

College of Architecture and Planning

ARCH 6412 - Construction Documents
ARCH 6471 - Managing Quality & Risks
ARCH 6472 - Architecture in a Single Source Project Delivery
ARCH 5330 - Sustainable Systems I
ARCH 5340 - Sustainable Systems II
ARCH 6310 - Greenbuilding Tech
URBN 6644 - Sustainable Urbanism
URPL 6460 - Green Real Estate Development
URPL 6515 - Sustainable Planning & Design
URPL 6200 - Land Development Regulations
URPL 6249 - Project Management
ARCH 5420 - BIM: Principles and Practice
ARCH 64902- BIM Technologies and the Flow of Information (Offered at Denver South)
LDAR 6712 – Green Roofs/Living Systems
LDAR 5532 – Landform Manipulation

Business School

MGMT 6821 - Managing for Sustainability
MGMT 6808 - Leadership Development
MGMT 6360 - Designing Effective Organizations
BANA 6440 - Quality and Process Improvement
BANA 6720 - Simulation Modeling
RISK 6129 - Practical Enterprise Risk Management
ENTP 6808 - Practicum in Sustainable Business Research
BUSN 6550- Analyzing and Interpreting Accounting Information (Offered at Denver South)
BUSN 6520 - Leading Individuals and Teams (Offered at Denver South)
BANA 6650/URPL 6249 - Project Management (Offered at Denver South)

Entrepreneurship

ENTP 6642 - Exploring Social Entrepreneurship
ENTP 6807 - Small Business Marketing and Personal Branding
ENTP 6824 - Entrepreneurial Financial Management
ENTP 6826 - International Entrepreneurship
ENTP 6834 - Entrepreneurial Marketing
ENTP 6842 - New Concept Development
ENTP 6620 - New Venture Operations and Project Management
ENTP 6644 - Social Entrepreneurship in the Developing World

ENTP 6822 - Legal and Ethical Issues of Entrepreneurship
ENTP 6838 - Real Estate for the Entrepreneur
ENTP 6848 - Leadership in New Ventures
ENTP 6020 - The Business Plan

Global Energy Management

GEMM 6000 - 21st Century Global Energy Issues and Realities
GEMM 6100 - Global Energy Economics
GEMM 6200 - Environmental, Regulatory, Legal & Political Environment in the Energy Industry
GEMM 6210 - Energy and the Law: Property and Contracts
GEMM 6220 - Interacting With Foreign Governments and State Enterprises
GEMM 6400 - Leadership and Decision Making in the Global Energy Environment
GEMM 6410 - People Management in the Global Energy Environment
GEMM 6430 - Organizational Behavior in the Energy Industry
GEMM 6450 - Strategic Management of the Energy Industry
GEMM 6460 - Integrated Information Management for Energy Firms

International Business

INTB 6000 - Introduction to International Business
INTB 6020 - Cross-Cultural Management
INTB 6022 - International Business Negotiations
INTB 6040 - Managing Global Talent
INTB 6060 - The Legal Aspects of International Business
INTB 6200 - International Business Policy
INTB 6370 - International Accounting
INTB 6372 - International Financial Management
INTB 6411 - International Corporate Governance
INTB 6460 - Emerging Market Finance

College of Engineering, Design and Computing

Civil Engineering

CVEN 5460 - Introduction to Sustainable Urban Infrastructure
CVEN 5461 - Defining and Measuring Sustainability
CVEN 5481 - Sustainable Water Systems Policy and Planning
CVEN 5462 - Theories of Sustainable Infrastructure Management

CVEN 5405 - Systems Analysis for Environment and Sustainability
CVEN 5457 - Administration of Public Works
CVEN 5565 - Advanced Timber Structure Design
CVEN 5575 - Advanced Topics in Structural Steel Design
CVEN 5662 - Transportation System Safety
CVEN 5682 - Pavement Design
CVEN 5708 - Advanced Soils Engineering
CVEN 5718 - Engineering Properties of Soils
CVEN 5719 - Design and Construction of Geosynthetic-Reinforced Soil Structures
CVEN 5738 - Foundation Engineering
CVEN 5381 - Introduction to Geographic Information Systems
CVEN 5382 - GIS Spatial Database Development
CVEN 5388 - Site Engineering
CVEN 5456 - Engineering Practice

Systems Engineering

ENGR 5301 - Systems Engineering: Principles and Practice
ENGR 5302 - Systems Engineering: Planning and Management
ENGR 5800 - Long Range Infrastructure Planning and Design: Colorado 2050

Electrical Engineering

ELEC 5164 - Electric Drive Systems
ELEC 5174 - Power Electronic Systems
ELEC 5184 - Power Systems Analysis
ELEC 5194 - Power Systems Operation and Control
ELEC 5210 - Optimization Methods in Engineering
ELEC 5252 - Computer Communication Networks
ELEC 5294 - Advanced Power Electronic Systems
ELEC 5444 - Power System Laboratory
ELEC 5688 - Introduction to Nondestructive Testing
ELEC 5697 - Optical and Spatial Information Processing
ELEC 5710 - Advanced Electric Drive Systems
ELEC 5714 - Energy Systems Analysis
ELEC 5755 - Renewable Energy Systems
ELEC 5764 - Power Distribution Systems
ELEC 5980 - Statistical Quality Control



University of Colorado
Denver

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Mechanical Engineering

MECH 5161 - Compressible Flow

MECH 5162 - Heat Transfer I

MECH 5172 - Heat Transfer II

MECH 5112 - Introduction to Internal Combustion Engines

MECH 5177 - Energy Conversion

MECH 5178 - Solar Engineering

MECH 5179 - Introduction to Turbomachinery