



Metropolitan State University of Denver

CONSTRUCTION PROJECT MANAGEMENT

Department of Engineering & Engineering Technology

A multi-disciplinary major created to support a workforce initiative for the Construction Industries. A Minor is required. (Minors may not include those with the following prefixes: ACC, CIS, FIN, MKT, MGT) Students should consult with an advisor prior to selecting their minor. Recommended minors are- Architecture, Industrial Design, Mechanical Engineering Technology, Computer Science, Environmental Studies, Leadership Studies and Spanish.

Students with a completed U.S. Department of Labor (DOL) Office of Apprenticeship (OA) four-year Registered Construction Trades Apprenticeship and journeyman's credentials are awarded a block of 30 lower division semester credits that may be used in lieu of the required minor.

Apprenticeship credits are only applicable for the CPM major and may not be utilized in any other way at MSU Denver.

Elective Courses

Students are required to take elective courses to complete their major and fulfill the graduation requirement of 120 credits. The number of elective credits required varies depending on the minor selected. Students should consult with an advisor prior to selecting electives.

General Studies Requirements– 34-37 hours

Written Communication (6 credits)

Oral Communication (3 credits)

- CAS 1010 - Public Speaking **Credits: 3**
- OR CAS/HON 1710 - Interpersonal Communication **Credits: 3**

Quantitative Literacy (4 credits)

- MTH 1210 - Introduction to Statistics **Credits: 4**

Arts and Humanities (6 credits)

- PHI 3360 - Business Ethics **Credits: 3**
- PHI 3370 - Computers, Ethics, and Society **Credits: 3**

Historical (3 credits)

- See the General Studies section of the catalog for approved courses.

Natural and Physical Sciences (10 credits)

- See the General Studies section of the catalog for approved courses.

Social and Behavioral Sciences I (3 credits)

- CET 3120 - Engineering Economy **Credits: 3**

Social and Behavioral Sciences II (3 credits)

- CAS 3760 - Diversity and Communication in the U.S. (Multicultural Course)

Global Diversity (0 or 3 credits)

The department recommends that this requirement be met along with the Arts & Humanities, Historical, or Social & Behavioral Sciences general studies choices.

General Studies Total: 34-37 credits

Multicultural Requirement (0 or 3 credits)

The department recommends that this requirement be met along with the Arts & Humanities, Historical, or Social & Behavioral Sciences general studies choices.

See the Multicultural section of the catalog for approved courses.

Required CET Core Courses

	Core Courses	Prerequisites	Credit Hours
AMS 1010	Survey of Advanced Manufacturing and Workplace Preparation		3
CPM 3000	Workplace Safety	Prerequisite(s): AMS 1010	3
CPM 3980	Industry Internship	Prerequisite(s): Major in AMS; Junior or Senior status; permission of instructor	1-15 *
AMS 4700	Team Project Experience	Prerequisite(s): All CPM core courses completed with at least a "C-."	3
CET 3100	Construction Methods	Prerequisite(s): At least junior standing; or permission of instructor	3
CET 3110	Construction Estimating	Prerequisite(s) or Corequisite(s): CET 3100 or permission of instructor	3
CIS 2010	Foundations of Information Systems	Prerequisite(s): Completion of General Studies in Oral Communication; ENG 1020 or ENG 1021; and CIS/CSS 1010 with a grade of "C-" or better,	3

or appropriate score on the Computer Information Systems computer literacy screening test.

JMP 2610	Introduction to Technical Writing	Prerequisite(s): ENG 1010	3
MGT 3000	Organizational Management	Prerequisite(s): ENG 1020 or ENG 1021; Satisfaction of General Studies Requirements in Oral Communication and Quantitative Literacy, and Junior standing	3

CPM Core Total: 24-36* (58-73 total with general studies)

*The industry internship is required for students who do not bring in the apprenticeship credits noted above. The internship must be an approved construction industry placement.

Computer Information Systems Concentration

CIS Concentration

CIS 2110	Structured Problem Solving in Information Systems	Prerequisite(s): CIS 2010	3
CIS 3050	Fundamentals of Systems Analysis and Design	Prerequisite(s): CIS 2110	3
CIS 3060	Database Management Systems	Prerequisite(s): CIS 2110	3
CIS 3145	Business Application Development	Prerequisite(s): CIS 2110	3
CIS 3490	Managing Business Information with Enterprise Systems	Prerequisite(s): CIS 2010	3
CIS 4260	Database Administration	Prerequisite(s): CIS 3060	3
CIS 4410	Management Information Systems	Prerequisite(s): CIS 2110 and MGT 3000	3

CIS Concentration Subtotal: 21 credit hours (79-91 total with core and general studies)

(Elective courses may not include those with the following prefixes: ACC, CIS, FIN, MKT, MGT)

Management Concentration

MGT 2210	Legal Environment of Business I	Prerequisite(s): ENG 1020 or ENG 1021; and completion of General Studies requirements in Oral Communication.	3
MGT 3220	Legal Environment of Business II	Prerequisite(s): MGT 2210	3
OR			
MGT 3240	Employment and Human Resource Law	Prerequisite(s): MGT 2210	3
MGT 3530	Human Resources Management	Prerequisite(s): MGT 3000	3
MGT 3550	Operations Management	Prerequisite(s): MGT 3000 and CIS 2300 or CIS 3300 or MTH 1210 or MTH 1610	3
MGT 3260	Managing Business Risk	Prerequisite(s): MGT 2210 Legal Environment of Business I Prerequisite(s) or Corequisite(s): MGT 2210 Legal Environment of Business I	3
MGT 4050	Purchasing and Supply Chain Management	Prerequisite(s): MGT 3000	3
MGT 4550	Project Management	Prerequisite(s): MGT 3000 and CIS 2300 or CIS 3300 or MTH 1210 or MTH 1610	3

MGT Concentration Subtotal: 21 credit hours (79-94 total with core and general studies)

(Elective courses may not include those with the following prefixes: ACC, CIS, FIN, MKT, MGT)

AMS 1010 - Survey of Advanced Manufacturing and Workplace Preparation**Credits: 3**

Description: The student will learn the “soft skills” required by industry, such as leadership, interactive communication, and collaboration/teamwork skills, utilizing team exercises and team activities. The course also provides an introduction to Advanced Manufacturing and an overview of the Advanced Manufacturing Sciences (AMS) degree concentration’s fit and associated employment potential with Advanced Manufacturing Industries.

CPM 3980 - Industry Internship**Credits: 1-15****Prerequisite(s): Major in AMS; Junior or Senior status; permission of instructor**

Description: Students will have an opportunity to gain work experience under the guidance of an industry professional. Students must complete a minimum of 45 clock hours per credit hour during the semester in a placement relevant to their selected AMS concentration. All internship students will also be required to prepare weekly internship reports, complete a self-evaluation survey and a reflective paper at the completion of the placement.

Internship requirements vary by department. For information and instructions on finding and enrolling in an internship, contact the Applied Learning Center at 303-615-1333 or internships@msudenver.edu.

Note: This course is variable credit and may be repeated for up to 15 credit hours.

AMS 4700 - Team Project Experience**Credits: 3****Prerequisite(s): All CPM core courses completed with at least a “C-.”**

Description: Students will have an opportunity to gain team project work experience during collaborative projects with industry professionals.

University Requirement(s): Senior Experience

CET 3100 - Construction Methods**Credits: 3****Prerequisite(s): At least junior standing; or permission of instructor**

Description: This course provide a basic understanding of the method used by a general contractor to determine earthwork costs . The student is introduced to the application of engineering fundamentals for the analysis of heavy earthmoving equipment as well as to the basic concepts of CPM.

CET 3110 - Construction Estimating**Credits: 3****Prerequisite(s) or Corequisite(s): CET 3100 or permission of instructor**

Description: This course is a prerequisites or corequisite of CET 3100, Construction Methods. It provides a basic understanding of the methods used to prepare a building and/or bridge construction cost estimate. The students use plans and specifications to do quantity takeoffs.

CIS 2010 - Foundations of Information Systems**Credits: 3**

Prerequisite(s): Completion of General Studies in Oral Communication; ENG 1020 or ENG 1021; and CIS/CSS 1010 with a grade of “C-” or better, or appropriate score on the Computer Information Systems computer literacy screening test.

Prerequisite(s) or Corequisite(s): Completion of or enrollment in a course that meets the Quantitative Literacy requirement.

Description: This course is an introduction to information systems from a business perspective. It introduces students to computer hardware and software, use of productivity tools and the Internet to solve business problems, and an introduction to fundamental and functional business information systems.

Note: This course is primarily intended for students with majors in the College of Business. Credit will be granted for only one prefix: CIS or HON.

Cross Listed Course(s): HON 2011

CIS 2110 - Structured Problem Solving in Information Systems**Credits: 3****Prerequisite(s): CIS 2010**

Description: This is a problem-solving course in which the tools of structured design are used to design computerized solutions to business problems. Techniques of procedural programming languages are used to implement these designs. Emphasis is placed on the implementation of the three logic constructs in procedural languages: sequence, selection, and iteration. Students will be required to develop, test, and debug programs in one or more languages, using a variety of hardware and operating system platforms.

CIS 3050 - Fundamentals of Systems Analysis and Design**Credits: 3****Prerequisite(s): CIS 2110**

Description: This course covers the basic concepts of an information system and systems analysis tools and techniques necessary to develop requirements for a business information system. Students will concentrate on systems analysis using current methodologies, technologies, and available tools of analysis, as well as an examination of the effect on systems analysis by business drivers such as globalization, security, privacy, ethics, and collaboration. The course will focus on the analysis phase including requirements definition, modeling, feasibility, project planning and management, and documentation.

CIS 3060 - Database Management Systems**Credits: 3****Prerequisite(s): CIS 2110**

Description: This course provides an introduction to the design, development, implementation, and manipulation of databases. Students will create information level database designs from a set of user requirements and implement those designs employing a 4GL database tool. Students will also be introduced to distributed database management, concurrency control, data warehousing, and data mining.

CIS 3145 - Business Application Development**Credits: 3****Prerequisite(s): CIS 2110**

Description: This course uses the Java programming language for the development of object-oriented, event-driven Graphical User Interface (GUI) business applications. Students use Java as an iterative software development tool to create web and stand-alone solutions for business problems. Students also complete a final multi-window application project, which includes problem analysis, program design, solution development, and implementation plans.

CIS 3490 - Managing Business Information with Enterprise Systems**Credits: 3****Prerequisite(s): CIS 2010**

Description: Students gain an understanding of the theoretical and practical issues of Enterprise Resource Planning (ERP) systems used within organizations. The course demonstrates how ERP systems integrate information and organizational processes across functional areas with a unified database, best practices and shared operating tools. Students will configure a running ERP system (e.g. SAP), execute transactions and produce reports for supporting common business processes and business information management. Students will be able to evaluate how ERP systems enable firms to operate their business processes effectively and efficiently. Students also learn to model, assess and improve processes through practical work and by analyzing case studies.

CIS 4260 - Database Administration**Credits: 3****Prerequisite(s): CIS 3060**

Description: This course covers the functions and responsibilities of the Database Administrator (DBA) in an organization with an integrated, shared Relational Database Management System (RDBMS). The course will focus on the technical requirements of the DBA including enrolling new users, creating the database, backup and recovery of data, security measures, implementing data integrity, and tuning the database.

CIS 4410 - Management Information Systems**Credits: 3****Prerequisite(s): CIS 2110 and MGT 3000**

Description: This course provides an overview of management information systems, managerial decision making practices and styles, and requisite information needs. International information concepts, the influence of national cultures on decision making, information use, and on various system design approaches are examined. The course addresses the practical aspects of the development of management information systems and decision-support systems.

CPM 3000 - Workplace Safety**Credits: 3****Prerequisite(s): AMS 1010**

Description: The course is designed to prepare students to work safely in construction environments and allow the informed supervision of other workers in regard to workplace safety. Emphasis is placed on practical applications of safety theory and hazard specific content. The course also provides Occupational Safety and Health Administration (OSHA) 30 training and Department of Labor (DOL) course completion certification for students taking the course.

JMP 2610 - Introduction to Technical Writing**Credits: 3****Prerequisite(s): ENG 1010**

Description: This course provides students with the skills to analyze and produce clear and effective technical and scientific documents and materials. Students determine the style, purpose, content, and format for numerous industry-specific reports and technical support documents. Students analyze and produce accessible materials for expert, technical, lay, and intercultural audiences. Students also develop, incorporate, and cite visual elements, including images, tables, and the representation of numeric data, to support the message delivered towards a specific audience.

Note: Credit will be granted for only one prefix: HON or JMP.

Cross Listed Course(s): HON 2611

MGT 2210 - Legal Environment of Business I

Credits: 3

Prerequisite(s): ENG 1020 or ENG 1021; and completion of General Studies requirements in Oral Communication.

Prerequisite(s) or Corequisite(s): Completion of Quantitative Literacy requirement or enrollment in a course that satisfies the Quantitative Literacy requirement.

Description: This course is designed to present the legal system as it applies to business. The course includes a discussion of fundamental concepts related to the nature and sources of law and to the resolution of disputes. The course requires analysis of statutes, cases, and regulations of related governmental agencies that address employment, securities, trade and workplace decisions. The law of agency, contracts, organizations and torts is analyzed. Ethical and international aspects of law are treated where appropriate.

Note: Credit will be granted for only one prefix: HON or MGT.

Cross Listed Course(s): HON 2210

MGT 3000 - Organizational Management

Credits: 3

Prerequisite(s): ENG 1020 or ENG 1021; Satisfaction of General Studies Requirements in Oral Communication and Quantitative Literacy, and Junior standing

Description: This course examines, analyzes, and assesses managerial functions and processes as related to business and other organizations. It is designed to prepare students to meet the challenges of a highly dynamic and ever-changing business environment by formulating individual competencies and skills, translating theory into practice, creating critical thinkers, and reflecting on the integration of new concepts and environmental changes into managerial practices.

MGT 3220 - Legal Environment of Business II

Credits: 3

Prerequisite(s): MGT 2210

Description: This course provides an overview of the contemporary legal environment in which businesses operate. It explores various forms of business organizations, such as corporations and limited liability companies, and business opportunities, such as franchises. Also covered are important areas of government regulation of business including securities law, antitrust law, environmental law, and bankruptcy law. The course also delves into the realm of employment law, with a focus on employment discrimination, affirmative action, and labor law.

MGT 3240 - Employment and Human Resource Law

Credits: 3

Prerequisite(s): MGT 2210

Description: This course is an in-depth study of the legal and practical implications of employment and human resources law. Students interested in management, human resources or owning their own business will benefit from this course. Topics include statutory law, common law and constitutional law as it relates to the employment/human resources context, employer/ employee relationship, antidiscrimination laws, labor law, litigation prevention methods and privacy. The focus of the course is on the practical elements of law, with an emphasis on Colorado and federal law.

MGT 3530 - Human Resources Management

Credits: 3

Prerequisite(s): MGT 3000

Description: This course provides the student with a broad overview of the contemporary issues, theories, and principles used to effectively manage human resources in organizations. The psychological, social, legal, and economic bases underlying the practices of human resource management are studied. Topics such as recruitment, selection, performance appraisal, and compensation are analyzed. Some sections of this course are taught with an actual business client. Students engage with the client in conjunction with classroom learning (service learning).

Note: Course Revised June 28, 2019

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MGT 3550 - Operations Management

Credits: 3

Prerequisite(s): MGT 3000 and CIS 2300 or CIS 3300 or MTH 1210 or MTH 1610

Description: This course is an introduction to operations management decision-making and to the tools used to enhance the decision-making process. Attention is given to the design and operation of the production/service system and its interrelationship with other systems in the organization. The course places special emphasis on the use of quantitative techniques in decision making. Topics include productivity, strategic positioning and design of operations (e.g., capacity, layout, location, and work methods), project management, forecasting, quality control, supply-chain management, and inventory management.

MGT 3260 - Managing Business Risk

Credits: 3

Prerequisite(s): MGT 2210 Legal Environment of Business I

Prerequisite(s) or Corequisite(s): MGT 2210 Legal Environment of Business I

Description: This course addresses how business owners/managers deal with the various risks of running a business. Businesses can face unexpected and accidental losses from a variety of sources and, without a solid risk management plan for these contingencies, the resulting losses can result in bankruptcy. This course focuses on the processes used in identifying risk, evaluating the potential for losses to the organization, and creating a strategy to retain or transfer the risk. Major topics include risk to property, liability risk, legal considerations, risk financing strategies, and operational and strategic risks.

MGT 4050 - Purchasing and Supply Chain Management

Credits: 3

Prerequisite(s): MGT 3000

Description: This course covers contemporary purchasing and supply-chain issues, concepts, and techniques related to the location, analysis, and monitoring of sources of goods, materials, and services.

MGT 4550 - Project Management

Credits: 3

Prerequisite(s): MGT 3000 and CIS 2300 or CIS 3300 or MTH 1210 or MTH 1610

Description: This course investigates the concepts and applicability of matrix organizations and project management. The unique nature of the project-management structure is also examined, including its emphasis on integrative decision making throughout a product's life cycle.

Note: Credit will be granted for only one prefix: HON or MGT.

Cross Listed Course(s): HON 4550