***Twin Cities Campus***

# Construction Management B.A.Sc.

*CCAPS Applied Professional Studies*

**College of Continuing and Professional Studies**

- Program Type: Baccalaureate
- Requirements for this program are current for Fall 2016
- Required credits to graduate with this degree: 120
- Required credits within the major: 85 to 88
- Degree: Bachelor of Applied Science

Construction management transforms project design and its engineering requirements into a physical structure, focusing on management and business skills needed to deliver high quality construction results on time and within budget. The major offers experience and education leading directly to a professional management career in high demand areas in the construction industry, including residential, commercial, industrial, institutional, highway heavy, facility management and process systems sectors. The construction management major is offered in close collaboration with the Minnesota and regional construction industry.

## Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

## Admission Requirements

Students must complete 45 credits before admission to the program.

A GPA above 2.0 is preferred for the following:

- 2.50 transferring from another University of Minnesota college
- 2.50 transferring from outside the University

Students who have 30 transferable semester credits, preferred minimum 2.50 GPA, and a strong interest in the major may be admitted to pre-major status.

Each application for admission is individually reviewed in a holistic context.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

**Required prerequisites**

**Courses**

**Calculus**

MATH 1142 - Short Calculus [MATH] (4.0 cr)
*or* MATH 1271 - Calculus I [MATH] (4.0 cr)
*or* MATH 1571H - Honors Calculus I [MATH] (4.0 cr)

**Physics**

PHYS 1101W - Introductory College Physics I [PHYS, WI] (4.0 cr)
*or* PHYS 1107 - Introductory Physics Online I [PHYS] (4.0 cr)
*or* PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
*or* PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)

**Building Construction Plan Reading**

CMGT 3011 - Construction Plan Reading (2.0 cr)

## General Requirements

All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements.Required courses for the major or minor in which a student receives a D grade (with or without plus or minus) do not count toward the major or minor (including transfer courses).

## Program Requirements

**Preparatory Courses for All Subplans**

ACCT 2051 - Introduction to Financial Reporting (4.0 cr)
CMGT 3001W - Introduction to Construction [WI] (3.0 cr)

**Technical Writing**

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ABUS 4023W - Communicating for Results [WI] (3.0 cr)
*or* WRIT 1001 - The Art of Explaining Things: Introduction to Technical Writing and Communication (3.0 cr)
*or* WRIT 3152W - Writing on Issues of Science and Technology [WI] (3.0 cr)
*or* WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
*or* PHYS 1101W - Introductory College Physics I [PHYS, WI] (4.0 cr)
*or* PHYS 1301W - Introductory Physics for Science and Engineering I [PHYS, WI] (4.0 cr)
*or* PHYS 1401V - Honors Physics I [PHYS, WI] (4.0 cr)

**Public Speaking or Interpersonal Communication**
COMM 1101 - Introduction to Public Speaking [CIV] (3.0 cr)
*or* COMM 1313W - Analysis of Argument [WI] (3.0 cr)
*or* COMM 3402 - Introduction to Interpersonal Communication (3.0 cr)
*or* COMM 3411 - Introduction to Small Group Communication (3.0 cr)
*or* WRIT 3257 - Technical and Professional Presentations (3.0 cr)
*or* COMM 1101H - Honors: Introduction to Public Speaking [CIV] (3.0 cr)

**Economics**
APEC 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
*or* APEC 1102 - Principles of Macroeconomics (3.0 cr)
*or* ECON 1101 - Principles of Microeconomics [SOCS, GP] (4.0 cr)
*or* ECON 1102 - Principles of Macroeconomics (4.0 cr)
*or* APEC 1101H - Principles of Microeconomics [SOCS, GP] (4.0 cr)

**Introduction to Management**
ABUS 4022W - Management in Organizations [WI] (3.0 cr)
*or* MGMT 3001 - Fundamentals of Management (3.0 cr)

**Major Core Courses**
Student must take CMgt 4196: Construction Management Internship for a minimum of 3 credits. (Additional internships can be taken for 1-4 credits).
ABUS 4013W - Legal, Ethical, and Risk Issues for Managers [WI] (3.0 cr)
ABUS 4101 - Accounting and Finance for Managers (3.0 cr)
ABUS 4701 - Introduction to Marketing (3.0 cr)
CMGT 4011 - Construction Documents and Contracts (3.0 cr)
CMGT 4021 - Construction Planning and Scheduling (3.0 cr)
CMGT 4022 - Construction Estimating (3.0 cr)
CMGT 4031 - Construction Safety and Loss Control (3.0 cr)
CMGT 4041W - Specifications and Technical Writing for Construction Professionals [WI] (3.0 cr)
CMGT 4196 - Construction Management Internship (1.0 cr)
CMGT 4471 - Sustainability for Construction Managers (2.0 cr)
CMGT 4861 - Construction Management Capstone (3.0 cr)

**Upper Division Writing Intensive within the major**
Students are required to take one upper division writing intensive course within the major. If that requirement has not been satisfied within the core major requirements, students must choose one course from the following list. Some of these courses may also fulfill other requirements.
Take 0 - 1 course(s) from the following:
•ABUS 4023W - Communicating for Results [WI] (3.0 cr)
•WRIT 3152W - Writing on Issues of Science and Technology [WI] (3.0 cr)
•WRIT 3562W - Technical and Professional Writing [WI] (4.0 cr)
•ABUS 4022W - Management in Organizations [WI] (3.0 cr)
•ABUS 4013W - Legal, Ethical, and Risk Issues for Managers [WI] (3.0 cr)
•CMGT 4041W - Specifications and Technical Writing for Construction Professionals [WI] (3.0 cr)

## Program Sub-plans
Students are required to complete one of the following sub-plans.

### Commercial
**Preparatory Courses**
CMGT 2019 *{Inactive}*(2.0 cr)

**Required Courses**
CEGE 3202 - Surveying & Mapping (2.0 cr)
CMGT 4201 - Construction Accounting (2.0 cr)
CMGT 4542 - Building Energy Systems (3.0 cr)
CMGT 4544 - Materials and Structures I (4.0 cr)
CMGT 4545 - Materials and Structures II (4.0 cr)
CMGT 4562 - Building Envelope Design and Construction (2.0 cr)

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**Technical Electives**

Student must complete a total of 6 credits selected from Construction Science and/or Other.

**Construction Science**

ARCH 4561 - Architecture and Ecology [ENV] (3.0 cr)
*or* BBE 3101 *{Inactive}*(3.0 cr)
*or* SSM 4614 - Building Systems Performance: Testing & Diagnostics (2.0 cr)
*or* BBE 4733 - Renewable Energy Technologies [TS] (3.0 cr)
*or* CEGE 3501 - Introduction to Environmental Engineering [ENV] (3.0 cr)
*or* CEGE 4401 - Steel and Reinforced Concrete Design (4.0 cr)
*or* CMGT 4073 - Building Codes for Construction Managers (1.0 cr)
*or* CMGT 4081 - Managing Erosion and Sediment Control on Construction Sites (1.0 cr)
*or* CMGT 4215 - Facility Quality Assessment and Commissioning (2.0 cr)
*or* LA 3571 - Landscape Construction: Site Systems and Engineering (3.0 cr)

*or* **Other**

ABUS 4104 - Management and Human Resource Practices (3.0 cr)
*or* ABUS 4217 - Real Estate Development: Process and Tools (2.0 cr)
*or* CMGT 4000 - The Construction Industry through Time and Tomorrow (2.0 cr)
*or* CMGT 4001 - Innovative Contracting (1.0 cr)
*or* CMGT 4003 - Managing with Building Information Modeling (2.0 cr)
*or* CMGT 4193 - Directed Study (1.0 - 4.0 cr)
*or* CMGT 4196 - Construction Management Internship (1.0 cr)
*or* CMGT 4422 - Advanced Construction Cost Estimating (2.0 cr)
*or* CMGT 4550 - Topics in Construction Management (1.0 - 2.0 cr)

## Highway Heavy and Civil Works

**Preparatory Courses**

CMGT 2019 *{Inactive}*(2.0 cr)

**Required Courses**

CEGE 3201 - Transportation Engineering [TS] (3.0 cr)
CEGE 3202 - Surveying & Mapping (2.0 cr)
CEGE 4201 *{Inactive}*(3.0 cr)
CMGT 4201 - Construction Accounting (2.0 cr)
CMGT 4545 - Materials and Structures II (4.0 cr)

**Technical Electives**

Student must complete a total of 9 credits selected from Construction Science and Other.

**Construction Science**

Student must complete at least 2 credits from this group.
BBE 3101 *{Inactive}*(3.0 cr)
*or* CEGE 3301 - Soil Mechanics I (3.0 cr)
*or* CEGE 3501 - Introduction to Environmental Engineering [ENV] (3.0 cr)
*or* CEGE 3502 - Fluid Mechanics (4.0 cr)
*or* CEGE 4251 *{Inactive}*(4.0 cr)
*or* CEGE 4253 - Pavement Design, Engineering, and Management (4.0 cr)
*or* CEGE 4501 - Hydrologic Design (4.0 cr)
*or* CMGT 4081 - Managing Erosion and Sediment Control on Construction Sites (1.0 cr)
*or* LA 3571 - Landscape Construction: Site Systems and Engineering (3.0 cr)

**Other**

Student may select additional courses from this group.
CMGT 4000 - The Construction Industry through Time and Tomorrow (2.0 cr)
*or* CMGT 4001 - Innovative Contracting (1.0 cr)
*or* CMGT 4003 - Managing with Building Information Modeling (2.0 cr)
*or* CMGT 4193 - Directed Study (1.0 - 4.0 cr)
*or* CMGT 4196 - Construction Management Internship (1.0 cr)
*or* CMGT 4422 - Advanced Construction Cost Estimating (2.0 cr)
*or* CMGT 4550 - Topics in Construction Management (1.0 - 2.0 cr)
*or* HRIR 3021 - Human Capital Management (3.0 cr)

## Residential

**Preparatory Courses**

CMGT 2019 *{Inactive}*(2.0 cr)
CMGT 4544 - Materials and Structures I (4.0 cr)
*or* AEM 2021 - Statics and Dynamics (4.0 cr)

**Required Courses**

SSM 3612 - Systems Approach to Building Science and Construction (4.0 cr)
SSM 4616 - Building Science I: Fundamentals (4.0 cr)
SSM 4614 - Building Systems Performance: Testing & Diagnostics (2.0 cr)

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CMGT 4201 - Construction Accounting (2.0 cr)
CMGT 4545 - Materials and Structures II (4.0 cr)

**Technical Electives**

Student must complete a total of 3 credits selected from Construction Science and/or Other.

**Construction Science**

ARCH 4561 - Architecture and Ecology [ENV] (3.0 cr)
*or* BBE 3101 *{Inactive}*(3.0 cr)
*or* BBE 4733 - Renewable Energy Technologies [TS] (3.0 cr)
*or* CMGT 4073 - Building Codes for Construction Managers (1.0 cr)
*or* CMGT 4081 - Managing Erosion and Sediment Control on Construction Sites (1.0 cr)
*or* LA 3571 - Landscape Construction: Site Systems and Engineering (3.0 cr)

*or* **Other**

ABUS 4104 - Management and Human Resource Practices (3.0 cr)
*or* ABUS 4217 - Real Estate Development: Process and Tools (2.0 cr)
*or* CMGT 4000 - The Construction Industry through Time and Tomorrow (2.0 cr)
*or* CMGT 4001 - Innovative Contracting (1.0 cr)
*or* CMGT 4003 - Managing with Building Information Modeling (2.0 cr)
*or* CMGT 4193 - Directed Study (1.0 - 4.0 cr)
*or* CMGT 4196 - Construction Management Internship (1.0 cr)
*or* CMGT 4422 - Advanced Construction Cost Estimating (2.0 cr)
*or* CMGT 4550 - Topics in Construction Management (1.0 - 2.0 cr)

## Facility Management

**Preparatory Courses**

ABUS 4104 - Management and Human Resource Practices (3.0 cr)
CMGT 3024W - Facility Programming and Design [WI] (2.0 cr)

**Required Courses**

ABUS 4217 - Real Estate Development: Process and Tools (2.0 cr)
ABUS 4211 - Facility Asset Management, Finance, and Budgeting (2.0 cr)
ABUS 4213 - Fundamentals of Facility Management (3.0 cr)
CMGT 4215 - Facility Quality Assessment and Commissioning (2.0 cr)
CMGT 4542 - Building Energy Systems (3.0 cr)
CMGT 4562 - Building Envelope Design and Construction (2.0 cr)

**Technical Electives**

Student must complete a total of 6 credits of Technical Electives. Student should check with their adviser about courses not on this list.
BBE 3101 *{Inactive}*(3.0 cr)
*or* SSM 4614 - Building Systems Performance: Testing & Diagnostics (2.0 cr)
*or* BBE 4733 - Renewable Energy Technologies [TS] (3.0 cr)
*or* CMGT 4000 - The Construction Industry through Time and Tomorrow (2.0 cr)
*or* CMGT 4001 - Innovative Contracting (1.0 cr)
*or* CMGT 4003 - Managing with Building Information Modeling (2.0 cr)
*or* CMGT 4073 - Building Codes for Construction Managers (1.0 cr)
*or* CMGT 4081 - Managing Erosion and Sediment Control on Construction Sites (1.0 cr)
*or* CMGT 4193 - Directed Study (1.0 - 4.0 cr)
*or* CMGT 4196 - Construction Management Internship (1.0 cr)
*or* CMGT 4544 - Materials and Structures I (4.0 cr)
*or* CMGT 4545 - Materials and Structures II (4.0 cr)
*or* CMGT 4550 - Topics in Construction Management (1.0 - 2.0 cr)
*or* LA 3571 - Landscape Construction: Site Systems and Engineering (3.0 cr)

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