Construction Management

Department Information

- **Department Location:**
  Engineering Bldg 106
- **Department Phone:**
  701-231-6202
- **Department Web Site:**
  www.ndsu.edu/construction/
- **Credential Offered:**
  B.S.Cons.M.
- **Official Program Curriculum:**
  bulletin.ndsu.edu/undergraduate/program-curriculum/construction-management/

The construction industry is one of the largest industries in the United States. It accounts for nearly 8 percent of the nation's gross national product and employs millions of people. The industry is divided into four sectors including residential building construction, industrial construction, commercial building construction, and heavy civil construction. The Department of Construction Management and Engineering provides quality educational programs that prepare nationally competitive undergraduate and graduate students for successful careers in the construction engineering and management professions.

The Program

Construction management is a combination of technology, construction techniques, and management to meet the needs of the rapidly growing construction industry. The program is designed to prepare students for the art of achieving maximum profit by efficient use of people, machines, materials and other resources to complete a construction project on time and to the satisfaction of the owner. A meld of engineering, construction, management and business gives the student a background and understanding of a management point of view in the construction industry. The program leading to Bachelor of Science in Construction Management degree is accredited by the American Council for Construction Education (ACCE), http://www.acce-hq.org.

A minor in Business Administration offered by the College of Business is required for all B.S. in Construction Management students. Students are required to have a minimum cumulative GPA of 2.50 to be admitted into the minor program. A minor in Business Administration requires a minimum GPA of 2.50 in the courses that satisfy the minor. In addition, a cumulative GPA of 2.50 overall is required to graduate with a Bachelor of Science in Construction Management degree.

Program Objectives

1. Provide to construction students the basic skills necessary to plan, organize, and control resources to manage the overall construction process.
2. Provide to construction students the technical knowledge and problem solving skills for a career in construction.
3. Provide to construction students the knowledge and skills necessary to identify, define, and compare design alternatives.
4. Provide to construction students necessary communication skills for the successful practice of the construction profession.
5. Provide to construction students the professional opportunities and skills to pursue lifelong learning within the broader societal context of the construction profession.

The Program Objectives support the department goals defined in the strategic plan that relates to the undergraduate program, and are further connected to the Program Learning Outcomes.

Program Learning Outcomes

The Construction Management program has adopted the 20 Student Learning Outcomes (SLOs) defined by ACCE as its Program Learning Outcomes. Upon graduation from Construction Management program, graduates shall be able to:

1. Create written communications appropriate to the construction discipline.
2. Create oral presentations appropriate to the construction discipline.
3. Create a construction project safety plan.
4. Create construction project cost estimates.
5. Create construction project schedules.
6. Analyze professional decisions based on ethical principles.
7. Analyze construction documents for planning and management of construction processes.
8. Analyze methods, materials, and equipment used to construct projects.
9. Apply construction management skills as a member of a multi-disciplinary team.
10. Apply electronic-based technology to manage the construction process.
11. Apply basic surveying techniques for construction layout and control.
12. Understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process.
13. Understand construction risk management.
15. Understand construction quality assurance and control.
16. Understand construction project control processes.
17. Understand the legal implications of contract, common, and regulatory law to manage a construction project.
18. Understand the basic principles of sustainable construction.
19. Understand the basic principles of structural behavior.
20. Understand the basic principles of mechanical, electrical and piping systems.

**Faculty and Staff**

The Department of Construction Management and Engineering has a group of faculty and staff members dedicated to teaching, advising, and career consultation. All faculty members have doctoral degrees. Some of them have professional licenses such as the Professional Engineer (PE) and the Certified Professional Constructor (CPC). In addition, many faculty members have construction related working experiences both in the United States and overseas.

**Facilities**

The Department of Construction Management and Engineering has well equipped classrooms, computer labs, and teaching and research labs for its students. Classrooms used by the department are equipped with a computer, a Blackboard course management system, Internet access, a projector, a document camera, and an Apple TV. In addition, the department maintains a computer lab, a virtual reality lab, a concrete lab and a soils lab and shares laboratory space with the Department of Civil Engineering for the geotechnical and surveying labs.

**Career Opportunities**

Construction management graduates are in high demand after graduation by contractors in all types of construction, from general contractors to specialty contractors. Positions available include superintendent, project manager and construction executive. Starting salary is between $45,000 and $80,000 in the recent years. Summer employment in the construction industry is also available to construction management students. The members of the Associated General Contractors (AGC) of North Dakota as well as other construction firms provide summer jobs for our students every year.

**Student Organizations**

There are three student organizations in the Department of Construction Management and Engineering: Associated General Contractors of America (AGC), National Association of Home Builders (NAHB), and Sigma Lambda Chi (SLC). AGC Student Chapter competes each year at the Associated Schools of Construction Competition. NAHB Student Chapter competes each year at the Residential Construction Management Competition. SLC is an international construction honor society.

**Scholarship Opportunities**

The AGC of North Dakota, the Home Builders Care Foundation (a charitable arm of the Home Builders Association of Fargo-Moorhead), and the NAHB offer annual scholarships to outstanding freshmen and upper class students. In addition, many other scholarships, such as Helgason Engineering Scholarships are available to freshmen and transfer students. Students can contact the Office of Admission for more information or check the department website at https://www.ndsu.edu/construction/current_students/scholarships/.

**Plan of Study**

Please note this is a sample plan of study and not an official curriculum. Actual student schedules for each semester will vary depending on start year, education goals, applicable transfer credit, and course availability. Students are encouraged to work with their academic advisor on a regular basis to review degree progress and customize an individual plan of study.

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# MATH 146 (Gen Ed R Category)
### Sophomore

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Total Credits: 15

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Total Credits: 16

### Senior

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Total Credits: 15

An overall minimum CGPA of 2.50 and a minor in Business Administration with a minor GPA of 2.50 are required to graduate with a B.S. in Construction Management.

*All science courses require the companion lab with the exception of geology.

**To be eligible for enrollment into 300/400 level courses offered by the College of Business requires application for a minor in Business Administration (BA).

*** To satisfy the Gen Ed Category B, a student can choose between two options: ECON 105 plus an additional course within Category B OR ECON 201 and ECON 202. Both options satisfy the Gen Ed Category G requirements and the requirements for the Business Administration minor.

Gen Ed Category description can be found on the General Education page (http://bulletin.ndsu.edu/academic-policies/undergraduate-policies/general-education).