

# DEPARTMENT OF INDUSTRIAL STUDIES

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## ABOUT THE DEPARTMENT AND MAJORS

### CONSTRUCTION MANAGEMENT

Construction management is an interdisciplinary field of study that focuses on the management of construction projects. The curriculum concentrates on the application of critical concepts using hands-on laboratories and high impact learning practices. The Bachelor of Science in Construction Management has two emphases:

- The Construction Management Emphasis prepares graduates to enter managerial positions in construction as project managers, estimators, schedulers and supervisors of labor.
- The Construction Safety Management Emphasis prepares students to enter construction as safety directors, safety managers, safety trainers and safety consultants.

The student learning outcomes for this program were designed to educate graduates with the knowledge and skills necessary to be successful construction managers. Therefore, upon completion of the program, graduates will possess the ability to:

- Estimate the cost of construction;
- Plan and execute a construction schedule;
- Evaluate and plan for HVAC, electrical and plumbing using various schematic drawings;
- Demonstrate safe operation of construction tools and equipment, recognize and address common safety challenges and promote a culture of safety; and
- Identify advantages and disadvantages of construction materials for specific situations.

Furthermore, graduates completing the construction management emphasis will:

- Demonstrate proficiency using computer graphics and construction management software;
- Perform various surveying techniques in plotting for construction; and
- Demonstrate various aspects of construction administration.

Likewise, graduates completing the construction safety management emphasis will be prepared to:

- Interpret government regulations and policies as they pertain to construction safety;
- Develop and implement construction safety plans, recognize safe practices and make corrections for unsafe conditions at job sites;
- Conduct job safety analyses and inspections of construction sites; and
- Evaluate hazards inherent to construction activities, identify current safety regulations and develop strategies and plans of action for improvement.

Additionally, students will have the opportunity to complete various technical certificates in construction management and construction safety and risk control management upon graduation.

### INDUSTRIAL TECHNOLOGY MANAGEMENT

The Industrial Technology Management programs are accredited by the Association of Technology, Management, and Applied Engineering. Industrial Technology Management is a hands-on, applied engineering, management degree. Students are required to select at least one emphasis as a part of this major:

- The Manufacturing Technology Management Emphasis prepares graduates to enter industry in technical, engineering, managerial and staff positions in the areas of production, manufacturing, design, technical sales and services, and quality assurance. Coursework in the Metals Processing Technology Minor is certified by the Foundry Educational Foundation, one of twenty-five certified schools in the nation.
- The Occupational Safety Management Emphasis prepares graduates to enter manufacturing, construction, business, consulting agencies, insurance companies and government agencies in management and engineering positions.

### COOPERATIVE EDUCATION AND INTERNSHIPS

A cooperative education and internship program is administered by the department. Through a supervised work experience with approved employers, students gain the advantage of up-to-date knowledge and practical experience related to their major and area of specialization. Students wishing to complete an industrial internship must meet the following requirements:

1. The following general education requirements must be completed before a student will be permitted to enroll in an industrial studies internship: ENGLISH 1130 and ENGLISH 1230, SPEECH 1010 and mathematics (three credits);
2. Be in good academic standing and be classified as a junior (minimum 60 credits);
3. Be approved and registered for the credits prior to the internship or cooperative education experience;
4. Have completed 18 credits of industrial studies coursework (INDUSTDY) to include INDUSTDY 1010. Three credits of internship are required; however, a maximum of eight credits may be counted towards a student's degree.

## TECHNOLOGY AND ENGINEERING EDUCATION

Technology and Engineering Education prepares students to teach in elementary, middle level and secondary school systems. A student completing this major receives Department of Public Instruction certification to teach technology education (220 license). The strength of the program is in the collaboration between professional education course requirements and technology course requirements. Technology and Engineering Education majors learn hands-on approaches to illustrate the effects of technology on modern life.

## GENERAL REQUIREMENTS

### BACHELOR OF SCIENCE DEGREE

Course	Title	Credits
Total for graduation		120
General education		44-58
Major studies		48-54

## MISSION STATEMENTS AND STUDENT LEARNING OUTCOMES FOR THE DEPARTMENT AND MAJORS/EMPHASES

The mission of the UW-Platteville Department of Industrial Studies is to provide exceptional quality education and practical experiences for students. The instruction provided will emphasize theoretical and practical studies, internships, applied research and the relationship of management and technology toward the preparation of competent leaders for a global society.

### CONSTRUCTION MANAGEMENT EMPHASES MISSION STATEMENTS AND STUDENT LEARNING OUTCOMES

1. The mission of the **Construction Management Emphasis** is to prepare competent professional leaders who understand the interrelationships between management and construction technology and apply their skills to solve real-world problems in a global society. Construction Management student learning outcomes are:
  - a. Students will be able to estimate the cost of construction.
  - b. Students will be able to plan and execute a schedule of construction.
  - c. Students will be able to demonstrate proficiency in using computer graphics and management software programs.
  - d. Students will be able to evaluate and plan for HVAC, electrical and plumbing using various schematic drawings.
  - e. Students will be able to identify advantages and disadvantages of various construction materials for specific situations.
  - f. While on the job site, students will be able to demonstrate safe operation of construction tools and equipment.
  - g. Students will be able to develop and implement construction safety plans, recognize safe practices and also make corrections for unsafe conditions at the job site.
  - h. Students will be able to perform various surveying techniques in plotting for construction.
    - i. Students will be able to demonstrate various aspects of construction administration.
2. The mission statement of the **Construction Safety Management Emphasis** is to develop highly competent professionals and leaders in the fields of construction management and safety who understand the interrelationships between management, construction technologies and site safety. Construction Safety Management learning outcomes are as follows. Students will be able to:
  - a. Estimate the cost of construction.
  - b. Plan and execute a schedule of construction.
  - c. Promote a safety culture.
  - d. Interpret government regulations and policies as they pertain to construction safety.
  - e. Conduct job safety analysis and safety inspections of construction sites.
  - f. Evaluate construction drawings and specifications relative to the construction trades, including, but not limited to, plumbing, electrical and HVAC.
  - g. Evaluate the safety requirements of construction activities and develop plans of action and safety procedures as needed.
  - h. Identify advantages and disadvantages of various construction materials for specific situations.
  - i. Students will have the opportunity to earn an OSHA 30-hour construction safety card.

## INDUSTRIAL TECHNOLOGY MANAGEMENT EMPHASES MISSION STATEMENTS AND STUDENT LEARNING OUTCOMES

1. The mission of the **Manufacturing Technology Management Emphasis** is to offer the best educational opportunities to prepare professional and technical leaders for manufacturing and service industries. These opportunities emphasize theoretical and practical experiences, internships and applied research. The program stresses the relationship of management and technology for the preparation of competent industrial leaders for a global manufacturing environment. Manufacturing Technology Management student learning outcomes are:
  - a. Students will be able to identify advantages and limitations of industrial materials in the manufacturing of products.
  - b. Students will be able to explain the basics of industrial processes.
  - c. Students will be able to develop and execute a production plan for manufacturing and a plan for the procurement of equipment.
  - d. Students will be able to assess in practical terms the elements of a quality system.
  - e. Students will be able to assess the cost of delivering a product or service using various work measurements and cost analysis techniques.
  - f. Students will be able to demonstrate their ability to lead others within the vision, values and ethics in the global economy and deal with personnel issues having an appreciation for cultural differences.
  - g. Students will be able to demonstrate their ability to utilize computer technology through graphics, programming, machining and communication.
  - h. Students will have the ability to adapt and modify to current needs.
  - i. Students will have the ability to problem solve and identify root causes.
  - j. Students will be able to understand research procedures through interpretation of data and through conducting research.
  - k. Students will be able to develop and implement manufacturing safety plans.
2. The mission of the **Occupational Safety Management Emphasis** is to develop highly competent professionals and leaders in the field of safety and health through classroom preparation, laboratory activities and internships. These educational experiences emphasize safety policies, procedures, issues and incidents in the global workplace. Occupational Safety Management student learning outcomes are:
  - a. Students will be able to interpret government laws and policies as they pertain to safety.
  - b. Students will be able to conduct safety facility inspections at work sites.
  - c. Students will be able to promote a safety culture.
  - d. Students will be able to analyze work situations for ergonomic issues.
  - e. Students will be able to develop emergency disaster preparedness plans.
  - f. Students will be able to analyze the safe operation of equipment, machines and tools in the course of work.
  - g. Students will be able to develop and deliver safety programs at the workplace.

## TECHNOLOGY AND ENGINEERING EDUCATION MISSION STATEMENT

The mission statement of the **Technology and Engineering Education** program is to prepare the finest technology education teachers in the state of Wisconsin.

Competencies for Technology and Engineering Education majors are elaborated under the 10 Wisconsin Standards for Teacher Development and Licensure. The WSTD standards can be found on the School of Education (<http://catalog.uwplatt.edu/undergraduate/liberal-arts-education/education/>) page.

### WISCONSIN STANDARDS FOR TEACHER DEVELOPMENT AND LICENSURE

#### STANDARD # 1

##### Pupil Development.

The teacher understands how pupils grow and develop, recognizing that patterns of learning and development vary individually within and across the cognitive, linguistic, social, emotional, and physical areas. The teacher designs and implements developmentally appropriate and challenging learning experiences for pupils.

#### STANDARD # 2

##### Learning Differences.

The teacher uses his or her understanding of individual pupil differences and diverse cultures and communities to ensure inclusive learning environments that enable each pupil to meet high standards.

#### STANDARD # 3

##### Learning Environments.

The teacher works with others to create environments that support individual and collaborative learning, and that encourage positive social interaction, active engagement in learning, and self-motivation.

#### STANDARD # 4

##### Content Knowledge.

The teacher understands the central concepts, tools of inquiry, and structures of each discipline he or she teaches. The teacher creates learning experiences that make the discipline accessible and meaningful for pupils to assure mastery of the content.

**STANDARD # 5**

**Application of Content.**

The teacher understands how to connect concepts and use differing perspectives to engage pupils in critical thinking, creativity, and collaborative problem solving related to authentic local and global issues.

**STANDARD # 6**

**Assessment.**

The teacher understands and uses multiple methods of assessment to engage pupils in their own growth, to monitor pupil progress, and to guide the teacher's and pupil's decision making.

**STANDARD # 7**

**Planning for Instruction.**

The teacher plans instruction that supports every pupil in meeting rigorous learning goals by drawing upon knowledge of content areas, curriculum, cross-disciplinary skills, pedagogy, pupils, and pupils' communities.

**STANDARD # 8**

**Instructional Strategies.**

The teacher understands and uses a variety of instructional strategies to encourage pupils to develop a deep understanding of content areas and their connections, and to develop skills to apply knowledge in a meaningful way.

**STANDARD # 9**

**Professional Learning and Ethical Practice.**

The teacher engages in ongoing professional learning. The teacher uses evidence to continuously evaluate the teacher's practice, including the effects of the teacher's choices and actions on pupils, their families, other educators, and the community. The teacher adapts the teacher's practice to meet the needs of each pupil.

**STANDARD # 10**

**Leadership and Collaboration.**

The teacher seeks appropriate leadership roles and opportunity in order to take responsibility for pupil learning, to collaborate with pupils, their families, educators, and the community, and to advance the profession.

## MAJORS

- Construction Management Major, B.S. (<http://catalog.uwplatt.edu/undergraduate/business-industry-life-science-agriculture/industrial-studies/construction-management/>)
  - Construction Management Emphasis
  - Construction Safety Management Emphasis
- Industrial Technology Management Major, B.S. (<http://catalog.uwplatt.edu/undergraduate/business-industry-life-science-agriculture/industrial-studies/industrial-technology-management-bs/>)
  - Manufacturing Technology Management Emphasis
  - Occupational Safety Management Emphasis
- Technology and Engineering Education Major, B.S. (<http://catalog.uwplatt.edu/undergraduate/business-industry-life-science-agriculture/industrial-studies/technology-education-bs/>)

## TECHNICAL MINORS

- Construction Management (<http://catalog.uwplatt.edu/undergraduate/business-industry-life-science-agriculture/industrial-studies/building-construction-management-minor/>)
- Construction Safety (<http://catalog.uwplatt.edu/undergraduate/business-industry-life-science-agriculture/industrial-studies/construction-safety-minor/>)
- Drafting and Product Development Technology (<http://catalog.uwplatt.edu/undergraduate/business-industry-life-science-agriculture/industrial-studies/drafting-product-development-technology-minor/>)
- Industrial Control Systems Technology (<http://catalog.uwplatt.edu/undergraduate/business-industry-life-science-agriculture/industrial-studies/industrial-control-systems-technology-minor/>)
- Metals Processing Technology ([http://catalog.uwplatt.edu/undergraduate/business-industry-life-science-agriculture/industrial-studies/metals\\_processing-technology-minor/](http://catalog.uwplatt.edu/undergraduate/business-industry-life-science-agriculture/industrial-studies/metals_processing-technology-minor/))

- Occupational Safety (<http://catalog.uwplatt.edu/undergraduate/business-industry-life-science-agriculture/industrial-studies/occupational-safety-minor/>)
- Plastics Processing Technology (<http://catalog.uwplatt.edu/undergraduate/business-industry-life-science-agriculture/industrial-studies/plastics-processing-technology-minor/>)
- Production and Manufacturing Management (<http://catalog.uwplatt.edu/undergraduate/business-industry-life-science-agriculture/industrial-studies/production-manufacturing-management-minor/>)

## **FACULTY AND LECTURERS**

Additional information about the Faculty and Lecturers below may be found in the Faculty and Academic Staff (<http://catalog.uwplatt.edu/faculty-academic-staff/>) section of this catalog.

Albers, Mark A.

Bockenbauer, Gretchen

Carlson, Christopher

Durst, Julie

Elfering, Duane

Frear, Henry E.

Kaiser, Colleen R.

Metzloff, Kyle E.

Rimel, Eric W.

Sossaman, Travis A.

Swan, Marshall S.

White, Martin

Wiegman, Edward

Yunck, Steve A.