

Bachelor of Science in Design

Mission

The mission of the Bachelor of Science in Design is to prepare individuals to apply technical skills to the management and creation of working drawings and computer simulations for a variety of applications. This shall include, but will not be limited to, instruction in specification interpretation, dimensioning techniques, drafting calculations, material estimation, technical communications, computer applications, and interpersonal communications.

Vision

A program committed to the continuous improvement of processes that encourage excellence in teaching, research and creative activity, and community engagement.

Values

That people are our most valuable resource; that our success depends on the extent to which we treat them with dignity and respect and invest in their personal and professional growth; that all must be provided with equality of opportunity to pursue and advance in technology, management, and applied engineering careers; and that no individual should experience marginalization or non-inclusiveness of their contributions or talents because of visible or invisible differences. As examples, among others, these differences include age, belief system, disability status, ethnicity, gender, gender identity, gender expression, national origin, race, sexual orientation, socio-economic status, and any other visible or non-visible differences.

That we maintain the highest ethical, legal, and professional standards—that is, in integrity in all we do. Every decision we make and every action we take must be in the best interest of those we are chartered to serve.

That the development, application, and management of technology are fundamental elements of modern society.

That shared and reciprocal efforts of individuals, disciplines, organizations and communities are an effective means of meeting the diverse needs of our various constituencies. Design technology includes professional collaboration, as well as commitment to the education, supervision and mentoring of novice design professionals.

That commitment to excellence and integrity in our professional practices involves lifelong learning, adherence to our code of ethics, and the development and support of instructional programs based upon defined competencies.

That research is a fundamental tool of inquiry to guide our practices and interventions, and strengthen and promote our profession. Technology professionals have a responsibility to maintain a current understanding of research findings and participate in research that examines our practices.

In providing a safe and healthy environment.

In active, contributing participation in our communities.

Objectives

The BS in Design exists to prepare graduates who may work independently, who may work as a member of an engineering or architectural design team, who may supervise an engineering or architectural design team, or manage an engineering or architectural design project. As such, graduates shall be prepared for involvement with the:

Understanding of the theories and practices used in engineering or architectural design and in engineering or architectural design documentation.

Application of theories, concepts, and principles found in the humanities and the social and behavioral sciences, including a thorough grounding in communication skills.

Understanding of the theories and the ability to apply the principles and concepts of mathematics and science and the application of computer fundamentals.

Application of concepts derived from, and current skills developed in, a variety of technical and related disciplines.

The initial placement, job titles, job descriptions, and salaries of graduates shall be consistent with the concentration mission and objectives. Employer reaction to concentration graduates as employees shall be favorable. Summary statistics relating to placement rates as well as salary levels of concentration graduates shall be consistent with data available through the Bureau of Labor Statistics.

Outcomes

Mastery of the knowledge, techniques, skills, and modern tools (1): Graduates will exhibit an appropriate mastery of the knowledge, techniques, skills, and modern tools of their disciplines.

Ability to identify, analyze and solve technical problems (2): Graduates will exhibit an ability to identify, analyze and solve technical problems appropriate to their discipline.

Ability to analyze, design, optimize, and maintain systems or processes (3): Graduates will exhibit an ability to analyze, design, optimize, and maintain systems or processes appropriate to their discipline.

Ability to communicate effectively (4): Graduates will exhibit an ability to communicate effectively.

Ability to function effectively on teams (5): Graduates will exhibit an ability to function effectively on teams.

An understanding of professional, ethical, global, and social responsibilities (6): Graduates will exhibit an ability to understand professional, ethical, global, and social responsibilities.

Ability to manage and lead (7) Graduates will exhibit an ability to manage and lead.

Commitment to quality, timeliness, and continuous improvement (8): Graduates will exhibit a commitment to quality, timeliness, and continuous improvement.

Architectural Technology Concentration

Mission

To prepare technologists or technicians for employment in architectural and engineering firms or in similar endeavors as architectural designers, architectural drafters, project managers, computer-aided design technicians, or like occupations.

Objective

The architectural technologist will exhibit environmentally conscious design skills, knowledge, and professional behaviors and thus design to meet the needs of the present without compromising the ability of future generations to meet their own needs.

Outcomes

The architectural technologist will be competent in the following:

- Architectural drafting
- Computer-assisted drafting and design
- Construction methods and materials
- Environmental systems
- Building codes and standards
- Structural principles
- Cost estimation
- Planning documentation
- Visual communication skills
- Display production
- Architectural office management

Mechanical Technology Concentration

Mission

To prepare individuals for employment as engineering technicians, mechanical designers, research and development technicians, engineering lab technicians, equipment engineers, process technicians, design engineers, designers, engineering technical analysts, lab technicians, or like occupations.

Objective

The mechanical technologist will exhibit skills, knowledge, and professional behavior associated with the application theory and principles of mechanical engineering to modify, develop, and test machinery and equipment.

Outcomes

The mechanical technologist will be competent in the following:

- Mechanical drafting
- Computer-assisted drafting and design
- Manufacturing methods and materials
- Solid modeling and digital manufacturing
- Product planning and design
- Jig and fixture design
- Geometric dimensioning and tolerancing
- Rapid prototyping technologies
- Plant layout and material handling
- Quality control and quality assurance philosophies and techniques
- Visual communication skills

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