Bachelor of Science in Design

Department of Technology Systems

The BS in Design prepares graduates to function as design professionals, members of design teams, and design team leaders. Concentrations in **architectural technology** and **mechanical technology** are offered to satisfy the career goals of our students. Program graduates will possess related knowledge and technical, problem solving, and interpersonal skills upon completion of their graduation requirements. In addition to placement as design professionals, BS in Design graduates are also pursuing careers as applied engineers and architects.

Academic preparation of students in design focuses on contemporary design practices found in the various engineering disciplines as well as in architecture. Extensive use of technology is emphasized. Opportunities to gain real-life, hands-on experiences are plentiful.

The **Architectural Technology Concentration** includes instruction in drafting technologies utilizing a blended approach of hand developed work, CAD (computer-assisted design) and BIM (building information modeling). Course content will also provide exposure to reality capture, cloud collaboration, building codes/standards, cost analysis and management of project workflows. The degree prepares students to assist Architects, Engineers, Contractors and Construction Managers in developing plans and related documentation for the built environment. The degree will also better prepare students for easier transition into continued studies where a professional degree as a Registered Architect or Professional Engineer may be desired.

The **Mechanical Technology Concentration** prepares graduates for careers in applications of mechanical and machine system principles and development of automated systems and equipment. Graduates work as a part of an engineering team engaged in the design and development phases of a wide variety of projects involving all aspects of mechanical and machine systems.

Professional opportunities upon graduation are primarily found among the various engineering disciplines and in the field of architecture. The following professional titles are representative of the positions our graduates hold: Designer/CAD Operator, Designer III, Business Manager, Design Drafter, Project Engineer, Project Scheduler, Engineer Assistant, CAD Operator, Project Coordinator, CAD Draftsman, Senior Engineer, Systems Engineer III, Engineering Technician, Design Engineer, Project Scheduler, Architectural Designer.

For more information, please visit our website at cet.ecu.edu/techsystems. For more information about ECU admission, tuition, financial aid, housing, and campus tours, visit ECU's website at www.ecu.edu.

Contact us:

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Required Coursework (120 semester hours)

Design Core:

- Engineering Graphics I with Lab
- Computer-Aided Design and Drafting with Lab
- Materials and Processes Technology with Lab
- Statics and Strength of Materials
- Industrial Technology Applications of Computer Systems
- Electricity/Electronics Fundamentals with Lab
- Thermal and Fluid Systems with Lab
- Introduction to Statistical Process Control
- Technical Writing
- Industrial Safety
- Technology Project Management
- Cost and Capital Project Analysis
- Industrial Supervision
- Legal Environment of Business

Concentrations – **choose one**:

Architectural Technology Concentration:

- Building Systems and Codes
- Intro to Building Information Modeling (BIM) with lab
- Reality Capture with lab
- Architectural Drafting with lab
- Architectural Design and Drafting with lab
- Sustainable Design
- Architectural Visualization with lab
- Advanced Building Information Modeling (BIM) with lab
- Capstone
- **Choose one course:**
  - Additive Manufacturing with lab
  - Technical Presentations
  - Historic Interiors II
  - Internship
  - Special Topics
  - PLAN elective
- Environmental Biology or Environmental Geology*

Mechanical Technology Concentration:

- Engineering Graphics II with Lab
- Additive Manufacturing with Lab
- Geometric Dimensioning & Tolerancing with Lab
- Jig and Fixture Design with Lab
- Machine and Tool Design with lab
- Intro to Computer Numerical Control (CNC) with Lab
- Robotics in Computer Integrated Manufacturing with Lab
- Plant Layout and Materials Handling
- Electromechanical Systems with Lab
- Quality Assurance Concepts
- General Physics II with lab*

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The Association of Technology, Management, and Applied Engineering

General Education and Cognates:

English (6 hours)
Composition I
Composition II

Natural Science (7 hours)
General Physics I with lab
*Required Science by concentration:
General Physics II (if mech conc)
Envir Biol or Envir Geol (if arch conc)

Any General Ed Elective (3 hours)

Electives (5 hours)

Humanities & Fine Arts (9 hours)
Business or Professional Ethics
Fine Arts elective
Humanities/Fine Arts to total 9 hours

Health & Exercise (2, 1 hours)

Math (3 hours)
College Algebra

Social Science (9 hours)
Principles of Microeconomics
Introductory Psychology
Personnel and Industrial Psyc