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.

Your academic preparation in design focuses on contemporary design practices found in the various engineering disciplines as well as in architecture. Extensive use of technology is stressed. 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 application of machine and mechanical system principles to the development of automated systems and equipment. Graduates often 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 systems.

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

The BS in Design is accredited by the Association of Technology, Management, and Applied Engineering (ATMAE). 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.

Required Coursework (120 semester hours)

Design Core:
- Engineering Graphics I with Lab
- Computer-Aided Design and Drafting with Lab
- Engineering Graphics II with Lab
- Descriptive Geometry 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
- Thermomechanical Systems with Lab
- Introduction to Statistical Process Control
- Technical Writing
- Industrial Safety
- Technology Project Management
- Cost and Capital Project Analysis
- Industrial Supervision
- Quality Assurance Concepts

Concentrations – choose one:

Arhitectural Technology Concentration:
- Architectural Drafting with Lab
- Architectural Design and Drafting with Lab
- Sustainable Design with Lab
- Fundamentals of GIS
- Introduction to Planning Techniques
- Urban Form and Design
- Environmental Biology with Lab or Environmental Geology

Mechanical Technology Concentration:
- Rapid Prototyping with Lab
- Jig and Fixture Design with Lab
- Geometric Dimensioning & Tolerancing with Lab
- Intro to Computer Numerical Control (CNC) with Lab
- Robotics in Computer Integrated Manufacturing with Lab
- Plant Layout and Materials Handling
- General Physics II with lab

General Education and Cognates:

- English (6 hours) Humanities & Fine Arts (9 hours)
  - Composition I Business or Professional Ethics
  - Composition II Fine Arts elective
- Science (8 hours) Humanities/Fine Arts to total 9 hours
  - General Physics I Health & Exercise (2, 1 hours)
  - *See concentration requirements
- Social Science (9 hours) Math (5 hours)
  - Principles of Microeconomics College Algebra
  - Introductory Psychology Applied Trigonometry
  - Personnel and Industrial Psych Legal Environment of Business (3 hrs)
  - Electives (5 hours)

Any General Ed Elective (3 hours)

Contact us:
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