

Engineering Technology

Introduction

UW-Stout's Engineering Technology degree provides a broad background in industrial practices combined with an in-depth study in an engineering-related concentration. The program is designed to prepare graduates for industrial positions related to the engineering concentration area, with an appropriately broad background for later advancement into management positions. Typical entry-level positions include Design Engineer, Project Engineer, Plant Engineer, Process Engineer, Designer, Industrial Engineer, Production Scheduler and Applications Engineer. Students in the program develop knowledge and competencies in the concentration engineering area, materials and manufacturing methods, management/overview of the industrial organization, effective oral and written communication, and the application of physical science and mathematics principles to understand and solve technological and economic problems found in industry.

General Requirements

Bachelor of Science Degree

| | |
|----------------------------|-------------|
| Total for graduation | 124 credits |
| General Education | 51 credits |
| Major Studies | 23 credits |
| Concentrations | 50 credits |

Program Requirements

General Education

51 credits required

A. Communication Skills

8 credits

| | | |
|-----------|---------------------------------------------------|---|
| ENGL-101 | Freshman English – Composition or | |
| ENGL-111 | Freshman English – Honors I | 3 |
| ENGL-102 | Freshman English – Reading and Related Writing or | |
| ENGL-112 | Freshman English – Honors II | 3 |
| SPCOM-100 | Fundamentals of Speech..... | 2 |

B. Analytic Reasoning

6 credits

| | | |
|----------|-----------------------------|---|
| MATH-153 | Calculus I | 4 |
| STAT-130 | Elementary Statistics | 2 |

C. Health and Physical Education

2 credits

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts

9 credits

Courses must be from three or more areas including art history, creative arts, foreign language and culture, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences

9 credits

| | | |
|----------|---------------------------------|---|
| ECON-201 | General Economics or | |
| ECON-210 | Principles of Economics I | 3 |

Remaining courses must be from two or more areas including anthropology, geography, political science, psychology and sociology.

F. Natural Sciences (with Lab)

15 Credits

| | | |
|----------|---------------------------|---|
| CHEM-135 | College Chemistry I | 5 |
| PHYS-241 | College Physics I | 5 |
| PHYS-242 | College Physics II | 5 |

G. Technology

2 Credits

Major Studies

23 credits required

| | | |
|-----------|----------------------------------------------------------------|-----|
| BUACT-200 | Financial-Managerial Accounting – Engineering Technology | 2 |
| BUMKG-330 | Principles of Marketing..... | 3 |
| ENGL-415 | Technical Writing | 3 |
| INMGT-200 | Production/Operations Management | 3 |
| INMGT-400 | Organizational Leadership | 3 |
| MFGT-150 | Introduction to Engineering Materials | 3 |
| RD-100 | Introduction to Engineering Technology | 1 |
| RD-205 | Design for Industry..... | 3 |
| RC-381 | Principles of Occupational Risk Control/Safety | 2-3 |

Concentrations

50 credits required

Students elect one of the following concentrations.

Electrical Engineering Technology 50 credits**Core Requirements (45 credits)**

| | | |
|-----------|----------------------------------------------------------------|---|
| ENGGR-112 | Engineering Graphics Fundamentals..... | 3 |
| CS-144 | Computer Science I..... | 3 |
| CS-145 | Computer Science II..... | 3 |
| CS-244 | Data Structures..... | 4 |
| ELEC-204 | Electricity/Electronics Fundamentals..... | 3 |
| ELEC-260 | Electrical Circuits..... | 3 |
| ELEC-271 | Digital Logic and Switching..... | 3 |
| ELEC-272 | Solid State Electronics..... | 3 |
| ELEC-274 | Fundamentals of Microprocessors and Microcomputer Systems..... | 3 |
| ELEC-340 | Motors and Generators..... | 2 |
| ELEC-341 | Electrical and Mechanical Interface Devices..... | 3 |
| ELEC-382 | Electronic Communications..... | 3 |
| ELEC-XXX | Capstone Project..... | 3 |
| MATH-154 | Calculus II..... | 4 |
| POWER-260 | Introduction to Fluid Power..... | 2 |

Core Selectives (5 credits)

Select additional courses to complete 50 credits from a list provided by the program director.

Facilities 50 credits**Core Requirements (46 credits)**

| | | |
|-----------|--------------------------------------------------------|---|
| AEC-131 | Architectural Graphics..... | 3 |
| AEC-237 | Architectural Technology..... | 3 |
| AEC-438 | Contract Requirements and Specifications..... | 3 |
| AEC-452 | Environmental Systems – HVAC..... | 3 |
| AEC-453 | Environmental Systems – Plumbing and Electrical..... | 3 |
| CHEM-353 | Environmental Chemistry..... | 3 |
| ELEC-204 | Electricity/Electronics Fundamentals..... | 3 |
| INMGT-300 | Engineering Economics..... | 2 |
| INGMT-314 | Industrial Enterprise Practicum..... | 3 |
| INMGT-350 | Facilities Planning..... | 3 |
| INMGT-365 | Project Management..... | 3 |
| INMGT-450 | Maintenance Management..... | 3 |
| MFGT-251 | Fundamentals of Plastics Materials and Processing..... | 3 |
| MFGT-252 | Material Removal and Forming Processes..... | 3 |
| MFGT-253 | Joining and Casting Processes..... | 3 |
| POWER-260 | Introduction to Fluid Power..... | 2 |

Core Selectives (4 credits)

Select additional courses to complete 50 credits from a list provided by the program director.

Mechanical Design 50 credits**Core Requirements (45 credits)**

| | | |
|-----------|----------------------------------------------------|---|
| ENGGR-112 | Engineering Graphics Fundamentals..... | 3 |
| ENGGR-210 | Engineering Graphics Using Solid Modeling..... | 3 |
| ENGGR-280 | Engineering Graphics Applications..... | 3 |
| ENGGR-436 | Computer Assisted Design Problems..... | 3 |
| ELEC-204 | Electricity/Electronic Fundamentals..... | 3 |
| ELEC-341 | Electrical and Mechanical Interface Devices..... | 3 |
| MECH-290 | Mechanics of Solids..... | 3 |
| MECH-291 | Mechanics of Solids II..... | 3 |
| MECH-332 | Mechanical Design..... | 4 |
| MECH-337 | Mechanical Design Practicum..... | 3 |
| MECH-393 | Mechanics of Machinery II..... | 3 |
| MFGT-251 | Fundamentals of Plastics Materials Processing..... | 3 |
| MFGT-252 | Material Removal and Forming Processes..... | 3 |
| MFGT-253 | Joining and Casting Processes..... | 3 |
| POWER-260 | Introduction to Fluid Power..... | 2 |

Choose one option:

Option 1

| | | |
|--------|----------------------------|---|
| RD-320 | Prototype Development..... | 3 |
|--------|----------------------------|---|

Option 2

| | | |
|--------|-----------------------------------|---|
| RD-420 | Research and Development..... | 2 |
| RD-421 | Research and Development Lab..... | 1 |

Option 3

| | | |
|----------|-------------------------------------|---|
| MECH-437 | Mechanical Systems Development..... | 3 |
|----------|-------------------------------------|---|

Core Selectives (5 credits)

Select additional courses to complete 50 credits from a list provided by the program director.

Nanotechnology 50 credits**Core Requirements (41 credits)**

| | | |
|-----------|--------------------------------------------------------|---|
| ENGGR-112 | Engineering Graphics Fundamentals..... | 3 |
| ELEC-204 | Electricity/Electronics Fundamentals..... | 3 |
| ELEC-260 | Electrical Circuits..... | 3 |
| ELEC-271 | Digital Logic and Switching..... | 3 |
| ELEC-341 | Electrical and Mechanical Interface Devices..... | 3 |
| MECH-290 | Mechanics of Solids..... | 3 |
| MFGT-251 | Fundamentals of Plastics Materials and Processing..... | 3 |
| MFGT-252 | Material Removal and Forming Processes..... | 3 |
| MFGT-253 | Joining and Casting Processes..... | 3 |
| POWER-260 | Introduction to Fluid Power..... | 2 |
| NANO-101 | Exploration of Nanotechnology..... | 2 |
| NANO-301 | Nano-Structures..... | 3 |
| NANO-330 | Characterization Methods of Nanomaterials..... | 3 |
| NANO-401 | Nanotechnology Applications..... | 3 |
| NANO-X49 | Fabrication Co-op/Field Experience..... | 1 |

Core Selectives (9 credits)

Select additional courses to complete 50 credits from a list provided by the program director.

Plastics **50 credits****Core Requirements** (43 credits)

| | | |
|-----------|-------------------------------------------------|---|
| ENGGR-112 | Engineering Graphics Fundamentals..... | 3 |
| ENGGR-210 | Engineering Graphics Using Solid Modeling | 3 |
| ENGGR-436 | Computer Assisted Design Problems..... | 3 |
| CHEM-325 | Chemistry of Polymers..... | 4 |
| ELEC-204 | Electricity/Electronics Fundamentals | 3 |
| ENGGR-280 | Engineering Graphics Applications | 3 |
| MECH-290 | Mechanics of Solids I | 3 |
| MECH-337 | Mechanical Design Practicum..... | 3 |
| MFGT-250 | Introduction to Plastics | 3 |
| MFGT-252 | Material Removal and Forming Processes..... | 3 |
| MFGT-253 | Joining and Casting Processes..... | 3 |
| MFGT-342 | Thermoform and Blow-Molding Technology | 3 |
| MFGT-341 | Injection Molding Technology | 3 |
| MFGT-343 | Extrusion Technology | 3 |
| PHYS-321 | Statics and Strength of Materials | 4 |
| POWER-260 | Introduction to Fluid Power..... | 2 |

Core Selectives (8 credits)

Select additional courses to complete 50 credits from a list provided by the program director.

Production Operations **50 credits****Core Requirements** (43 credits)

| | | |
|-----------|------------------------------------------------------------|---|
| ENGGR-112 | Engineering Graphics Fundamentals..... | 3 |
| BUMKG-337 | Procurement, Sourcing and Supply Chain Management | 3 |
| BUMKG-438 | Principles of Logistics | 3 |
| ELEC-204 | Electricity/Electronics Fundamentals | 3 |
| INMGT-300 | Engineering Economy | 3 |
| INMGT-305 | Resource Planning and Materials Management | 3 |
| INMGT-314 | Industrial Enterprise Practicum..... | 3 |
| INMGT-320 | Quality Tools | 3 |
| INMGT-350 | Facilities Planning..... | 3 |
| INMGT-405 | Resource Planning and Materials Management Practicum | 2 |
| INMGT-440 | Lean Enterprise | 3 |
| MFGT-251 | Fundamentals of Plastics Materials and Processing..... | 3 |
| MFGT-252 | Material Removal and Forming Processes..... | 3 |
| MFGT-253 | Joining and Casting Processes..... | 3 |
| POWER-260 | Introduction to Fluid Power..... | 2 |

Core Selectives (7 credits)

Select additional courses to complete 50 credits from a list provided by the program director.