Recommended Industrial Management and Technology Course sequence

Undergraduate Catalog - 2016/2017
Total undergraduate credits 120

Freshman (Fall)	
3	TECH 211 - Computer-Aided-Design
3	MATH155 - Trigonometry
3	CHEM 110 - General Chemistry I
1	CHEM 111 - General Chemistry I Lab
3	ENGL103 - Composition I
3	General Education Requirement 1
16	

Freshman (Spring)	
3	COMS100 - Communications
3	ENGL203 - Composition I
3	PHYS 150 - Physics
1	PHYS 151 - Physics Lab
3	General Education Requirement 2
3	General Education Requirement 3
16	

Sophomore (Fall)	
3	Technology Area of Study 1
3	TECH 265 - Basic Manufacturing Processes
3	STAT 208 - Basis Statistics or STAT 301 - Elementary Statistics
3	TECH175 - Electricity and Electrical Fund.
1	TECH175A - Electricity and Electrical Fund. Lab
3	TECH 434 - Human Factors in Accident Prevention
16	

Sophomore (Spring)	
3	General Education Requirement 4
3	TECH 404 - Supervision in Industry
3	ACCY 288 - Fund of Acctg or ACCY 206 - Intro Financial Acctg
3	Technology Area of Study 2
3	Ind Mgmt & Tech Elective 1
15	

Junior (Fall)	
3	TECH 391 - Industrial Quality Control
3	TECH 429 - Plant location, Layout, and Materials Handling
3	Technology Area of Study 3
3	General Education Requirement 5
3	General Elective
15	

Junior (Spring)	
3	TECH 406 - Facilities Management Technology
3	TECH 415 - Applied Industrial Experimental Analysis
3	Engl 308 - Tech Writing or Mgmt 346 - Business Comms
3	Technology Area of Study 4
3	Technology Area of Study 5
15	

Senior (Fall)	
3	TECH 492 - Manufacturing Distribution Applications
3	Technology Area of Study 6
3	Ind Mgmt & Technology Elective 2
3	Technology Area of Study 7
3	Technology Elective 1
15	

Senior (Spring)	
3	Technology Elective 2
3	Technology Area of study 8
3	TECH 496 - Industrial Project Management
3	General Elective
12	

Industrial Management and Technology Electives (Choose 2)

TECH 305 - Green Technologies, TECH 402 - Industrial Training and Evaluation, TECH 419 - Energy Auditing, TECH 442 - Work Simplification & Measurement, TECH 443 - Engineering Economy, TECH 444 - Production Control Systems, TECH 484 - Energy Management

Areas of Concentration within the Industrial Management & Technology Program

Computer-Aided-Design (CAD)

TECH 262 - Machine Production Processes
TECH 311 - Computer-Aided Modeling
TECH 312 - Design Dimensioning and Tolerancing
TECH 313 - Product Design and Development for Manufacturability
TECH 365 - Metrology
TECH 414 - Computer-Aided Machine Design
Two of the following
- TECH 260 - Metal Fabrication Processes
- TECH 314 - Tool and Die Design
- TECH 344 - Materials and Processes in the Plastics Industry
- TECH 345 - Plastic Molding Processes
- TECH 417 - Design for Energy Efficienct and Green Materials
- TECH 420 - Computer-Integrated Manufacturing
- TECH 427 - Testing Methods, Procedures, & Selection of Sustainable Plastics

Environmental Health and Safety

TECH 231 - Safety Programs
TECH 245 - Pollution Prevention & Sustainable Production
TECH 436 - Design and Administration of Ind Safety Programs
TECH 437 - Fundamentals of Industrial Hygiene
TECH 441 - Hazard Control in Industrial Operations
TECH 481 - Ergonomics
Two of the following
- TECH 409 - Internship
- TECH 411 - Env Sustainability Practies for Ind Ops
- TECH 432 - Disaster Preparedness
- TECH 433 - Toxicology for Industry
- TECH 435 - Legal Aspects of Safety
- TECH 438 - Safety in Transportation systems
- TECH 485 - Risk Management

Manufacturing Technology

TECH 260 - Metal Fabrication Processes
TECH 262 - Machine Production Processes
TECH 311 - Computer-Aided Modeling
TECH 313 - Product Design and Development for Manufacturability
TECH 365 - Metrology
TECH 420 - Computer-Integrated Manufacturing
Two of the following
- TECH 312 - Design Dimensioning and Tolerancing
- TECH 314 - Tool and Die Design
- TECH 344 - Materials and Processes in the Plastics Industry
- TECH 409 - Internship
- TECH 417 - Design for Energy Efficienct and Green Materials
- TECH 427 - Testing Methods, Procedures, & Selection of Sustainable Plastics

Electronics Technology

TECH 270 - Electrical Fundamentals and Circuit Analysis I
TECH 270A - Electrical Fundamentals and Circuit Analysis Lab I
TECH 276 - Electronics I
TECH 276A - Electronics I Lab
TECH 277- Digital Logic Design
TECH 277A - Digital Logic Design Lab
TECH 295 - Manufacturing Computer Applications or CSCI 215 - Visual Basic
TECH 377 - Microprocessors and Interfacing
TECH 377A - Microprocessors and Interfacing Lab
Two of the following
- TECH 409 - Internship
- TECH 425 - Programmable Electronic Controllers
- TECH 426 - Electric Systems Applications for Alternative Energy
- TECH 430 - Microcontrollers Interfacing and Applications
- TECH 473 - Advanced Digital Design

Notes:

→ A Technical elective course may be any course offered within the Department of Technology, as determined with consent of the faculty advisor.

→ A general elective course may be any course offered from any department on campus.

2016/2017 NIU Undergraduate Bulletin
Energy and Environmental Technology
Credits Required for Graduation

Name _____
ZID# _____
Advisor _____

Note: Semester offering and prerequisites may change, the current bulletin and schedule should be consult
Legend - **p** - prerequisite **c**-corequisite **f** - fall semester **s** - spring semester

☐ Engl 103
RHETORIC AND COMPOSITION I - **(f,s)**

☐ Engl 203 **p**:Eng 103
RHETORIC AND COMPOSITION II - **(f,s)**

☐ Coms 100
FUNDAMENTALS OF ORAL COMM **-(f,s)**

☐ English 308 or Mgmt 346
TECHNICAL WRITING OR BUSINESS COMMUNICATIONS **(f,s)**

☐ Chem 110 (or Chem210T)
GENERAL CHEMISTRY I **-(f,s)**

☐ Chem 111 (or Chem212)
GENERAL CHEMISTRY I LAB **-(f,s)**

☐ Phys 150 or (**Phys210** - p:M155)
PHYSICS - **(f,s)**

☐ Phys 151
PHYSICS LAB- **(f,s)**

☐ Stat 208 (or Stat 301)
STATISTICS - **(f,s)**

☐ Math 155 **p**:Math110 or placement test
TRIGONOMETRY - (f,s)

☐ Math229 **p**:Math155 or placement test
CALCULUS I - (f,s)

Required Technology Courses

☐ Tech175 **p:**Math155, Phys 150A or Phys 210
ELECTRICITY AND ELECT FUND **-(f,s)**

☐ Tech175a **c**:TECH175
ELECTRICITY AND ELECT FUND LAB **-(f,s)**

☐ Tech 211
CAD/COMP-AIDED MODELING **-(f,s)**

☐ Tech 231
SAFETY PROGRAMS - **(f)**

☐ Tech 245
POLLUTION PREVENTION, & SUSTAINABLE PROD **(s)**

☐ Tech 265 **p:**Math 155
BASIC MANUFACTURING PROCESSES **-(f, s)**

☐ Tech 295 **p:**M155,T265 **or** Csci 215 **p:**M110
MANUFACTURING COMPUPTER APPS OR VISUAL BASIC
or Csci 240 p: Math 110 or 155 or 229
COMPUTER PROGRAMMING IN C++ **-(f,s)**

☐ Tech 305 **p:** Math 155, Chem 110
GREEN TECHNOLOGIES **-(f, s)**

☐ Tech 326 **p:** M 229; Phys 150A or 210
FLUID POWER TECHNOLOGY **-(s)**

☐ Tech 391 **p:**Math155, Stat208
INDUSTRIAL QUALITY CONTROL **- (f, s)**

☐ Tech 406 **p:** Math 155, Tech 211
FACILITIES MANAGEMENT TECHNIOLOGY **(s)**

☐ Tech 411 **p:** M155; Tech 245 or Tech 305
ENV SUSTAINABILITY PRACTICES FOR IND OPS **-(f)**

☐ Tech 416 **p:**Math155, Phys 150/151 or 210
HEATING, VENTILATING, AND AIR CONDITIONING

☐ Tech 417 **p:**Math 155, Phys 150/151 or 210
DESIGN FOR ENERGY EFFICIENCY & GREEN MATERIALS

☐ Tech 419 **p:**Math 155
ENERGY AUDITING

☐ Tech 426 **p:**Math 155, Tech 175 or Phys 211
ELECTRIC SYS APPS FOR ALTERNATIVE ENERGY

☐ Tech 443 **p**: Math 155
ENGINEERING ECONOMY **-(s)**

☐ Tech 445 **p**: Math 155, Chem 110 or 210
IND ENERGY UTILIZATION & ENV IMPACTS **-(f)**

☐ Tech 496 **p:** (below)
INDUSTRIAL PROJECT MANAGEMENT **(f, s)**
p: Engl 308 or Mgmt 346; Senior Status; Tech 419; Tech 416

Requirements outside Technology

9 semester hours

☐ Envs 304
ENVIRONMENTAL LAW, POLICY, & ECONOMICS **(f)**

☐ Geog 256
MAPS AND MAPPING - **(f, s)**

☐ Geog 359 **p:** Geog 256 or Geog 352
INTRO TO GEOGRAPHIC INFO SYSTEMS - **(f, s)**

☐ Elective (3 hrs)

☐ Elective (3 hrs)

Technology Electives

Choose 2 courses (6 hrs required)

☐ Envs 301
ENVIRONMENTAL SCIENCES I:PHYSICAL SY

☐ Envs 302 **p**: Envs 301
ENVIRONMENTAL SCIENCES II:BIOLOGICAL SY

☐ Geog 455
LAND-USE PLANNING

☐ Geog 459 **p:**Geog 359
GEOGRAPHIC INFORMATION SYSTEMS

☐ Tech 311 **p**: Tech 211 C or better
COMPUTER-AIDED MODELING **-(s)**

☐ Tech 409 **p:** Junior Standing
INTERNSHIP

☐ Tech 415 **p:** Math 155, Stat 208
APPLIED INDUSTRIAL EXPERIMENTAL ANALYSIS **(s)**

☐ Tech 425 **p:** M155, T175/A; T265; T295 or Csci 2
MICRO CONTROLLERS INTERFACING AND APPS **-(f, s)**

☐ Tech 427 **p:** T265 or T344, Chem 110
TEST METH, PROCED, & SELECT OF SUSTAIN PLASTICS

☐ Tech 436 **p**: T231 or T245; T434
DESIGN & ADMIN OF IND SAFETY PROGRAMS

☐ Tech 479 **p**: see My NIU
SPECIAL TOPICS IN EGR TECH

General Education Knowledge Domain Courses - See CEET website or online Undergraduate Catalog

Creativity & Critical Analysis - 2 courses one course must be from VPA

☐ _____ (3)

☐ _____ (3)

Society & Culture - 2 courses

☐ _____ (3)

☐ _____ (3)

From any of the Knowledge Domain Areas

☐ _____ (3)