College of Technology and Computer Science

Department of Technology Systems

Hamid Fonooni, Interim Chair, Suite 202 Science and Technology Building

Admission

Upon admission to the university, students may declare a major in one of the following degree programs: design, industrial distribution and logistics, industrial engineering technology, or information and computer technology. The technology systems degree programs are accredited by the National Association of Industrial Technology. The minimum degree requirement is 126 s.h. of credit.

Students who have an associate degree from an approved technical program can be admitted directly into the department’s programs but must either transfer or take courses that meet the core technical content in the programs. Although any department degree can be entered by transfer students, the BS in industrial technology is designed specifically to meet a broad range of needs of transfer students from community colleges. Students transferring credits without an associate’s degree will have their previous courses individually evaluated for program credit.

Those ECU students intending to transfer to a technology systems degree program from other campus programs must have at least a 2.0 GPA.

BS in Design

Robert A. Chin, Coordinator, 207 Science and Technology Building

The design program is accredited by the National Association of Industrial Technology. Minimum degree requirement is 126 s.h. credit as follows:

1. Foundations curriculum requirements (See Section 4, Foundations Curriculum Requirements for all Baccalaureate Degree Programs), including those listed below - 42 s.h.
   - COMM 2410. Public Speaking (3) (F,S,SS) (FC:FA) or COMM 2420. Business and Professional Communication (3) (F,S,SS) (FC:FA)
   - ECON 2113. Principles of Microeconomics (3) (F,S,SS) (FC:SO)
   - MATH 1065. College Algebra (3) (F,S,SS) (FC:MA) (P: Appropriate score on mathematics placement test)
   - PHYS 1250, 1260. General Physics (3,3) (F,S,SS) (FC:SC) (P for 1250: MATH 1065 or 1066; P for 1260: PHYS 1250)
   - PHYS 1251, 1261. General Physics Laboratory (1,1) (F,S,SS) (FC:SC) (C for 1251: PHYS 1250 or 1230; C for 1261: PHYS 1260 or 2260)
   - PSYC 1000. Introductory Psychology (3) (F,S,SS) (FC:SO)
   - PSYC 3241. Personnel and Industrial Psychology (3) (F,S,SS) (FC:SO) (P: PSYC 1000 or 1060)
2. Core - 53 s.h.
   - DESN 2034, 2035. Engineering Graphics I (3,0) (F,S) (P: ITEC 2000 or MIS 2223)
   - DESN 2036, 2037. Computer-Aided Design and Drafting (3,0) (F,S) (P: DESN 2034)
   - DESN 3032, 3033. Engineering Graphics II (3,0) (S) (P: DESN 2036)
   - DESN 4030, 4031. Descriptive Geometry (3,0) (S) (P: DESN 3032; MATH 1074)
   - FINA 2244. Legal Environment of Business (3) (F,S,SS)
   - IENG 2020, 2021. Materials and Processes Technology (3,0) (WI*) (F,S) (P: ITEC 2000 or MIS 2223)
   - ITEC 2000. Industrial Technology Applications of Computer Systems (3) (F,S) or MIS 2223 Introduction to Computers (3) (F,S,SS)
   - ITEC 2054, 2055. Electricity/Electronics Fundamentals (3,0) (F,S) (P: MATH 1065 or 1066 or 1085 or 2119)
   - ITEC 2080, 2091. Thermal and Fluid Systems (3,0) (F,S) (P: MANF 2020)
   - ITEC 2090, 2091. Electromechanical Systems (3,0) (F,S) (P: ITEC 2054)
   - ITEC 3200. Introduction to Statistical Process Control (3) (F,S) (P: MATH 1065
or 1066 or equivalent) or MATH 2283. Statistics for Business (3) (F,S,SS) (FC:MA)
ITEC 3290. Technical Writing (3) (WI) (F,S,SS) (P: ENGL 1200)
ITEC 3292. Industrial Safety (3) (F,S) (P: Junior standing)
ITEC 3300. Technology Project Management (3) (F,S) (WI) (P: ENGL 1200; ITEC 2000 or MIS 2223)
ITEC 3800. Cost and Capital Project Analysis (3) (S) (P: MATH 1065) or FINA 3004. Survey of Financial Management (3) (F,S,SS)
ITEC 4293. Industrial Supervision (3) (WI) (F,S) (P: Senior standing or consent of instructor) or MGMT 3202. Fundamentals of Management (3) (F,S,SS)
ITEC 4300. Quality Assurance Concepts (3) (F,S) (P: ITEC 3200 or MATH 2283)
MATH 1074. Applied Trigonometry (2) (F,S,SS) (P: MATH 1065)

3. Concentration area (Choose one) 18 s.h.

Architectural Technology:
DESN 3030, 3031. Architectural Drafting (3,0) (F,S) (P: DESN 2034 or IDSN 1281)
DESN 3036, 3037. Architectural Design and Drafting (3,0) (F) (P: DESN 2036, 3030)
DESN 3038, 3039. Sustainable Design (3,0) (S) (P: DESN 2036, 3030)
PLAN 3021. Introduction to Planning Techniques (3) (F)
PLAN 3051. Introduction to GIS in Planning (3) (F)
PLAN 4003. Urban Form and Design (3) (S)

Mechanical Technology:
DESN 3230, 3231. Rapid Prototyping (3,0) (S) (P: DESN 3032; IENG 2076)
DESN 3234, 3235. Jig and Fixture Design (3,0) (F) (P: DESN 3032; ITEC 2090; IENG 2076)
DESN 3236, 3237. Geometric Dimensioning and Tolerancing (3,0) (F) (P: DESN 3032; MATH 1074; ITEC 3200 or MATH 2283)
IENG 2076, 2077. Introduction to Computer Numerical Control (CNC) (3,0) (F,S) (P: DESN 2034)
IENG 3020, 3021. Introduction to Computer Integrated Manufacturing (3,0) (S) (P: ITEC 2090; MANF 2076)
IENG 3300. Plant Layout and Materials Handling (3) (F) (P: MANF 2020)

4. Approved electives to complete requirements for graduation. = 13 s.h.

BS in Industrial Distribution and Logistics

Leslie R. Pagliari, Coordinator, 402 Science and Technology Building

Minimum degree requirement is **126 s.h.** of credit as follows:

1. Foundations curriculum requirements (See Section 4, Foundations Curriculum Requirements for all Baccalaureate Degree Programs), including those listed below. 42 s.h.
COMM 2410. Public Speaking (3) (F,S,SS) (FC:FA) or COMM 2420. Business and Professional Communication (3) (F,S,SS) (FC:FA)
ECON 2113. Principles of Microeconomics (3) (F,S,SS) (FC:SO)
MATH 1065. College Algebra (3) (F,S,SS) (FC:MA) (P: Appropriate score on mathematics placement test)
PSYC 1000. Introductory Psychology (3) (F,S,SS) (FC:SO)
PSYC 2420. Personnel and Industrial Psychology (3) (F,S,SS) (FC:SO) (P: PSYC 1000 or 1060)

2. Core - 57 s.h.
IDIS 3780, 3781. Warehousing and Materials Handling (3,0) (F) (P: IDIS 2771)
IDIS 3785, 3786. Global Logistics (3) (F) (P: IDIS 2771, 3815)
IDIS 3790. Technical Presentations for Industry (3) (F,S) (P: ITEC 2000 or MIS 2223)
IDIS 3795, 3796. Distributor Sales and Branch Management (3,0) (F,S) (P: IDIS 2771)
IDIS 3800. Transportation Logistics (3) (S) (P: IDIS 2771)
IDIS 3805. Purchasing Logistics (3) (F,S) (P: IDIS 2771)
IDIS 3815. Supply Chain Logistics (3) (F,S) (P: IDIS 2771)
IDIS 3825. Strategic Pricing for Distributors (3) (S) (P: IDIS 2771, ACCT 2101)
IDIS 3830. ERP Systems for Distributors (3) (F,S) (P: IDIS 3780, 3781, 3815)
IDIS 3835. Security and Risk Analysis for Distributors (3) (S) (P: IDIS 3815)
IDIS 4800. Distribution and Logistics Capstone (3) (F,S) (P: Junior standing; IDIS 3790, ITEC 3290, 3300; IDIS major)
IDIS 4802. Distribution Research (3) (F,S) (P: IDIS 4800; senior standing)
ITEC 3290. Technical Writing (3) (WI) (F,S) (P: ENGL 1200)
ITEC 3292. Industrial Safety (3) (F,S) (Formerly EHST 3292) (P: Junior status)
ITEC 3300. Technology Project Management (3) (WI) (F,S) (P: ENGL 1200; ITEC 2000 or MIS 2223)
ITEC 3800. Cost and Capital Project Analysis (3) (S) (P: MATH 1065)
ITEC 4293. Industrial Supervision (3) (WI) (F,S) (P: Senior status; or consent of instructor)
ITEC 4300. Quality Assurance Concepts (3) (F,S) (P: ITEC 3200 or MATH 2283)

3. Cognates - 12 s.h.
   ACCT 2101. Survey of Financial and Management Accounting (3) (F,S) (P: MATH 1065)
   FINA 2244. Legal Environment of Business (3) (F,S,SS) (P: MATH 1065 or equivalent) or ITEC 3200. Introduction to Statistical Process Control (3,0) (F,S) (P: MATH 1065 or 1066 or equivalent)
   ITEC 2000. Industrial Technology Applications of Computer Systems (3) (F,S) or
   MIS 2223. Introduction to Computers (3) (F,S,SS)

4. Electives to complete requirements for graduation. - 15 s.h.

BS in Industrial Engineering Technology
Merwan B. Mehta, Coordinator, 212 Science and Technology Building

Minimum degree requirement is 126 s.h. of credit as follows:

1. Foundations curriculum requirements (See Section 4, Foundations Curriculum Requirements for all Baccalaureate Degree Programs), including those listed below. 42 s.h.
   COMM 2410. Public Speaking (3) (F,S,SS) (FC:FA) or COMM 2420. Business and Professional Communication (3) (F,S,SS) (FC:FA)
   ECON 2113. Principles of Microeconomics (3) (F,S,SS) (FC:SO)
   MATH 1065. College Algebra (3) (F,S,SS) (FC:MA) (P: Appropriate score on mathematics placement test) or MATH 1066. Applied Mathematics for Decision Making (3) (F,S,SS) (FC:MA) (P: Appropriate score on mathematics placement test or approval of dept chair)
   PHYS 1250, 1260. General Physics (3,3) (F,S,SS) (FC:SC) (P for 1250: MATH 1065 or 1066; P for 1260: PHYS 1250)
   PHYS 1251, 1261. General Physics Laboratory (1,1) (F,S,SS) (FC:SC) (C for 1251: PHYS 1250 or 2350; C for 1261: PHYS 1260 or 2260)
   PSYC 1000. Introductory Psychology (3) (F,S,SS) (FC:SO)
   PSYC 3241. Personnel and Industrial Psychology (3) (F,S,SS) (FC:SO) (P: PSYC 1000 or 1060)

2. Core - 66 s.h.
   DESN 2034, 2035. Engineering Graphics I (3,0) (F,S) (P: ITEC 2000 or MIS 2223)
   DESN 2036, 2037. Computer-Aided Design and Drafting (3,0) (F,S) (P: DESN 2034)
   IENG 2020, 2021. Materials and Processes Technology (3,0) (WI*) (F,S) (P: ITEC 2000 or MIS 2223)
   IENG 2076, 2077. Introduction to Computer Numerical Control (CNC) (3,0) (F,S) (P: DESN 2034)
   IENG 3020, 3021. Introduction to Computer Integrated Manufacturing (3,0) (S) (P: ITEC 2090; IENG 2076)
   IENG 3300. Plant Layout and Materials Handling (3) (F) (P: IENG 2020)
   IENG 3600. Statics and Strength of Materials (3) (F) (P: IENG 2020, MATH 2119)
   IENG 4020. Manufacturing System Planning (3) (F) (P: ITEC 3200, MATH 2119)
   IENG 4023. Advanced Manufacturing Systems (3) (S) (P: IENG 3300)
   IENG 4092. Operation Research (3) (S) (P: IENG 3300, MATH 2119)
   IENG 4200. Work Methods and Ergonomic Analysis (3) (S) (P: IENG 4020)
   IENG 4900. Capstone (3) (F,S) (P: Senior Standing)
   ITEC 2000. Industrial Technology Applications of Computer Systems (3) (F,S)
   ITEC 2054, 2055. Electricity/Electronics Fundamentals (3,0) (F,S) (P: MATH 1065 or 1066 or 1085 or 2119)
   ITEC 2080, 2081. Thermal and Fluid Systems (3,0) (F,S) (P: IENG 2020)
   ITEC 2090, 2091. Electromechanical Systems (3,0) (F,S) (P: ITEC 2054)
   ITEC 3290. Technical Writing (3) (WI) (F,S,SS) (P: ENGL 1200)
   ITEC 3292. Industrial Safety (3) (F,S) (P: Junior standing)
   ITEC 3300. Technology Project Management (3) (F,S) (WI) (P: ENGL 1200; ITEC 2000 or MIS 2223)
   ITEC 3800. Cost and Capital Project Analysis (3) (S) (P: MATH 1065)
   ITEC 4293. Industrial Supervision (3) (WI) (F,S) (P: Senior standing or approval of instructor)
   ITEC 4300. Quality Assurance Concepts (3) (F,S) (P: ITEC 3200 or MATH 2283)

3. Cognates - 12 s.h.
   CHEM 1020. General Descriptive Chemistry (4,0) (F,S)
   ITEC 3200. Introduction to Statistical Process Control (3) (F,S) (P: MATH 1065 or 1066 or equivalent)
   MATH 1074. Applied Trigonometry (2) (F,S,SS) (P: MATH 1065)
   MATH 2119: Elements of Calculus (3) (F,S,SS) (P: MATH 1065 with minimum grade of C.)
4. Approved electives to complete requirements for graduation.

**BS in Industrial Technology**

David L. Batts, Coordinator, 230 Slay Building

Student must have an associate degree from an approved technical program. Minimum degree requirement is 126 s.h. of credit as follows. Students must complete at ECU a minimum of 42 s.h. credit of upper division core and concentration courses. Industrial technology courses completed at ECU and transfer courses must total at least 66 s.h. All students pursuing a bachelor of science in industrial technology through distance education (online) are required to complete ITEC 3000 in their initial semester of enrollment at East Carolina University. For distance education (online) students only, ITEC 3000 will fulfill 3 s.h. of the required 27 s.h. in their chosen concentration area. ITEC 3100, 4100 or any course that does not meet as a class may not be used as upper division core or concentration courses.

1. Foundation curriculum requirements (See Section 4, Foundations Curriculum Requirements for all Baccalaureate Degree Programs), including those listed below. 42 s.h.
   - COMM 2410. Public Speaking (3) (F,S,SS) (FC:FA) or COMM 2420. Business and Professional Communication (3) (F,S,SS) (FC:FA)
   - ECON 2113. Principles of Microeconomics (3) (F,S,SS) (FC:SO)
   - MATH 1065. College Algebra (3) (F,S,SS) (FC:MA) (P: Appropriate score on mathematics placement test) or MATH 1066. Applied Mathematics for Decision Making (3) (F,S,SS) (FC:MA) (P: Appropriate score on mathematics placement test or approval of dept chair)
   - PSYC 1000. Introductory Psychology (3) (F,S,SS) (FC:SO)
   - PSYC 3241. Personnel and Industrial Psychology (3) (F,S,SS) (FC:SO) (P: PSYC 1000 or 1060)

2. Lower Division Core.24 s.h.
   - Transfer technical courses up to 24 s.h. or approved technical courses.

3. Upper Division Core.15 s.h.
   - ITEC 3200. Introduction to Statistical Process Control (3) (F,S) (P: MATH 1065 or 1066 or equivalent)
   - ITEC 3290. Technical Writing (3) (WI) (F,S,SS) (P: ENGL 1200)
   - ITEC 3300. Technology Project Management (3) (WI) (F,S) (P: ENGL 1200; ITEC 2000 or MIS 2223)
   - ITEC 3800. Cost and Capital Project Analysis (3) (S) (P: MATH 1065)
   - ITEC 4293. Industrial Supervision (3) (WI) (F,S) (P: Senior standing or approval of instructor)

4. Concentrations (choose one).27 s.h.

**Architectural Technology**

- DESN 3030, 3031. Architectural Drafting (3,0) (F,S) (P: DESN 2034 or IDSN 1281)
- DESN 3032, 3033. Engineering Graphics II (3,0) (S) (P: DESN 2036)
- DESN 3036, 3037. Architectural Design and Drafting (3,0) (F) (P: DESN 2036, 3030)
- DESN 3038, 3039. Sustainable Design (3,0) (S) (P: DESN 2036, 3030)
- PLAN 3021. Introduction to Planning Techniques (3) (F)
- PLAN 3051. Introduction to GIS in Planning (3) (F)
- PLAN 4003. Urban Form and Design (3) (S) (P: Approved technical electives (6 s.h.)

**Bioprocess Manufacturing**

- ITEC 3292. Industrial Safety (3) (F,S) (P: Junior standing)
- ITEC 4150. Microbiology for Industrial Processing (3) (S EY) (P: Admitted to bioprocess manufacturing concentration within BS industrial technology degree)
- ITEC 4250. Engineering for Food Safety and Sanitation (3) (F OY) (P: Admitted to bioprocess manufacturing concentration within BS industrial technology degree)
- ITEC 4300. Quality Assurance Concepts (3) (F,S) (P: ITEC 3200 or MATH 2283)
- ITEC 4350. Separation Techniques for Industrial Processing (3) (S OY) (P: Admitted to bioprocess manufacturing concentration within BS industrial technology degree)
- ITEC 4450. Waste Treatment Techniques for Industrial Processing (3) (S OY) (P: Admitted to bioprocess manufacturing concentration within BS industrial technology degree)
- ITEC 4550. Quality in Regulatory Environments (3) (F EY) (P: Admitted to bioprocess manufacturing concentration within BS industrial technology degree)
- Approved technical electives (6 s.h.)

**Distribution and Logistics**

- IDIS 2771. Introduction to Distribution and Logistics (3) (F,S)
- IDIS 3785. Global Logistics (3) (F,S) (P: IDIS 2771)
- IDIS 3790. Technical Presentations for Industry (3) (F,S) (P: ITEC 2000 or MIS 2223)
IDIS 3800. Transportation Logistics (3) (S) (P: IDIS 2771)
IDIS 3805. Purchasing Logistics (3) (F,S) (P: IDIS 2771)
IDIS 3815. Supply Chain Logistics (3) (F,S) (P: IDIS 2771)
IDIS 3825. Strategic Pricing for Distributors (3) (S) (P: ACCT 2101; IDIS 2771)
IDIS 3835. Security and Risk Analysis for Distributors (3) (S) (P: IDIS 3815)
Approved technical electives (3 s.h.)

Industrial Supervision
IDIS 2771. Introduction to Distribution and Logistics (3) (F,S)
IDIS 3790. Technical Presentations for Industry (3) (F,S) (P: ITEC 2000 or MIS 2223)
IDIS 3815. Supply Chain Logistics (3) (F,S) (P: IDIS 2771)
ITEC 3292. Industrial Safety (3) (F,S) (P: Junior standing)
ITEC 4300. Quality Assurance Concepts (3) (F,S) (P: ITEC 3200 or MATH 2283)
IENG 3300. Plant Layout and Materials Handling (3) (F) (P: IENG 2020)
IENG 4200. Work Methods and Ergonomic Analysis (3) (S) (P: IENG 4020)
Approved technical electives (6 s.h.)

Information and Computer Technology
Choose nine courses from below (27 s.h.):

ICTN 2000. Introduction to Telecommunications (3) (F)
ICTN 2530, 2531. Network Environment II (3,0) (F,S) (P: ICTN 1500)
ICTN 2900, 2901. Introduction to Network Security (3,0) (F) (P: ICTN 2154)
ICTN 3250, 3251. Internetwork Routing Technology (3,0) (F) (P: Current CCNA certification)
ICTN 3530, 3531. Network Environment II (3,0) (S) (P: ICTN 1500)
ICTN 3540, 3541. Network Environment III (3,0) (F) (P: ICTN 2510, 2530)
ICTN 3900, 3901. Web Services Management (3,0) (F) (P: ICTN 2510, 2530)
ICTN 4010, 4011. User Application Management and Emerging Technologies (3,0) (F) (P: ICTN 2510, 2530)
ICTN 4040. Communication Security (3) (S) (P: Senior standing and ICTN 2154)
ICTN 4064. Regulations and Policies (3) (S) (P/C: FINA 2244; P: ICTN 2000)
ICTN 4150, 4151. Switching Network Technology (3,0) (F) (P: Current CCNA certification)
ICTN 4200, 4201. Intrusion Detection Technologies (3,0) (F) (P: ICTN 2530, 2900)
ICTN 4250, 4251. Enterprise Network Technology (3,0) (S) (P: Current CCNA certification)
ICTN 4592, 4593. Optimizing Converged Networks (3,0) (S) (P: Current CCNA certification)
ICTN 4600, 4601. Enterprise Information Technology Management (3,0) (S) (P: ICTN 2154, 2530)
ICTN 4800, 4801. Information Assurance Technologies (3,0) (F) (P: ICTN 2530, 2900)
ITEC 3000. Internet Tools Technology (3) (F,S) (P: MIS 2223 or ITEC 2000; distance education (online) student)

Manufacturing Systems
IENG 3300. Plant Layout and Materials Handling (3) (F) (P: IENG 2020)
IENG 4020. Manufacturing System Planning (3) (F) (P: ITEC 3200)
IENG 4023. Advanced Manufacturing Systems (3) (S) (P: IENG 3300)
IENG 4200. Work Methods and Ergonomic Analysis (3) (S) (P: ENG 4020)
ITEC 3292. Industrial Safety (3) (F,S) (P: Junior standing)
ITEC 4300. Quality Assurance Concepts (3) (F,S) (P: ITEC 3200 or MATH 2283)
Approved technical electives (9 s.h.)

Mechanical Technology
DESN 3032, 3033. Engineering Graphics II (3,0) (S) (P: DESN 2036)
DESN 3230, 3231. Rapid Prototyping (3,0) (S) (P: DESN 3032; IENG 2076)
DESN 3234, 3235. Jig and Fixture Design (3,0) (F) (P: DESN 3032; ITEC 2090; IENG 2076)
DESN 3236, 3237. Geometric Dimensioning and Tolerancing (3,0) (F) (P: DESN 3032; MATH 1074; ITEC 3200 or MATH 2283)
IENG 2076, 2077. Introduction to Computer Numerical Control (CNC) (3,0) (F,S) (P: DESN 2034)
IENG 3020, 3021. Introduction to Computer Integrated Manufacturing (3,0) (S) (P: ITEC 2090; IENG 2076)
IENG 3300. Plant Layout and Materials Handling (3) (F) (P: IENG 2020)
Approved technical electives (6 s.h.)

5. Cognates - 5 s.h.
FINA 2244. Legal Environment of Business (3) (F,S,SS)
MATH 1074. Applied Trigonometry (2) (F,S,SS) (P: MATH 1065)
Approved electives to complete requirements for graduation.

BS in Information and Computer Technology
Philip J. Lunsford, Coordinator, C123 Science and Technology Building

Credit toward an information and computer technology major will not be given for any
ICTN course with a grade less than C. Minimum degree requirement is 126 s.h. credit as follows:

1. Foundations curriculum requirements (See Section 4, Foundations Curriculum Requirements for all Baccalaureate Degree Programs), including those listed below. 42 s.h.
   COM 2410. Public Speaking (3) (F,S,SS) (FC:FA) or COMM 2420. Business and Professional Communication (3) (F,S,SS) (FC:FA)
   ECON 2113. Principles of Microeconomics (3) (F,S,SS) (FC:SO)
   MATH 1065. College Algebra (3) (F,S,SS) (FC:MA) (P: Appropriate score on mathematics placement test) or MATH 1066. Applied Mathematics for Decision Making (3) (F,S,SS) (FC:MA) (P: Appropriate score on mathematics placement test or approval of dept chair)
   PHYS 1250, 1260. General Physics I (3) (F,S,SS) (FC:SC) (P for 1250: MATH 1065 or 1066; P for 1260: PHYS 1250)
   PHYS 1251, 1261. General Physics Laboratory (1,1) (F,S,SS) (FC:SC) (C for 1251: PHYS 1250 or 2350; C for 1261: PHYS 1260 or 2260)
   PSYC 1000. Introductory Psychology (3) (F,S,SS) (FC:SO) (P: PSYC 1000 or 1060)
   PSYC 3241. Personnel and Industrial Psychology (3) (F,S,SS) (FC:SO) (P: PSYC 1000 or 1060)

2. Lower Division Core - 24 s.h.
   ICTN 1500, 1501. PC Hardware (3,0) (F,S)
   ICTN 2000. Introduction to Telecommunications (3) (F)
   ICTN 2154, 2155. Digital Communication Systems (3,0) (F,S) (P: ICTN 1500; RP/C: ICTN 2000)
   ICTN 2158, 2159. Computer Network Technology (3,0) (F,S) (P: ICTN 2154)
   ICTN 2510, 2511. Network Environment I (3,0) (F) (P: ICTN 1500)
   ICTN 2530, 2531. Network Environment II (3,0) (S) (P: ICTN 1500)
   ICTN 2732. Scripting for Information Technology (3) (S) (P: ITEC 2000; P/C: ICTN 2530)
   ITEC 2000. Industrial Technology Applications of Computer Systems (3) (F,S) or ITEC 3000. Internet Tools Technology (3) (F,S) (P: MIS 2223 or ITEC 2000 or equivalent experience) or equivalent.

3. Upper Division Core - 27 s.h.
   ICTN 2900, 2901. Introduction to Network Security (3,0) (F) (P: ICTN 2154)
   ICTN 3540, 3541. Network Environment III (3,0) (F) (P: ICTN 2510, 2530)
   ICTN 4000. Network Internship (3) (F,S,SS) (P: Junior standing and ICTN major)
   ICTN 4020. Senior Information and Computer Technology Capstone Design Project I (1) (WI) (F) (P: Senior standing, IDIS 3790, ITEC 3290, 3300 and ICTN major)
   ICTN 4022. Senior Information and Computer Technology Capstone Design Project II (2) (WI) (S) (P: ICTN 4020)
   ICTN 4040. Communication Security (3) (S) (P: Senior standing and ICTN 2154, 2530)
   IDIS 3790. Technical Presentations for Industry (3) (F,S) (P: ITEC 2000 or MIS 2223)
   ITEC 3290. Technical Writing (3) (F,S,SS) (P: ENGL 1200)
   ITEC 3300. Technology Project Management (3) (WI) (F,S) (P: ENGL 1200; ITEC 2000 or MIS 2223)

4. Concentration area (Choose one.), 12 s.h.
   Computer Networking:
   ICTN 3250, 3251. Internetwork Routing Technology (3,0) (F) (P: Current CCNA certification)
   ICTN 4150, 4151. Switching Network Technology (3,0) (F) (P: Current CCNA certification)
   ICTN 4250, 4251. Enterprise Network Technology (3,0) (S) (P: Current CCNA certification)
   ICTN 4592, 4593. Optimizing Converged Networks (3,0) (S) (P: Current CCNA certification)
   Information Security:
   ICTN 4064. Regulations and Policies (3) (S) (P/C: FINA 2244; P: ICTN 2000, 2530)
   ICTN 4200, 4201. Intrusion Detection Technologies (3,0) (F) (P: ICTN 2530, 2900)
   ICTN 4600, 4601. Enterprise Information Technology Management (3,0) (S) (P: ICTN 2154, 2530)
   ICTN 4800, 4801. Information Assurance Technologies (3,0) (F) (P: ICTN 2530, 2900)
   Information Technology:
   ICTN 3900, 3901. Web Services Management (3,0) (F) (P: ICTN 2510, 2530)
   ICTN 4010, 4011. User Application Management and Emerging Technologies (3,0) (F) (P: ICTN 250, 2530)
   ICTN 4064. Regulations and Policies (3) (S) (P/C: FINA 2244; P: ICTN 2000, 2530)
   ICTN 4600, 4601. Enterprise Information Technology Management (3,0) (S) (P: ICTN 2154, 2530)
5. Cognates - 12 s.h.
   FINA 2244. Legal Environment of Business (3) (F,S,SS)
   ITEC 3200. Introduction to Statistical Process Control (3) (F,S) (P: MATH 1065 or 1066 or equivalent) or MATH 2283. Statistics for Business (3) (F,S,SS) (P: MATH 1065 or 1066 or equivalent)
   ITEC 3800. Cost and Capital Project Analysis (3) (S) (P: MATH 1065) or ACCT 2101 Survey of Financial and Managerial Accounting (3) (F,S) (P: MATH 1065 or 1066) or ACCT 2401. Financial Accounting (3) (F,S,SS) (P: MATH 1065 or 1066 or 2119 or 2121 or 2171)
   ITEC 4293. Industrial Supervision (3) (WI) (F,S) (P: Senior standing or approval of instructor) or MGMT 3202. Fundamentals of Management (3) (F,S,SS) (P: ECON 1000 or 2113)

6. Approved electives to complete requirements for graduation.

Architectural Design Technology Minor

The architectural design technology design minor requires a minimum of 30 s.h. of credit:

DES N 2034, 2035. Engineering Graphics I (3,0) (F,S) (P: ITEC 2000 or MIS 2223)
DES N 2036, 2037. Computer-Aided Design and Drafting (3,0) (F,S) (P: DES N 2034)
DES N 3030, 3031. Architectural Drafting (3,0) (F,S) (P: DES N 2034 or IDS N 1281)
DES N 3032, 3033. Engineering Graphics II (3,0) (S) (P: DES N 2036)
DES N 3036, 3037. Architectural Design and Drafting (3,0) (F) (P: DES N 2036, 3030)
DES N 3038, 3039. Sustainable Design (3,0) (S) (P: DES N 2036, 3030)
ITE C 2000. Industrial Technology Applications of Computer Systems (3) (F,S) or MIS 2223. Introduction to Computers (3) (F,S,SS)

And 9 s.h. from the following:

PLAN 1900. Planning for the Human Environment (3) (F,S,SS)
PLAN 3021. Introduction to Planning Techniques (3) (F)
PLAN 3051. Introduction to GIS in Planning (3) (F) (P: PLAN 3410 or consent of instructor)
PLAN 4003. Urban Form and Design (3) (S)
PLAN 4021. Advanced GIS Applications in Planning (3) (S) (P: PLAN 3051 or GEOG 3410 or consent of instructor)
PLAN 4046. Planning and Design Studio (3) (F,S)
PLAN 5985. Historic Preservation Planning (3)

Industrial Technology Management Minor

The industrial technology management minor requires 24 s.h. of credit as follows:

FINA 2244. Legal Environment of Business (3) (F,S,SS)
IDS IS 2771. Introduction to Distribution and Logistics (3) (F,S)
ITEC 3200. Introduction to Statistical Process Control (3) (F,S) (P: MATH 1065 or 1066 or equivalent)
ITEC 3290. Technical Writing (3) (WI) (F,S,SS) (P: ENGL 1200)
ITEC 3292. Industrial Safety (3) (F,S) (P: Junior standing)
ITEC 3300. Technology Project Management (3) (WI) (F,S) (P: ENGL 1200; ITEC 2000 or MIS 2223)
ITEC 3800. Cost and Capital Project Analysis (3) (S) (P: MATH 1065)
ITEC 4293. Industrial Supervision (3) (WI) (F,S) (P: Senior standing or approval of instructor)

Information and Computer Technology Minor

The information and computer technology minor requires 24 s.h. of credit.

ICTN 1500, 1501. PC Hardware (3,0) (F,S)
ICTN 2000. Introduction to Telecommunications (3) (F)
ICTN 2154, 2155. Digital Communication Systems (3,0) (F,S) (P: ICTN 1500; RP/C: ICTN 2000)
ICTN 2158, 2159. Computer Networking Technology (3,0) (F,S) (P: ICTN 2154)
ICTN 2510. 2511. Network Environment I (3,0) (F) (P: ICTN 1500)
ICTN 2530, 2531. Network Environment II (3,0) (S) (P: ICTN 1500)
ICTN 2900, 2901. Introduction to Network Security (3,0) (F) (P: ICTN 2154)
ICTN 4040. Communication Security (3) (S) (P: Senior standing; ICTN 2154, 2530)

Mechanical Design Technology Minor

The mechanical design technology minor requires a minimum of 30 s.h. of credit:

DES N 2034, 2035. Engineering Graphics I (3,0) (F,S) (P: ITEC 2000 or MIS 2223)
DES N 2036, 2037. Computer-Aided Design and Drafting (3,0) (F,S) (P: DES N 2034)
DES N 3032, 3033. Engineering Graphics II (3,0) (S) (P: DES N 2036)
DES N 3230, 3231. Rapid Prototyping (3,0) (S) (P: DES N 3032; IENG 2076)
DES N 3234, 3235. Jig and Fixture Design (3,0) (F) (P: DES N 3032; ITEC 2090; IENG 2076)
IENG 2076, 2077. Introduction to Computer Numerical Control (CNC) (3,0) (F,S) (P: DESN 2034)
ITEC 2000. Industrial Technology Applications of Computer Systems (3) (F,S) or MIS 2223. Introduction to Computers (3) (F,S,SS)
ITEC 2054, 2055. Electricity/Electronics Fundamentals (3,0) (F,S) (P: MATH 1065 or 1066 or 1085 or 2119)
ITEC 2090, 2091. Electromechanical Systems (3,0) (F,S) (P: ITEC 2054)
MATH 1065. College Algebra (3) (F,S,SS) (FC:MA) (P: Appropriate score on mathematics placement test)

**Occupational Safety and Health Minor**

Minimum requirement for environmental health minor is 24 s.h. of credit as follows:

- EHST 3700. Industrial Hygiene (3) (S) (P: 8 s.h. of general science lab courses or consent of dept chair)
- EHST 3701. Industrial Hygiene Lab (1) (S) (P: Consent of instructor; C: EHST 3700)
- EHST 3910. General Industry Safety (3) (F)
- EHST 3926. Construction Safety (3) (F,S)
- EHST 4200. Environmental Health Management and Law (3) (F)
- ITEC 3292. Industrial Safety (3) (F,S) (P: Junior standing)
  Choose 8 s.h. of general science lab courses