

**DEPARTMENT OF INDUSTRIAL & ENGINEERING TECHNOLOGY
BACHELOR OF SCIENCE
INDUSTRIAL TECHNOLOGY MAJOR
TELECOMMUNICATIONS & COMPUTER NETWORKING OPTION**

The Industrial Technology major with a Telecommunications & Computer Networking option is designed to prepare students with background and skills to design, implement, and support networked systems in both standard and enterprise settings. It builds a solid foundation in the hardware and architecture of telecommunications networks and systems; operating systems and applications; systems design and analysis; networking theory and solutions; types of networks, including fiber optics and wireless; network management and control; network and flow optimization; network security; configuring; and troubleshooting.

CURRICULUM CHECKLIST

UNIVERSITY STUDIES (53 hours)

| | |
|--|---|
| ___ UI 100 First Year Seminar | 3 |
| ___ Artistic Expression | 3 |
| ___ Literary Expression | 3 |
| ___ Oral Expression | 3 |
| ___ EN 100 English Composition | 3 |
| ___ Written Expression | 3 |
| ___ Behavioral Systems | 3 |
| ___ Living Systems | 3 |
| ___ MA 134 College Algebra (Logical Systems) | 3 |
| ___ PH 120/020 Introductory Physics I (Physical Systems) | 5 |
| ___ Development of a Major Civilization | 3 |
| ___ MN 220 Engineering Economic Analysis (Economic Systems) | 3 |
| ___ Political Systems | 3 |
| ___ SW 207 Understanding Cult & Soc Diversity (Social Systems) | 3 |
| ___ UI 3xx Interdisciplinary University Studies Course (UI319 recommended) | 3 |
| ___ UI 3xx Interdisciplinary University Studies Course | 3 |
| ___ UI 410 Manufacturing Research in a Global Society- University Studies Senior Seminar | 3 |
| ___ WP 003 Writing Proficiency Test (to be taken after completing 75 hours) | 0 |
| ___ CCTST Critical Thinking Test (to be taken after completing 75 hours) | 0 |
| ___ CL001 ___ CL002 ___ CL003 ___ CL004 Career Linkages Requirements | 0 |

INDUSTRIAL TECHNOLOGY CORE

(26 Hours, not counting 17 hours included in University Studies section)

| | |
|--|---|
| ___ IM 102 Technical Communication | 3 |
| ___ IM 301 Industrial Safety | 3 |
| ___ IM 311 Statistical Process Control | 3 |
| ___ IM 419 Industrial Supervision | 3 |
| ___ IM 506 Projects in IET | 3 |
| ___ MA 133 Plane Trigonometry | 3 |
| ___ MN 260 Technical Computer Programming Applications | 3 |
| ___ PH 121/021 Introductory Physics II | 5 |

IT required courses included in University Studies section above: MA134, MN220, PH120, SW207, and UI410

TELECOMMUNICATION AND COMPUTER NETWORKING OPTION (42 Hours)

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|--|---|
| ___ ET 160 Basic Electricity and Electronics | 3 |
| ___ ET 194 Fundamentals of Programmable Logic Controllers (PLCs) | 3 |
| ___ ET 245 Logic Circuits | 3 |
| ___ IM 317 Cooperative Industrial Internship OR MN 412 Advanced Manufacturing Systems | 3 |
| ___ MA 139 Applied Calculus | 3 |
| ___ MI 440 Web Design Electronic Computing | 3 |
| ___ MI 445 System Analysis & Design | 3 |
| ___ TN 254 Fiber Optics & Networking Communications | 3 |
| ___ TN 255 Microcomputer Maintenance & Troubleshooting | 3 |
| ___ TN 275 Network Fundamentals | 3 |
| ___ TN 375 Network Routing Protocol and Concepts | 3 |
| ___ TN 395 Server Maintenance & Troubleshooting | 3 |
| ___ TN 425 Wireless Communication & Mobile Data Networks | 3 |
| ___ TN 435 Network Security | 3 |

EXAMPLE PROGRAM OF STUDY

BS - Industrial Technology major - Telecommunications and Computer Networking option

FRESHMAN FALL SEMESTER (15 hrs)

EN 100 English Comp I
IM 102 Technical Communication
MA 134 College Algebra
UI 100 First Year Seminar
Oral Expression
CL001 Career Linkages 1st Requirement

FRESHMAN SPRING SEMESTER (15 hrs)

ET 160 Basic Electricity & Electronics
MA 133 Plane Trigonometry
MN 260 Technical Computer Programming Appl.
Behavioral Systems
Written Expression
CL002 Career Linkages 2nd Requirement

SOPHOMORE FALL SEMESTER (17 hrs)

ET 194 Fundamentals of PLCs
ET 245 Logic Circuits
MA 139 Applied Calculus
PH 120 Introductory Physics I
TN 255 Microcomputer Maint. & Troub. (ET245
co-req)

SOPHOMORE SPRING SEMESTER (17 hrs)

IM 301 Industrial Safety
PH 121 Introductory Physics II
Literary Expression
Political Systems
SW 207 Understanding Cult. & Soc. Diversity (Social
Systems)

JUNIOR FALL SEMESTER (15 hrs)

IM 311 Statistical Process Control
TN 254 Fiber Optics & Network Communications
TN 275 Network Fundamentals
Artistic Expression
Living Systems
CL003 Career Linkages 3rd Requirement

JUNIOR SPRING SEMESTER (15 hrs)

MI 440 Web Design Electronic Computing
MN 220 Engineering Economic Analysis
MN 412 Advanced Manufacturing Systems
OR IM 317 Internship
TN 375 Network Routing Protocols & Concepts
TN 395 Server Maintenance & Troubleshooting
WP 003 Writing Proficiency Exam
CCTST California Critical Thinking Skills Test

SENIOR FALL SEMESTER (15 hrs)

IM 419 Industrial Supervision
IM 506 Projects in IET
MI 445 System Analysis & Design
TN 435 Network Security
UI 3xx University Studies (UI319 recommended)
CL004 Career Linkages 4th Requirement

SENIOR SPRING SEMESTER (12 hrs)

TN 425 Wireless Communication & Mobile Data
Networks
UI 3xx University Studies
UI 410 Manufacturing Research in a Global Society
Development of a Major Civilization

121 Hours

Notes:

- This proposed rotation is suggested. You will need to meet with your advisor every semester for advising and discussions about your progress and plans.
- Course prerequisites and rotations can change. Even if you fall under an older option of a major, changes in prerequisites apply to all students. For current prerequisites and course rotation, check with the Department of Industrial and Engineering Technology or the Polytechnic Studies Advising Center.
- An internship is highly recommended – the summer after your junior year is a good time
- For course descriptions, see the latest undergraduate bulletin OR www.semo.edu/bulletin
- Visit <http://www.semo.edu/ustudies/handbook/index.htm> for information on the University Studies program
- For information on Career Linkages, visit <http://www.semo.edu/careerlinkages/students/index.htm>