

**Bachelor of Science (BS)**

Technology management is a field of study designed to prepare technical and/or management-oriented professionals for employment in business, industry, education and government.

Technology management is primarily involved with the management operation, and maintenance of complex technological systems while engineering and engineering technology are primarily involved with the design and installation of these systems.



Computer Network Systems Administration students are prepared to design, implement and support networked systems in both standard and enterprise settings. Students gain a solid foundation in the hardware and architecture of telecommunication networks and systems, operating systems and applications, system 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. Computer Network Systems Administration students learn concepts of network design, integration, security, administration, and management of computing and telecommunications technologies.

**Becoming Career Ready...**

/ Faculty with relevant industry experience work closely with students by providing them with career-ready practical experience and a technology-based curriculum in the state-of-the-art Otto & Della Seabaugh Polytechnic building.

/ Computer Network Systems Administration graduates work as technology professionals and as technical managers area within business, industry, education and government. Examples of job titles include IT manager, IT director, network systems administrator, network engineer and technology director.

/ 100% of Southeast programs offer real-world experience. Computer Network Systems Administration students earn this experience through a senior design capstone course for students to work in teams to solve open-ended industrial projects. Students also gain valuable hands-on experience through required labs that accompany the technology courses work.

/ The path to a successful career starts with you! You can maximize your career development by working closely with Career Services and Southeast faculty – they are here to help you connect your passions, interests and skills to jobs and opportunities in the field. Career Services provides professional career counseling and coaching, resume critiques, practice interviews, job search strategies, career events, networking opportunities and more.

**Career Opportunities:**

- Information Technology Specialist
- Network Administrator/Specialist
- Network Engineer
- Network Manager
- System Administrator
- Telecommunications Specialist
- Technical Specialist

**Equipment and Computer Programs**

We have developed laboratories to provide our students with an opportunity to master a working knowledge of the basic fundamentals to advanced concepts in network applications and systems administration. Courses are accompanied by hands-on laboratories in which students will:

- Design, configure, and set up networked and telecommunications systems, client server programming and network administration.
- Configure network hardware and software on Linux and Microsoft-based microcomputers that are connected to wireless systems, the Internet and a LAN/WAN with switches and routers.
- Perform network protocol analysis and network performance using test equipment and hardware tools such as OptiView, Signal Pro, NS, Qualnet and Opnet.
- Work with multi-user, multi-tasking network operating systems such as UNIX, Linux and Windows Server with a focus on network administration.
- Learn principles of communication systems, communication protocols such as Kermit, HDLC, and performance measurement of wired and wireless systems.
- Learn principles and assembling of computers and installation, maintenance, troubleshooting, and repair of computer peripherals and system expansion, including operating systems, memory, disk drives, printers and displays.
- Develop WWW presence with Web technologies using HTML, scripting languages and develop database connectivity.
- Learn concepts of systematic ongoing processes of network analysis, design, implementation, maintenance and security management.

**Special Options with Technology Management**

Southeast Missouri State University offers an accelerated master's degree for current Southeast technology management students. For more information, please see the MS: Technology Management degree map.

Southeast also offers a Master of Science in Technology Management.

**Transfer and Dual Credit Students**

If you have dual credit or transfer credit, please visit our transfer course equivalencies guide at [semo.edu/transfercredit](http://semo.edu/transfercredit).

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This is a guide based on the 2019-2020 Undergraduate Bulletin and is subject to change. The time it takes to earn a degree will vary based on several factors such as dual enrollment, remediation, and summer enrollment. Students will meet with an academic advisor each semester and use Degree Works to monitor their individual progress.

**CURRICULUM CHECKLIST****TECHNOLOGY MANAGEMENT: COMPUTER NETWORK SYSTEMS ADMINISTRATION OPTION – 85 hours****Required Courses:**

- \_\_\_ IM300 Technical Communication (3)
- \_\_\_ IM301 Industrial Safety (3)
- \_\_\_ IM311 Statistical Process Control (3)
- \_\_\_ IM419 Industrial Supervision (3)
- \_\_\_ IM506 Projects in IET (3)
- \_\_\_ MA116 Precalculus A (3)
- \_\_\_ MA117 Precalculus B (3)
- \_\_\_ MA139 Applied Calculus (3)
- \_\_\_ MN220 Engineering Econ Analysis (3)
- \_\_\_ MN260 Technical Computer Programming Applications (3)
- \_\_\_ PH120/020 Introductory Physics I (5)
- \_\_\_ PH121/021 Introductory Physics II (5)
- \_\_\_ SW207 Understanding Cultural & Social Diversity (3)
- \_\_\_ UI410 Manufacturing Research in a Global Society (3)

**Computer Network Systems Administration Option**

- \_\_\_ ET160 Basic Electricity and Electronics (3)
- \_\_\_ ET245 Logic Circuits (3)
- \_\_\_ TN255 Microcomputer Maintenance & Troubleshooting (3)
- \_\_\_ TN275 Introduction to Networks (3)
- \_\_\_ TN375 Routing/Switching Essentials (3)
- \_\_\_ TN395 Server Maintenance & Troubleshooting (3)
- \_\_\_ TN425 Wireless Communication & Mobile Data Networks (3)
- \_\_\_ TN435 Network Security (3)
- \_\_\_ TN475 Scaling Networks (3)
- \_\_\_ TN563 Connecting Networks (3)
- \_\_\_ TN565 Network Management (3)
- \_\_\_ TN566 IP Telephony (3)

**Choose 3 hours:**

- \_\_\_ CY201 Introduction to Cybersecurity (3)
- \_\_\_ IM317 Cooperative Industrial Internship (3)

**General Education Requirements** – some requirements may be fulfilled by coursework in major program

- Social and Behavioral Sciences – 6 hours
- Constitution Requirement – 3 hours
- Written Communication – 6 hours
- Oral Communication – 3 hours
- Natural Sciences – 7 hours (from two disciplines, one to include a lab)
- Mathematics – 3 hours
- Humanities & Fine Arts – 9 hours (from at least two disciplines)
- Additional requirements – 5 hours (to include UI100 for native students)
- Civics examination

**SAMPLE FOUR-YEAR PLAN**

| ▼                  | Fall Semester     |              | Spring Semester   |     |
|--------------------|-------------------|--------------|-------------------|-----|
|                    | Course #          | Hrs          | Course #          | Hrs |
| <b>FIRST YEAR</b>  | UI100             | 3            | IM300             | 3   |
|                    | EN100             | 3            | IM301             | 3   |
|                    | ET160             | 3            | MA117             | 3   |
|                    | MA116             | 3            | MN260             | 3   |
|                    | TN255             | 3            | General Education | 3   |
| <b>Total</b>       | <b>15</b>         | <b>Total</b> | <b>15</b>         |     |
| <b>SECOND YEAR</b> | ET245             | 3            | PH121             | 5   |
|                    | MA139             | 3            | SW207             | 3   |
|                    | PH120             | 5            | TN375             | 3   |
|                    | TN275             | 3            | TN395             | 3   |
|                    |                   |              | General Education | 3   |
| <b>Total</b>       | <b>14</b>         | <b>Total</b> | <b>17</b>         |     |
| <b>THIRD YEAR</b>  | IM311             | 3            | MN220             | 3   |
|                    | TN425             | 3            | TN435             | 3   |
|                    | TN475             | 3            | TN563             | 3   |
|                    | General Education | 3            | General Education | 3   |
|                    | General Education | 3            | Elective          | 3   |
| <b>Total</b>       | <b>15</b>         | <b>Total</b> | <b>15</b>         |     |
| <b>FOURTH YEAR</b> | CY201 or IM317    | 3            | TN565             | 3   |
|                    | IM419             | 3            | UI410             | 3   |
|                    | IM506             | 3            | General Education | 3   |
|                    | TN566             | 3            | General Education | 3   |
|                    | General Education | 3            | Elective          | 2   |
| <b>Total</b>       | <b>15</b>         | <b>Total</b> | <b>14</b>         |     |

**Degree requirements for all students:** a minimum of 120 credit hours, completion of the General Education program, completion of 39 senior division hours (300-599), Writing Proficiency Exam (WP003).

Refer to the Undergraduate Bulletin or Degree Works for additional graduation requirements for your program.