

BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY WITH A CONCENTRATION IN NETWORK MANAGEMENT (BSITNM)

(Please see the *Undergraduate Program Offerings by Campus* chart in the catalog for a list of Herzing campuses offering this program.)

PROGRAM DESCRIPTION

This program prepares students for a broad range of positions in the field of information technology. Foundational skills taught include end-user support, client/server operating systems, network infrastructure administration, security, scripting, database fundamentals, cloud computing, virtualization, data storage and technical communication. Advanced skills include database design, project management, information technology management and business systems analysis. Coursework in this program is designed to provide a foundation for select industry certifications.

Additional skills in security technology include data storage, advanced wireless networking, mail servers, network defense, and VoIP.

PROGRAM OUTCOMES

Upon completion of this program, the student should be able to:

1. Apply industry standards to the implementation and support of network systems and computer devices.
2. Demonstrate the principles of information technology security.
3. Use information systems for the collection, organization, and delivery of data.
4. Express relevant information to technical and nontechnical audiences.
5. Design secure network infrastructures for physical and virtual environments.
6. Create information technology solutions based on business needs or requirements.

POTENTIAL OCCUPATIONAL TITLES

Potential occupational titles for this program include, but are not limited to, computer and information systems managers and computer network architects.

PROGRAM CONTENT

A minimum of 121.00 semester credit hours is required for graduation.

REQUIRED CORE COURSES IN INFORMATION TECHNOLOGY

All courses, 52.00 semester credit hours, are required.

Course Number	Course Name	Prerequisites/Corequisites	Semester Credit Hours
IS 122	Programming Logic	None	3.00
IS 123	Computer Networks	None	3.00
or			
IS 195 ▶	Transition to Technology Concepts	IS 187, IS 192, IS 283, IS285, and NT181	3.00
IS 183	Database Concepts and Applications I	IS 122	3.00
IS 187	Computer Architecture and Troubleshooting I	None	3.00
IS 192	Linux Administration	IS 123	3.00
IS 283	Network Security	IS 192 and NT 181	3.00
IS 285	Routers and Switches I	IS 123	3.00
IS 287	Routers and Switches II	IS 285	3.00
IS 293	Linux Application Server	IS 192	3.00

Course Number	Course Name	Prerequisites/Corequisites	Semester Credit Hours
IT 120	Technical Writing	EN 104	1.00
IT 203	Internet Concepts and Human Computer Interaction	IS 123	3.00
IT 346	Information Technology Project Management	IS 102	3.00
IT 368	Cloud Computing	NT 306	3.00
NT 181	Network and Server Operating Systems	IS 123 or IS 188	3.00
NT 201	Network Infrastructure Administration	NT 181	3.00
NT 303	Advanced Network Infrastructure	NT 201	3.00
NT 306	Virtualization	NT 201	3.00
NT 326	System Administration Scripting	IS 122	3.00

Completion of IT 346 may be waived with the permission of the Academic Dean if the student has already completed BU 345 Project Management.

IS 195 is required of advanced standing students only.

REQUIRED COURSES IN TECHNICAL SPECIALTY DOMAIN—NETWORK MANAGEMENT

All courses, 18.00 semester credit hours, are required.

Course Number	Course Name	Prerequisites/Corequisites	Semester Credit Hours
IT 337	Data Storage	IS 192 and NT 181	3.00
NT 321	Wireless Networking Fundamentals	IS 123	3.00
NT 342	Mail Servers	IS 192 and NT 181	3.00
NT 354	Network Defense	IS 283	3.00
NT 390	Advanced Routing and Switching	IS 287	3.00
NT 403	Voice-Over IP	IS 123	3.00

TECHNICAL ELECTIVE COURSES

A minimum of 9.00 semester credit hours is required from the list below.

Course Number	Course Name	Prerequisites/Corequisites	Semester Credit Hours
IS 188	Computer Architecture and Troubleshooting II	IS 187	3.00
IS 219	Database Concepts and Applications II	IS 183	3.00
IS 291	Applied Routers and Switches	IS 287	3.00
IS 347	Business Systems Analysis	IS 122	3.00
IT 100	Introductory Topics in Information Technology and Software Development	None	3.00
IT 122	Portfolio Development	None	1.00
IT 234	CompTIA A+ Competency Workshop	IS 188	3.00
IT 235	MCSA Competency Workshop	NT 201	3.00
IT 236	CCNA Competency Workshop	IS 291	3.00
IT 331	Routing and Switching Security	IS 285	3.00

Course Number	Course Name	Prerequisites/Corequisites	Semester Credit Hours
IT 336	Information Assurance and Security	IS 283	3.00
IT 338	Ethical Hacking	IS 283	3.00
IT 367	Network Infrastructure Hardening	NT 201	3.00
IT 372	Web Security	NT 371	3.00
IT 381	Cloud Computing and Virtualization Competency	IT 368 and NT 306	3.00
IT 461	Advanced Security Implementation	IS 283 and NT 201	3.00
IT 471	Enterprise Security Solutions	IS 283 and NT 201	3.00
NT 203	Routing and Switching Security I	IS 285	3.00
NT 213	Routing and Switching Security II	NT 203	3.00
NT 316	Designing Network Security	IS 283 and NT 201	3.00
NT 344	Computer and Network Forensics	IS 283	3.00
NT 361	Supporting Enterprise Applications	NT 201	3.00
NT 371	Web Server Installation and Administration	NT 201	3.00
NT 383	Multilayer Switching	IS 287	3.00
NT 402	Internetwork Troubleshooting	IS 287	3.00

REQUIRED CAPSTONE OR INTERNSHIP

3.00 credit hours are required.

Course Number	Course Name	Prerequisites/Corequisites	Semester Credit Hours
IS 495 *	Internship	Final semester	3.00
IT 491	Information Technology Capstone Project	Final semester	3.00

* Online students in some states may not be allowed to take this internship due to state restrictions.

* Enrollment in a student readiness training is required prior to the internship course. Successful completion of training is required prior to internship course enrollment.

REQUIRED COURSES IN GENERAL EDUCATION

Students enrolled in this bachelor's degree must complete a minimum of 37.00 semester credit hours in general education distributed among the following disciplines. A minimum of 9.00 semester credit hours must be upper level (300- to 400-level courses). Refer to the General Education section of the catalog for Herzing University courses that would satisfy these requirements. *

- 4.00 Semester Credit Hours in Computer Applications ♦
- 3.00 Semester Credit Hours in Cultural Diversity
- 6.00 Semester Credit Hours in English Composition or Literature
- 3.00 Semester Credit Hours in General Education Electives ♦
- 3.00 Semester Credit Hours in Humanities With a Critical Thinking Focus ** ♦
- 1.00 Semester Credit Hour in Information Literacy
- 7.00 Semester Credit Hours in Mathematics (College Algebra or Above)
- 4.00 Semester Credit Hours of Natural Science With a Lab Component
- 3.00 Semester Credit Hours in Social or Behavioral Science
- 3.00 Semester Credit Hours in Speech

- * Transfer students may transfer courses that are within 1.00 semester credit hour of the courses listed above to meet these discipline requirements. Any resulting deficiency in the total of 37.00 semester credit hours required in general education may be made up with general education electives from any of the listed disciplines.
- ** A course with a critical thinking focus would be a course that addresses the theories and application of critical analysis with an emphasis on developing sequential reasoning skills. Examples may be courses in critical thinking, philosophy, logic, or science.
- ◆ The state of Minnesota requires a minimum of 30.00 semester credit hours of general education for bachelor's degrees, not counting computer applications. However, all Herzing University students in the BSITNM program must complete a minimum of 37.00 semester credit hours in general education, including computer applications, to complete the requirement for graduation from this bachelor's degree program. Minnesota students must complete at least 4.00 semester credit hours of general education in the humanities.

PERSONAL AND PROFESSIONAL DEVELOPMENT COURSES

2.00 semester credit hours are required.

Course Number	Course Name	Prerequisites/Corequisites	Semester Credit Hours
PD 121	Professional Development I	None	1.00
PD 202	Professional Development II	None	1.00