

HERZING

BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY WITH A CONCENTRATION IN SECURITY TECHNOLOGY (BSITST)

PROGRAM DESCRIPTION

The Bachelor of Science in Information Technology With a Concentration in Security Technology employs an integrated and coherent approach that prepares students with the necessary academic knowledge and technical competencies required for a range of positions. The curriculum is focused on designing, implementing, and supporting solutions to business problems in the general categories of information technology, information management, and business communications with emphasis on security technology. The program helps students to develop skills needed to design an organization's security systems procedures, standards, protocols, and policies, as well as ensure that operational security is in compliance with standards. The program keeps pace with changing technology by offering courses that focus on emerging technologies. Coursework is designed to enhance and build upon the knowledge and skills of students with associate's degrees, completed coursework, or practical experience in information technology or systems. Career opportunities include, but are not limited to, such areas as information technology specialists or managers, information systems auditors, network security architects, information systems security analysts, information technology strategic planners, internet systems security professionals, and disaster recovery specialists.

PROGRAM OBJECTIVES

Upon completion of the program, students should be able to demonstrate the ability to participate as a team member or to manage projects that:

1. Demonstrate proficiency in networking, standards, and security issues necessary to design, implement, and evaluate information technology solutions.
2. Design, develop, and evaluate systems based on end-user profiles and interactions.
3. Reconcile conflicting project objectives in the design of networking and security systems, finding acceptable compromises within limitations of cost, time, knowledge, existing systems and design choices, and organizational requirements.
4. Articulate organizational, operational, ethical, social, legal, and economic issues impacting the design of information technology systems.
5. Apply current theories, models, and techniques in the analysis, design, implementation, and testing of secure network infrastructures across LANs and WANs.
6. Think critically at a conceptual level and by using mathematical analysis as well as the scientific method; write and speak effectively; use basic computer applications; and understand human behavior in the context of the greater society in a culturally diverse world.

POTENTIAL JOB POSITION TITLES

This program aims to educate students in preparing for careers in the administration and management of information technology. Potential entry-level job position titles include, but are not limited to, network operators, security administrators, system administrators, security systems analysts, internet systems security professionals, technical support specialists, network security specialists, and disaster recovery analysts.

PROGRAM CONTENT

A minimum of 122.00 semester credit hours is required for graduation.

REQUIRED CORE COURSES IN INFORMATION TECHNOLOGY

All courses, 41.00 semester credit hours, are required.

| Course Number | Course Name | Prerequisite | Credit Hours |
|---------------|---|--------------|--------------|
| IS 103 | Programming Logic | None | 4.00 |
| IS 112 | Computer Networks | IS 102 | 4.00 |
| IS 121 | Introduction to the Internet | None | 4.00 |
| IS 182 | Database Concepts and Applications I | IS 103 | 3.00 |
| IS 185 | Computer Architecture and Troubleshooting I | None | 4.00 |
| IS 191 | Linux Administration | IS 112 | 4.00 |

| Course Number | Course Name | Prerequisite | Credit Hours |
|------------------------|--|---|--------------|
| IS 282 | Network Security | IS 191 and NT 180 (or IS 191, NT 160 and NT 170) | 4.00 |
| IS 284 or NT 215 | Routers and Switches I or Routers and Switches | IS 112 or IS 185 IS 112 | 4.00 4.00 |
| IT 202 | Fundamentals of Human Computer Interaction | IS 102 | 3.00 |
| IT 345 | Information Technology Project Management | IS 102 | 3.00 |
| NT 180 | Network and Server Operating Systems | IS 112 or IS 186 | 4.00 |

REQUIRED COURSES IN TECHNICAL SPECIALTY DOMAIN—SECURITY TECHNOLOGY

All courses, 24.00 semester credit hours, are required.

| Course Number | Course Name | Prerequisite | Credit Hours |
|---------------|---------------------------------------|---|--------------|
| IS 421 | Firewall Security | IS 282 | 4.00 |
| IT 335 | Ethical Hacking | IS 282 | 4.00 |
| NT 200 | Network Infrastructure Administration | IS 191 and NT 180 (or IS 191, NT 160 and NT 170) | 4.00 |
| NT 315 | Designing Network Security | NT 200 | 4.00 |
| NT 343 | Computer and Network Forensics | IS 282 | 4.00 |

ELECTIVE COURSES IN TECHNICAL SPECIALTY DOMAIN—SECURITY TECHNOLOGY

A minimum of 12.00 semester credit hours is required.

| Course Number | Course Name | Prerequisite | Credit Hours |
|---------------|--|---|--------------|
| IS 170 | Visual Basic I | IS 103 | 4.00 |
| IS 186 | Computer Architecture and Troubleshooting II | IS 185 | 4.00 |
| IS 214 | SQL Server Administration | NT 180 (or NT 160 and NT 170) | 4.00 |
| IS 216 | Database Concepts and Applications II | IS 182 | 3.00 |
| IS 239 | TCP/IP | IS 112 | 4.00 |
| IS 286 | Routers and Switches II | IS 284 | 4.00 |
| IS 289 | Applied Routers and Switches | IS 286 | 4.00 |
| IS 292 | Linux Application Server | IS 112 | 4.00 |
| IS 332 | Data Warehousing | IS 216 | 3.00 |
| IS 345 | Business Systems Analysis | IS 112 | 3.00 |
| IS 420 | Advanced Specialization | Program GPA of 3.0 and written approval of both the faculty advisor and academic dean | 3.00 |
| IT 330 | Routing and Switching Security | IS 284 or NT 215 | 4.00 |
| IT 365 | Network Infrastructure Hardening | NT 200 | 4.00 |
| IT 371 | Web Security | NT 370 | 4.00 |

| Course Number | Course Name | Prerequisite | Credit Hours |
|---------------|--|-------------------------------|--------------|
| IT 460 | Advanced Security Implementation | IS 282 | 4.00 |
| IT 470 | Enterprise Security Solutions | IS 282 and NT 200 | 4.00 |
| NT 160 | Network Operating Systems | IS 185 | 4.00 |
| NT 170 | Server Operating Systems | NT 160 | 4.00 |
| NT 210 | Directory Services Administration | NT 180 (or NT 160 and NT 170) | 4.00 |
| NT 305 | Virtualization | IS 112 | 4.00 |
| NT 320 | Wireless Networking Fundamentals | IS 282 | 4.00 |
| NT 341 | Mail Servers | IS 191 and NT 210 | 4.00 |
| NT 370 | Web Server Installation and Administration | NT 200 | 4.00 |
| NT 401 | Voice-Over IP | IS 112 | 4.00 |

ELECTIVE COURSES IN APPLICATION SPECIALTY DOMAIN

A minimum of 3.00 semester credit hours is required in one of the following broad areas.

- ◆ Accounting (AC), Business Management (BU), and Human Resources (HR)
- ◆ Criminal Justice (CJ) and Homeland Security (HS)
- ◆ Game Development (GD) and Graphic Arts (GA)
- ◆ Health Information Management (HI) and Healthcare Management (HC).

REQUIRED CAPSTONE OR INTERNSHIP

3.00 credit hours are required.

| Course Number | Course Name | Prerequisite | Credit Hours |
|---------------|---|---------------------------|--------------|
| IS 495 | Internship | Final semester and PD 214 | 3.00 |
| IT 491 | Information Technology Capstone Project | Final semester | 3.00 |

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. *

- 1.00 Semester Credit Hour in Information Literacy
- 6.00 Semester Credit Hours in English Composition or Literature
- 3.00 Semester Credit Hours in Speech
- 4.00 Semester Credit Hours in Computer Applications ◆
- 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 Humanities With a Critical Thinking Focus ** ◆
- 3.00 Semester Credit Hours in Cultural Diversity
- 3.00 Semester Credit Hours in General Education Electives ◆

* 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 BSITST 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. Students taking the IS 495 Internship must also take PD 214.

| Course Number | Course Name | Prerequisite | Credit Hours |
|---------------|--|--------------|--------------|
| PD 121 | Professional Development I | None | 1.00 |
| PD 202 | Professional Development II | None | 1.00 |
| PD 214 | AS/AAS/BS/Diploma Internship Preparation | None | 0.00 |

For more information about our graduation rates, the median debt of students who completed the program, and other important information, please visit our website at <http://www.herzing.edu/academics/information-technology>