

# COMPUTER NETWORKS AND CYBERSECURITY, BS

The Bachelor of Science in Computer Networks and Cybersecurity degree is designed for students to enhance their theoretical, analytical, and practical skills through a solid foundation in computing, networks, and cybersecurity. The courses in this degree program help students develop the teambuilding, communication, critical-thinking, and technical skills required to keep current with the rapid advances in technology. Our students are taught by IT leaders, including former CIOs, network analysts, and database administrators. Students who complete their Bachelor's degree in Computer Networks and Cybersecurity will have the practical and theoretical knowledge necessary for employment in network design and administration, cybersecurity, computer forensics, and more.

The program level objectives for students completing the BS in Computer Networks and Cybersecurity are as follows:

- To build and strengthen students' competencies, qualifications and marketability in four (4) areas:
  - Technical / Practical Skills
  - Business / Soft Skills
  - Industry Training / Experience
  - Certification Preparation
- To cultivate problem-solving and critical thinking skills to solve complex computing problems through identification, assessment and evaluation of networks and security of business systems; effectively design, develop and implement well-secured systems
- To promote students' leadership and decision-making skills; and ability to work with others to function effectively as business network and cybersecurity solution providers
- To strengthen students' awareness in conducting themselves in a manner that is professional ethical, and social
- To adequately prepare students for rewarding careers in computer networks and cybersecurity related fields

## Requirements

| Code   | Title   | Credits |
|--------|---|---------|
| IT-100 | Introduction to Information Technology                | 3       |
| IT-127 | Computer Hardware and Software                        | 3       |
| IT-130 | Database  | 3       |
| IT-135 | CCNA I: Introduction to Networks                      | 3       |
| IT-235 | CCNA II: Switching, Routing & Wireless Essentials     | 3       |
| IT-275 | Networking in a Windows Environment                   | 3       |
| IT-330 | Database Management Systems                           | 3       |
| IT-335 | CCNA III: Enterprise Network, Security and Automation | 3       |
| IT-373 | Network Security                                      | 3       |
| IT-376 | Wireless Technology                                   | 3       |
| IT-390 | Internship Seminar I                                  | 3       |
| IT-396 | Management Information Systems                        | 3       |
| IT-440 | Cloud Foundations                                     | 3       |
| IT-445 | CCNA Cyber Ops  | 3       |
| IT-495 | Senior Seminar  | 3       |

|  |   |            |
|--|---|------------|
| Major Area Electives, Open Electives, or Minor Courses     |   | 12         |
| Major-Related Courses Subtotal                             |   | 57         |
| <b>General Education and Related Courses</b>               |   |            |
| IT-160   | Programming Logic   | 3          |
| IT-295   | Systems Analysis & Design                                 | 3          |
| IT-320   | Operating Systems   | 3          |
| IT-387   | Ethical Hacking   | 3          |
| IT-455   | Security Strategies in Windows Platforms and Applications | 3          |
| IT-477   | Network and Computer Forensics                            | 3          |
| IT-494   | IT Project Management                                     | 3          |
| English Credits <sup>1</sup>                               |   | 12         |
| LA-122   | Fundamentals of Communication                             | 3          |
| MA-115   | Quantitative Reasoning                                    | 3          |
| MA-120   | Finite Mathematics & Linear Modeling                      | 3          |
| MA-142   | Precalculus   | 3          |
| or MA-235  | Statistics for Business Decisions I                       |            |
| Liberal Arts Electives (including IT-Liberal Arts Courses) |   | 18         |
| General Education and Related Courses Subtotal             |   | 63         |
| <b>Total Credits</b>                                       |   | <b>120</b> |

<sup>1</sup> LA-205 Professional Communication may be substituted for one EN (English) course.

## Recommended Sequence

| Course            | Title   | Credits   |
|-------------------|---|-----------|
| <b>Semester 1</b> |   |           |
| IT-100            | Introduction to Information Technology            | 3         |
| EN-111            | College Writing and Critical Analysis             | 3         |
| LA-122            | Fundamentals of Communication                     | 3         |
| LA-ELE            | Liberal Arts Elective                             | 3         |
| MA-115            | Quantitative Reasoning                            | 3         |
| <b>Credits</b>    |   | <b>15</b> |
| <b>Semester 2</b> |   |           |
| IT-127            | Computer Hardware and Software                    | 3         |
| IT-130            | Database (Required Elective)                      | 3         |
| IT-135            | CCNA I: Introduction to Networks                  | 3         |
| EN-121            | Analytical Thinking, Writing & Research           | 3         |
| MA-120            | Finite Mathematics & Linear Modeling              | 3         |
| <b>Credits</b>    |   | <b>15</b> |
| <b>Semester 3</b> |   |           |
| IT-160            | Programming Logic                                 | 3         |
| IT-235            | CCNA II: Switching, Routing & Wireless Essentials | 3         |
| IT-ELE            | IT Elective                                       | 3         |
| EN-206            | Professional Writing and Presentation             | 3         |
| LA-ELE            | Liberal Arts Elective                             | 3         |
| <b>Credits</b>    |   | <b>15</b> |
| <b>Semester 4</b> |   |           |
| IT-295            | Systems Analysis & Design                         | 3         |
| IT-320            | Operating Systems                                 | 3         |
| IT-373            | Network Security                                  | 3         |
| LA-ELE            | Liberal Arts Elective                             | 3         |
| MA-142            | Precalculus                                       | 3         |
| or MA-235         | or Statistics for Business Decisions I            |           |
| <b>Credits</b>    |   | <b>15</b> |
| <b>Semester 5</b> |   |           |
| IT-275            | Networking in a Windows Environment               | 3         |

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|----------------------|--|------------|
| IT-330               | Database Management Systems                                      | 3          |
| IT-335               | CCNA III: Enterprise Network, Security and Automation            | 3          |
| IT-376               | Wireless Technology  | 3          |
| EN-221<br>or LA-205  | Literary Criticism and Analysis<br>or Professional Communication | 3          |
| <b>Credits</b>       |  | <b>15</b>  |
| <b>Semester 6</b>    |  |            |
| IT-387               | Ethical Hacking  | 3          |
| IT-396               | Management Information Systems                                   | 3          |
| IT-440               | Cloud Foundations  | 3          |
| IT-445               | CCNA Cyber Ops   | 3          |
| IT-ELE               | IT Elective  | 3          |
| <b>Credits</b>       |  | <b>15</b>  |
| <b>Semester 7</b>    |  |            |
| IT-390               | Internship Seminar I   | 3          |
| IT-455               | Security Strategies in Windows Platforms and Applications        | 3          |
| IT-494               | IT Project Management  | 3          |
| IT-ELE               | IT Elective  | 3          |
| IT-ELE               | IT Elective  | 3          |
| <b>Credits</b>       |  | <b>15</b>  |
| <b>Semester 8</b>    |  |            |
| IT-477               | Network and Computer Forensics                                   | 3          |
| IT-495               | Senior Seminar   | 3          |
| LA-ELE               | Liberal Arts Elective  | 3          |
| LA-ELE               | Liberal Arts Elective  | 3          |
| LA-ELE               | Liberal Arts Elective  | 3          |
| <b>Credits</b>       |  | <b>15</b>  |
| <b>Total Credits</b> |  | <b>120</b> |

Electives should be used for courses in the technology area you would like to concentrate, such as Networking, Web and Database, Security, or Programming. Suggested courses for Electives: IT-225 Unix/Linux, IT-375 , CJ-101 Introduction to Criminal Justice, CJ-160 Cyber Crime, LA-240 Criminology, CJ-317 Forensics Applied to Computer Investigations, LA-101 Introduction to Psychology and LA-102 Introduction to Sociology.