

University of the Incarnate Word<sup>®</sup>

# Bachelor of Science in **Computer Information Systems** **Cyber Security Track**

School of Mathematics, Science and Engineering

## PROGRAM OVERVIEW

The Bachelor of Science (B.S.) in Computer Information Systems (CIS) at the University of the Incarnate Word is a 120-hour degree program designed to prepare students with the technical, interpersonal, ethical and industry knowledge they need to become information systems professionals. The CIS course curriculum incorporates the best guidance from professional organizations, regional businesses and national-level recommendations for technical curriculum development. This enables our curriculum to reflect current and leading-edge knowledge and skills. The CIS program also continues to incorporate emerging technologies and practices of the global environment in which we live. Students pursuing the Cyber Security concentration specialize in securing the networks and information that users and organizations rely on using such methods as cryptography, digital forensics, intrusion detection/prevention systems, network penetration testing and more.

## QUICK FACTS

Opportunities in computer information systems are growing at a much more rapid pace than in other professions in the U.S., according to the U.S. Bureau of Labor Statistics. Not only do several CIS jobs report a high median wage, but the outlook is extremely promising, with some CIS-related occupations showing a projected growth rate of up to 30 percent in the next 10 years. The extensive career preparation that students receive as part of the CIS program helps ready them for management positions, because, in addition to learning the technical aspects of computer information systems, they will have learned teamwork, problem-solving, visual modeling, applied project management and business processes.

## PREREQUISITES AND COURSES

The requirements for admission to the B.S. in Computer Information Systems program with a Cyber Security Track are the same as the requirements for admission to the University of the Incarnate Word.

## CONTACT

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**Computer Information Systems**  
**Cyber Security Track**

## B.S. in Computer Information Systems - Cyber Security

### FRESHMAN YEAR

#### Fall

CIS 1100: Orientation to CIS (1 hour)  
 CIS 1301: Computer Information Systems (3 hours)  
 CIS 2328: Hardware and Systems Software (3 hours)  
 MATH 2303: Probability and Statistics (3 hours)  
 ENGL 1311: Composition I (3 hours)  
 Modern Language I (3 hours)

**Total Hours: 16**

#### Spring

CIS 2340: Intro to Operating Systems (3 hours)  
 CIS 2330: Programming Languages I (3 hours)  
 CIS 2335: Computer Networks (3 hours)  
 ENGL 1312: Composition II (3 hours)  
 Modern Language II (3 hours)

**Total Hours: 15**

### SOPHOMORE YEAR

#### Fall

CIS 2350: Linux Operating System (3 hours)  
 CIS 2368: Website Development I (3 hours)  
 CIS 3367: Networks and Telecommunications (3 hours)  
 PHIL 1381: Introduction to Philosophy (3 hours)  
 ENGL 2310: World Literature Studies (3 hours)

**Total Hours: 15**

#### Spring

CIS 2333: Scripting Languages (3 hours)  
 CIS 3340: Client-Server Networking (3 hours)  
 CIS 3325: Linux Networking (3 hours)  
 ECON 2301: Macroeconomics (3 hours)  
 PHIL 3312: Logic (3 hours)

**Total Hours: 15**

### JUNIOR YEAR

#### Fall

CIS 3353: Computer Systems Security (3 hours)  
 CIS 3362: Systems Analysis and Design (3 hours)  
 CIS 3310: Database Management (3 hours)  
 CIS 4190: Seminar in CIS (3 hours)  
 Science Course with Lab (4 hours)

**Total Hours: 16**

#### Spring

CIS 3370: Intrusion Detection System (3 hours)  
 CIS 3335: Cryptography (3 hours)  
 Fine Arts (3 hours)  
 HIST 1311, 1312, 1321 or 1322 (3 hours)  
 Elective Course (3 hours)

**Total Hours: 15**

### SENIOR YEAR

#### Fall

CIS 3345: Digital Forensics (3 hours)  
 CIS 4355: Cloud Computing (3 hours)  
 \*1st Additional CIS Specialization Course (3 hours)  
 CIS 4190: Seminar in CIS (1 hour)  
 RELS Religious Studies (3 hours)

**Total Hours: 13**

#### Spring

CIS 4390: CIS Capstone (3 hours)  
 CIS 4370: Network Penetration Testing (3 hours)  
 \*2nd Additional CIS Specialization Course (3 hours)  
 Any Advanced Course (3000+) (3 hours)  
 DWHP 1200: Dimensions of Wellness (2 hours)  
 PEHP Physical Fitness Course (1 hour)

**Total Hours: 15**

**\*Note 1: Specialization options include CIS 3330, CIS 3360, CIS 3365, CIS 3380, CIS 4330, CIS 4375 and CIS 4380.**

120 hours needed to complete the B.S. in Computer Information Systems with a Cyber Security track.

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