

# COMPUTER INFORMATION SYSTEMS: CYBER SECURITY CONCENTRATION, BACHELOR OF SCIENCE

The Bachelor of Science in Computer Information Systems (BS-CIS) with a cyber security concentration prepares students for a variety of IT managerial and technical cyber security and cyber defense positions. Students will gain working knowledge in a multitude of areas such as identifying cyber threats, cyber-exploits, network and server side attacks, defensive IT countermeasures, wireless network security, cryptography, password cracking, web exploitation, cyber terrorism, and various aspects of identifying threat vulnerabilities, IT security risk management, disaster recovery planning, cyber law, information assurance (IA), and more.

Cyber security concentration students will acquire the core cyber security knowledge that is required for key technical and managerial IT security positions. Students will develop the foundational skills needed to be successful in their chosen cyber security career path.

## Program Objectives

The program seeks to develop a deeper understanding of the role of information systems within organizations and the processes that support technology-enabled business development.

At the conclusion of the CIS program, students will demonstrate the ability to:

1. Analyze, design, implement, and maintain an information system.
2. Communicate clearly and effectively in writing and speaking.
3. Work effectively as a team member for a common purpose.
4. Identify ethical issues and provide alternatives or solutions.

## Specific Program Requirements

CIS majors complete a total of 120 credits. These credits include 36 credit hours of general education, 52 credits in CIS major courses, 10 credits of quantitative analysis, 9 credits of required related non CIS courses and 13 credits of electives. CIS majors are encouraged to complete a minor in Business Administration or another Business-related minor.

Course	Title	Credits
<b>General Education</b>		
See General Education below for specific requirements		36
<b>Quantitative Analysis Requirement</b>		
MATH 220	QUANTITATIVE ANALYSIS FOR BUSINESS	4
BSAD 265	INFERENCE STATISTICS & PROBLEM SOLVING	3
BSAD 360	ADVANCED BUSINESS STATISTICS	3.0
<b>Required Related Courses</b>		
BSAD 270	BUSINESS COMMUNICATIONS	3.0
MGMT 201	PRINCIPLES OF MANAGEMENT	3
MGMT 368	PROJECT MANAGEMENT	3
Open Electives <sup>1</sup>		13
<b>CIS Major Courses</b>		

CIS 100	INTRODUCTION TO WORD	1
CIS 103	INTRODUCTION TO POWERPOINT	1
CIS 104	INTRODUCTION TO EXCEL SPREADSHEETS	1
CIS 105	INTRODUCTION TO ACCESS DBMS	1
CIS 150	COMPUTER, ETHICS, AND SOCIETY	3
CIS 171	INTRODUCTION TO JAVA PROGRAMMING	4
CIS 210	INTRODUCTION TO CYBER SECURITY	3
CIS 240	SYSTEMS ANALYSIS & DESIGN	3
CIS 271	ADVANCED PROGRAM DESIGN WITH JAVA	4
CIS 289	NETWORK CONCEPTS	3
CIS 311	INTRODUCTION TO WEB DEVELOPMENT	3
CIS 315	LINUX FUNDAMENTALS	3
CIS 350	DATABASE MANAGEMENT	3
CIS 432	SENIOR PROFESSIONAL PROJECT	6
CIS 493	SENIOR SEMINAR	1
CIS 3/400	Concentration Area Electives	12
Total Credits		120

<sup>1</sup> CIS majors may select one of the following concentration areas and complete the indicated required courses (12 credits of 3/400 upper division electives) within the chosen concentration.

The general elective courses must include the specific courses below:

Course	Title	Credits
<b>Humanities</b>		
COMR 103	SPEAKING AND LISTENING (or equivalent)	3
<b>Social Science</b>		
ECON 201 & ECON 202	PRINCIPLES OF MACROECONOMICS and PRINCIPLES OF MICROECONOMICS	6
<b>Mathematics</b>		
MATH 101	INTRODUCTORY COLLEGE MATHEMATICS	3.0

## Cyber Security Concentration Area Electives

Course	Title	Credits
CIS 401	Network Systems Administration	3
CIS 460	Cyber Security & Defense	3
CIS 461	IT Security Risk Management	3
CIS 462	Computer Forensics	3
Total Credits		12

In addition to the requirement to complete (BSAD 265 Inferential Statistics & Problem Solving (3 c.h.), BSAD 270 Business Communications (3 c.h.), BSAD 360 Advanced Business Statistics (3 c.h.), ECON 201 Principles of Macroeconomics (GT-SS1) (3 c.h.), ECON 202 Principles of Microeconomics (GT-SS1) (3 c.h.), MGMT 201 Principles of Management (3 c.h.), MGMT 368 Project Management (3 c.h.), MATH 101 Introductory College Mathematics (GT-MA1) (3 c.h.) and MATH 220 Quantitative Analysis for Business (4 c.h.)), CIS majors are strongly encouraged to complete a minor in Business Administration.

## Specific Graduation Requirements

- Students majoring in computer information systems must maintain grades of C or higher in all CIS courses. In addition, all required CIS prerequisites must be completed with a grade of C or higher.

- Students must complete at least 120 semester hours in an approved program of study, including 52 hours in the major.
- Students must complete a minimum of 21 credits of CIS upper-division course work. At least 16 of these upper-division CIS credits must be taken in residence.
- Students must complete a course planning worksheet and participate in the advisement process with a CIS faculty advisor.

## Summary of Graduation Requirements (CIS)

General Education: 36<sup>1</sup>

Quantitative Analysis Requirement: 10

Required Related: 9

Open Electives: 13

Major: 52

**TOTAL (minimum credits): 120**

## Planning Sheet

Disclaimer: The Planning Sheet is designed as a guide for student's planning their course selections. The information on this page provides only a suggested schedule. Actual course selections should be made with the advice and consent of an academic advisor. While accurately portraying the information contained in the college catalog, this form is not considered a legal substitute for that document. Students should become familiar with the catalog in effect at the time in which they entered the institution.

Course	Title	Credits
<b>Year 1</b>		
<b>Fall</b>		
CIS 100	Introduction to Word	1
CIS 103	Introduction to PowerPoint	1
CIS 104	Introduction to Excel Spreadsheets	1
CIS 105	Introduction to Access DBMS	1
CIS 150	Computer, Ethics, and Society	3
ENG 101	Rhetoric & Writing I (GT-CO1)	3
MATH 101	Introductory College Mathematics (GT-MA1)	3
Credits		13
<b>Spring</b>		
CIS 171	Introduction to Java Programming	4
CIS 185	PC Architecture	3
ENG 102	Rhetoric & Writing II (GT-CO2)	3
MATH 220	Quantitative Analysis for Business	4
Credits		14
<b>Year 2</b>		
<b>Fall</b>		
CIS 240	Systems Analysis & Design	3
CIS 315	Linux Fundamentals	3
COMR 103	Speaking and Listening	3
ECON 201	Principles of Macroeconomics (GT-SS1)	3
General Education		4
Credits		16
<b>Spring</b>		
BSAD 265	Inferential Statistics & Problem Solving	3
CIS 271	Advanced Program Design with Java	4
CIS 289	Network Concepts	3
MGMT 201	Principles of Management	3
General Education		3
Credits		16

### Year 3

#### Fall

BSAD 360	Advanced Business Statistics	3
CIS 311	Introduction to Web Development	3
CIS 350	Database Management	3
ECON 202	Principles of Microeconomics (GT-SS1)	3
General Education		4
Credits		16

#### Spring

BSAD 270	Business Communications	3
General Education		6
Elective	<sup>3</sup> credits must be upper division CIS course.	6
Credits		15

### Year 4

#### Fall

MGMT 368	Project Management	3
CIS 401	Network Systems Administration	3
CIS 462	Computer Forensics	3
Elective		7
Credits		16

#### Spring

CIS 432	Senior Professional Project	6
CIS 493	Senior Seminar	1
CIS 460	Cyber Security & Defense	3
CIS 461	IT Security Risk Management	3
Credits		13
Total Credits		119