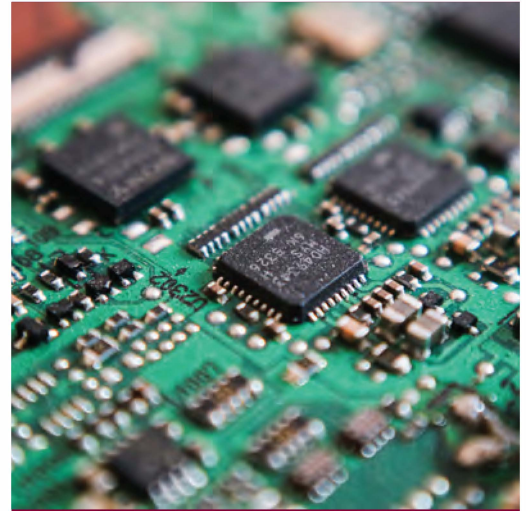


# COMPUTER SCIENCE & CYBERSECURITY PROGRAMS



## OVERVIEW OF THE PROGRAM:

Computer science is the study of the theoretical foundations of computing and their applications in computer systems. It involves the study and implementation of the algorithmic processes that describe and transform information. Computer science is intended for students with career objectives in a wide range of computing and computer-related professions, e.g., computer programmers, systems analysts, software developers, database administrators, information security analysts, etc. In addition to receiving the necessary skills in computer science, the students also receive a well-balanced mathematics and general studies curriculum.

Students interested in computer science also have the option of choosing a Cybersecurity concentration. Cybersecurity students develop theoretical knowledge and hands-on experience with the tools and protocols needed to understand, implement, and manage security technologies as well as gain insight into the legal, social, and political dynamics of the cyber universe.

## EMPLOYMENT OPPORTUNITIES:

Computer science is a broad discipline that encompasses many areas of specialization, with an ever-growing array of opportunities. The computer science degree programs at Fairmont State University have been designed to provide students with an understanding of the field that is broad enough for them to find employment in a wide spectrum of private companies or government agencies and make them competitive for graduate school and advanced study. According to Bureau of Labor Statistics, it is expected that the employment opportunities in computing and cybersecurity fields will continue to increase much faster than the average for all occupations over the next ten years.

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## BACHELOR OF SCIENCE IN COMPUTER SCIENCE MODEL SCHEDULE

### FRESHMAN FIRST SEMESTER

COMP 1100 INTRODUCTION TO COMPUTER SCIENCE	3
COMP 1120 PRINCIPLES OF PROGRAMMING I	3
MATH 1561 MATHEMATICAL REASONING	3
ENGL 1101 WRITTEN ENGLISH I (CORE CURRICULUM)	3
SOAR 1100 FIRST YEAR SEMINAR (CORE CURRICULUM)	1
CITIZENSHIP (CORE CURRICULUM)	3
<b>TOTAL</b>	<b>16</b>

### FRESHMAN SECOND SEMESTER

COMP 1130 PRINCIPLES OF PROGRAMMING II	4
MATH 2562 INTRODUCTION TO DISCRETE MATHEMATICS	3
ENGL 1102 WRITTEN ENGLISH II (CORE CURRICULUM)	3
FINE ARTS (CORE CURRICULUM)	3
SOCIAL SCIENCE (CORE CURRICULUM)	3
<b>TOTAL</b>	<b>16</b>

### SOPHOMORE FIRST SEMESTER

COMP 2200 OBJECT-ORIENTED PROGRAMMING	3
COMP 2270 DATA STRUCTURES	3
MATH 2501 CALCULUS I (CORE CURRICULUM)	4
ORAL COMMUNICATIONS (CORE CURRICULUM)	3
TECHNOLOGY (CORE CURRICULUM)	3
<b>TOTAL</b>	<b>16</b>

### SOPHOMORE SECOND SEMESTER

COMP 2201 MACHINE ORGANIZATION	3
COMP 2230 CLIENT-SERVER SYSTEMS	3
MATH 2502 CALCULUS II	4
FREE ELECTIVES	6
<b>TOTAL</b>	<b>16</b>

### JUNIOR FIRST SEMESTER

COMP 3330 ANALYSIS OF ALGORITHMS	3
COMP 3340 OPERATING SYSTEMS	3
SCIENCE ELECTIVE (CORE CURRICULUM)	4
HUMANITIES (CORE CURRICULUM)	3
FREE ELECTIVE	3
<b>TOTAL</b>	<b>16</b>

### JUNIOR SECOND SEMESTER

COMP 3395 ETHICAL ISSUES IN COMPUTING	3
MAJOR ELECTIVE	3
SCIENCE ELECTIVE	4
FREE ELECTIVES	6
<b>TOTAL</b>	<b>16</b>

### SENIOR FIRST SEMESTER

COMP 4400 AUTOMATA THEORY	3
COMP 4410 DATABASE MANAGEMENT	3
MAJOR ELECTIVE	3
FREE ELECTIVE	3
<b>TOTAL</b>	<b>12</b>

### SENIOR SECOND SEMESTER

COMP 4440 SOFTWARE ENGINEERING	4
MAJOR ELECTIVE	3
FREE ELECTIVES	5
<b>TOTAL</b>	<b>12</b>

## BACHELOR OF SCIENCE IN COMPUTER SCIENCE (CYBERSECURITY CONCENTRATION) MODEL SCHEDULE

### FRESHMAN FIRST SEMESTER

COMP 1100 INTRODUCTION TO COMPUTER SCIENCE	3
COMP 1120 PRINCIPLES OF PROGRAMMING I	3
MATH 1561 MATHEMATICAL REASONING	3
ENGL 1101 WRITTEN ENGLISH I (CORE CURRICULUM)	3
SOAR 1100 FIRST YEAR SEMINAR (CORE CURRICULUM)	1
CITIZENSHIP (CORE CURRICULUM)	3
<b>TOTAL</b>	<b>16</b>

### FRESHMAN SECOND SEMESTER

COMP 1130 PRINCIPLES OF PROGRAMMING II	4
MATH 2562 INTRODUCTION TO DISCRETE MATHEMATICS	3
ENGL 1102 WRITTEN ENGLISH II (CORE CURRICULUM)	3
CRIM 2250 CYBERCRIME	3
FINE ARTS (CORE CURRICULUM)	3
<b>TOTAL</b>	<b>16</b>

### SOPHOMORE FIRST SEMESTER

COMP 2200 OBJECT-ORIENTED PROGRAMMING	3
COMP 2220 FUNDAMENTALS OF COMPUTER SECURITY	3
COMP 2270 DATA STRUCTURES	3
MATH 2501 CALCULUS I (CORE CURRICULUM)	4
ORAL COMMUNICATIONS (CORE CURRICULUM)	3
<b>TOTAL</b>	<b>16</b>

### SOPHOMORE SECOND SEMESTER

COMP 2201 MACHINE ORGANIZATION	3
COMP 2230 CLIENT-SERVER SYSTEMS	3
BISM 2600 INTRODUCTION TO NETWORK ADMINISTRATION	3
TECHNOLOGY (CORE CURRICULUM)	3
SOCIAL SCIENCE (CORE CURRICULUM)	3
<b>TOTAL</b>	<b>15</b>

### JUNIOR FIRST SEMESTER

COMP 3340 OPERATING SYSTEMS	3
COMP 3380 INTRODUCTION TO CRYPTOGRAPHY	3
SCIENCE ELECTIVE (CORE CURRICULUM)	4
HUMANITIES (CORE CURRICULUM)	3
FREE ELECTIVE	3
<b>TOTAL</b>	<b>16</b>

### JUNIOR SECOND SEMESTER

COMP 3390 NETWORK SECURITY	4
COMP 3395 ETHICAL ISSUES IN COMPUTING	3
MAJOR ELECTIVE	3
FREE ELECTIVES	6
<b>TOTAL</b>	<b>16</b>

### SENIOR FIRST SEMESTER

COMP 4410 DATABASE MANAGEMENT	3
COMP 4415 VULNERABILITY ASSESSMENT	4
FREE ELECTIVES	6
<b>TOTAL</b>	<b>13</b>

### SENIOR SECOND SEMESTER

COMP 4440 SOFTWARE ENGINEERING	4
COMP 4495 CYBERSECURITY SENIOR PROJECT	3
FREE ELECTIVES	5
<b>TOTAL</b>	<b>12</b>



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### CONTACT INFORMATION

Dr. Mahmood Hossain  
Professor of Computer Science  
Department of Computer Science and Math  
201G Engineering Technology Building  
Mahmood.Hossain@fairmontstate.edu  
Phone: (304) 367-4967