Computing (CSI)

Division of Computing

Mission: The mission of the Division of Computing is to provide students with an opportunity to obtain the knowledge of computing necessary to succeed in today's increasingly technical world. The division's curriculum focuses on both theoretical knowledge and practical applications that enrich analytic, creative, and research capabilities essential to success in various computing fields. Our curriculum provides students the opportunities to pursue individual interests through special topic courses, internships, and projects that further enhance their learning experience outside the traditional classroom setting. Introductory courses in various computer-related topics are offered for non-major students.

Student Learning Outcomes
Students will:

- Understand and be able to demonstrate analytic and critical reasoning ability through algorithmic development and software implementation.
- Communicate effectively utilizing current technology in information systems. This includes the acquisition, summarization, and presentation of existing and synthesized knowledge.
- Demonstrate an understanding of computer and communication systems and hardware and software systems, including the design, development, implementation, and integration into an organization.

Students may obtain a Bachelor of Science degree with a major in computer science, computer information systems, computational science, cybersecurity, or management information systems. These majors focus on the scientific and business views of computing. Students in these majors develop the skills essential to becoming quality programmers. In addition, the upper-division requirements available to each of the majors provide the necessary specialized knowledge and skills.

Students within all majors experience a variety of programming environments including many microcomputer systems as well as multi-user environments. Students are exposed to a number of modern programming languages appropriate to their selected majors and gain valuable experience with a wide selection of computer hardware and resources. This variety of resources coupled with elective courses allows students to personalize the specialized knowledge they wish to obtain.

Students with majors in computer science, computer information systems, computational science, cybersecurity, or management information systems must complete all courses required for the major with a minimum of a 2.25 cumulative grade-point average. All courses must have a grade of C- or better to fulfill the prerequisite requirement. In addition, all courses for the major and minor must be completed with a grade of C- or better.

The division also offers minors in both computer science and computer information systems. Students who complete the required courses for the minor can expect to obtain programming skills and general computing knowledge.

COMPUTER SCIENCE

- **Major: 61 credit hours**
- **Minor: 22 credit hours**

PROGRAM REQUIREMENTS:

- **Major/Minor GPA required for graduation: 2.25.**
- **Must take any two science courses with a laboratory requirement.**
- **All courses for the major and minor must be completed with a grade of C- or better.**

Description of Major: Computer science majors are provided with the systems programming and problem-solving skills commonly expected in technical positions at employers that require strong analytical and interpersonal skills. In addition, they obtain the necessary theoretical background required to pursue further education and advanced degrees. Majors in computer science should expect employment in both the industrial sector and scientific lab environments.

COMPUTER SCIENCE MAJOR REQUIREMENTS	**61 crs.**
REQUIRED COURSES	**52 crs.**

CSI 130	INTRODUCTION TO COMPUTING I	(5)
CSI 230	INTRODUCTION TO COMPUTING II	(5)
CSI 235	MATHEMATICS OF COMPUTING	(3)
CSI 300	COMPUTER ORGANIZATION AND ARCHITECTURE	(3)
CSI 330	DATA STRUCTURES AND ALGORITHMS	(3)
CSI 335	ANALYSIS OF ALGORITHMS	(3)
CSI 345	THE STRUCTURE OF OPERATING SYSTEMS	(3)
CSI 410	SOFTWARE ENGINEERING	(3)
CSI 450	COMPUTER NETWORKING AND COMMUNICATIONS	(3)
CSI 465	COMPILER DESIGN	(3)
CSI 497	SENIOR SEMINAR I	(1)
CSI 498	SENIOR SEMINAR II	(2)
ENG 360	INTERDISCIPLINARY PROFESSIONAL AND TECHNICAL WRITING (W)	(3)
MTH 210	CALCULUS I	(4)
MTH 211	CALCULUS II	(4)
MTH 170	STATISTICS	(4)

THREE COURSES FROM THE FOLLOWING **9 crs.**

CSI 366	NUMERICAL ANALYSIS	(3)
CSI 369	SOCIAL, LEGAL, AND ETHICAL ISSUES OF COMPUTING (W)	(3)
CSI 380-389	SPECIAL TOPICS IN COMPUTING AND INFORMATION SYSTEMS	(3)
CSI 415	DATABASE MANAGEMENT SYSTEMS	(3)
CSI 420	ADVANCED DATABASE CONCEPTS	(3)
CSI 430	COMPUTER GRAPHICS AND USER INTERFACE DESIGN	(3)
CSI 435	FORMAL LANGUAGES AND AUTOMATA (W)	(3)
CSI 440	ARTIFICIAL INTELLIGENCE	(3)
CSI 470	INTERNSHIP IN COMPUTING AND INFORMATION SCIENCE	(3)
CSI 480	INDEPENDENT STUDY IN COMPUTING AND INFORMATION SCIENCE	(3)
CSI 337	INFORMATION SECURITY	(3)
CSI 445	DATA MINING	(3)

COMPUTER SCIENCE MINOR REQUIREMENTS **22 crs.**

CSI 130	INTRODUCTION TO COMPUTING I	(5)
CSI 230	INTRODUCTION TO COMPUTING II	(5)
CSI 300	COMPUTER ORGANIZATION AND ARCHITECTURE	(3)
CSI 330	DATA STRUCTURES AND ALGORITHMS	(3)
	TWO UPPER-LEVEL CSI ELECTIVES	(6)