COMPUTER SCIENCE (B.S.)

Introduction/Mission

The undergraduate major in Computer Science is intended to enable a student to pursue further studies in Computer Science or in related fields of Science, Engineering, and Business and to enter the work force as an entry level computer professional. The program combines a very thorough preparation in the fundamentals of Computer Science and related fields with the opportunity for more advanced work in either Computer Science or Computer Engineering.

Objectives

The educational objectives of the Computer Science undergraduate program at Jackson State University are to graduate students with:

1. An understanding of and the ability to apply the core principles and theories of Computer Science;
2. The motivation and preparation to engage in life-long learning, including entering graduate programs in Computer Science and related fields;
3. The professional skills needed for employment, while being able to adapt to rapidly changing technology;
4. An understanding of the ethical responsibilities of a computer professional and the social impact of computing.

Accreditation

The Undergraduate Program in Computer Science is accredited by the Computing Accreditation Commission of ABET, https://www.abet.org.

Other Requirements/Offerings

1. Students may need Pre-Calculus courses if indicated by math assessment score.
2. Students with no computer exposure must take CSC 115 DIGITAL COMPUTER PRINCIPLES.
3. Laboratory courses must be taken during the same semester as lecture for Engineering, Mathematics, Biology, Chemistry, and Physics courses.
4. Students must take the ETS Major Field Examination in Computer Science.
5. A minimum grade of "C" is required in all Computer Science Courses. Prerequisite courses must be successfully completed before taking the next courses.

Major Requirements

Code	Title	Hours
CSC 118	COMPUTER SCIENCE I	3
CSC 119	COMPUTER SCIENCE II	3
CSC 225	DISCRETE STRUCTURES	3
CSC 228	DATA STRUCTURES & ALGORITHMS	3
CSC 215	DATA ANALYTICS	3
CSC 216	COMPUTER ARCHITECTURE & ORGNZA	3
CSC 323	ALGORITHM DESIGN AND ANALYSIS	3
CSC 330	DATABASE SYSTEMS	3
CSC 435	COMPUTER NETWORKS	3
CSC 360 Client Server Programming		3
CSC 450	SENIOR PROJECT	3
CSC 475	SOFTWARE ENGINEERING	3
CSC 325	OPERATING SYSTEMS	3
CSC 350	ORGANIZATION OF PROGRAM LANGUA	3
CSC 390	COMPUTER SCIENCE SEMINAR	1
ECE 212 & ECEL 212	DIGITAL LOGIC and DIGITAL LOGIC LABORATORY	4
MATH 241	CALCULUS I WITH LABORATORY	3
MATH 242	CALCULUS II WITH LABORATORY	3
MATH 243	CALCULUS III WITH LABORATORY	3
MATH 307	PROBLTY & STATISTICS/ENGINEERG	3
BIO 101 & BIOL 101	INTRO TO BIOLOGICAL SCIENCE and INTRO TO BIO SCI LAB	3
CHEM 141 & CHML 141	GENERAL CHEMISTRY I and GENERAL CHEMISTRY LAB	4
PHY 211 & PHYL 211	General Physics I and GENERAL PHYSICS LAB I	4
Computer Science Electives		12
Total Hours		**82**

Curriculum Map

Course	Title	Hours
Freshman		
Fall		
ENG 104 or ENG 103 or ENG 111	COMPOSITION I or English Composition I with Co-requisite Support or COMPOSITION & LITERATURE FOR L	3
CSC 118	COMPUTER SCIENCE I	3
MATH 241	CALCULUS I WITH LABORATORY	3
UNIV 100	UNIVERSITY SUCCESS	2
Humanities & Fine Arts Option		3
Social & Behavioral Science Option		3
	Hours	**17**
Spring		
CSC 119	COMPUTER SCIENCE II	3
CSC 225	DISCRETE STRUCTURES	3
ENG 105 or ENG 112	COMPOSITION II or COMPOSITION	3
MATH 242	CALCULUS II WITH LABORATORY	3
Pathway Option		3
	Hours	**15**
Sophomore		
Fall		
CSC 228	DATA STRUCTURES & ALGORITHMS	3
ECE 212 & ECEL 212	DIGITAL LOGIC and DIGITAL LOGIC LABORATORY	4
MATH 243	CALCULUS III WITH LABORATORY	3
Natural Science Option w/Lab		3
Pathway Option		3
	Hours	**16**
Spring		
CHEM 141 & CHML 141	GENERAL CHEMISTRY I and GENERAL CHEMISTRY LAB (Science Elective II)	4
CSC 215	DATA ANALYTICS (N)	3
CSC 216	COMPUTER ARCHITECTURE & ORGNZA	3
MATH 307	PROBLTY & STATISTICS/ENGINEERG	3
UNIV 200	CIVIC ENGAGEMENT	1
Pathway Option		3
	Hours	**17**

Junior		
Fall		
CSC 325	OPERATING SYSTEMS	3
CSC 350	ORGANIZATION OF PROGRAM LANGUA	3
CSC 390	COMPUTER SCIENCE SEMINAR	1
PHY 211 & PHYL 211	General Physics I and GENERAL PHYSICS LAB I	4
Humanities & Fine Arts Option		3
	Hours	**14**
Spring		
CSC 323	ALGORITHM DESIGN AND ANALYSIS	3
CSC 330	DATABASE SYSTEMS	3
Humanities & Fine Arts Option		3
CSC 360 Client Server Programming		3
Social & Behavioral Science Option		3
	Hours	**15**
Senior		
Fall		
CSC 435	COMPUTER NETWORKS	3
CSC 437	COMPUTER SECURITY	3
CSC 475	SOFTWARE ENGINEERING	3
Computer Science Elective I		3
Computer Science Elective II		3
	Hours	**15**
Spring		
CSC 450	SENIOR PROJECT	3
Computer Science Elective III		3
Computer Science Elective III		3
Computer Science Elective IV		3
	Hours	**12**
	Total Hours	**121**

Notes:

- Candidates that transfer 12 or more hours of college credit are exempt from UNIV 100 UNIVERSITY SUCCESS; however, the student must take 2 hours of general electives to replace the UNIV course.
- On-line Graduation Clearance (**to be completed during the graduating semester only**).

Student Learning Outcomes

Each student who graduates from the Undergraduate Program in Computer Science will be able to:

1. Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
2. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
3. Communicate effectively in a variety of professional contexts.
4. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
5. Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
6. Apply computer science theory and software development fundamentals to produce computing-based solutions.