COMPUTER SCIENCE (BSCS)

Description

The goal of the B.S.C.S. program is to give each student a thorough professional education in contemporary computer science while allowing sufficient flexibility for the student to pursue individual interests in related technical fields.

Minimum Total Credit Hours: 127

Goals/Mission Statement

Mission Statement

The Department of Computer and Information Science at the University of Mississippi seeks to provide high-quality programs of instruction, research, and service and to refine them continuously to meet the evolving needs of its students and society. Toward this end, the Department shall:

- enable its undergraduate students to master the fundamental principles of computing and to develop the skills needed to solve practical problems using contemporary computer-based technologies and practices;
- empower its graduate students to understand advanced concepts, develop new technologies and methods, and expand the base of fundamental knowledge;
- cultivate a community of professionals that encourages scholarship and facilitates both applied and theoretical research;
- serve its constituents in government, industry, and the public as a resource on state-of-the-art computing science and information technology.

BSCS Program Educational Objectives

As effective members of the Computer Science profession:

1. Graduates demonstrate the ability to solve computing problems commensurate with their levels of professional experience
2. Graduates demonstrate the ability to contribute effectively to the benefit of teams
3. Graduates continue to update their professional knowledge and skills to adapt to changes in technology and the evolving needs of society and the workplace

BSCS Student Outcomes

In keeping with the accreditation of the BSCS program by Computing Accreditation Commission of ABET, Inc., the Department helps students have the ability 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.

Degree Requirements

The academic regulations for this degree program, as entered in the University of Mississippi Catalog, are in effect for the current or selected academic year and semester. The University of Mississippi reserves the right to

1. change or withdraw courses;
2. change rules for registration, instruction, and graduation; and
3. change other regulations affecting the student body at any time.

General Education

Code	Title	Hours
Select one of the following First Year Writing I courses:		3
HONR 1010	Freshman Honors I	
WRIT 1000	Introduction to College Writing	
WRIT 1010	First-Year Writing I	
Select one of the following First Year Writing II courses:		3
WRIT 1020	First-Year Writing II	
LIBA 1020	First Year Seminar	
HONR 1020	Freshman Honors II	
Select three hours of fine arts from the following: [1]		3
Art History (ARTH)		
Music (MUSC)		
Dance (DANC)		
Theatre Arts (THEA)		
LIBA 1300	Introduction to the Fine Arts	
LIBA 2040	Interdisciplinary Arts	
LIBA 3140	Advanced Interdisciplinary Arts	
MUSC 1010	Introduction to Music Literature	
MUSC 1020	Fundamentals of Music Theory	
MUSC 1030	Introduction to Music	
MUSC 1040	Introduction to World Music Cultures	
MUSC 1050	Music Theory and Analysis I	
DANC 2000	Dance Appreciation	
THEA 2010	Appreciation of the Theatre	
THEA 2020	Introduction to Cinema	
Select six hours of social sciences courses from the following:		6
Anthropology (ANTH)		
Economics (ECON)		
LIBA 2030	Interdisciplinary Social Sciences	
LIBA 3130	Advanced Interdisc Social Science	
Political science (POLS)		
Psychology (PSYC)		
Sociology (SOCY)		
HONR 1010	Freshman Honors I [2]	
HONR 1020	Freshman Honors II [2]	
Select three hours of humanities courses from the following:		3
AAST 2010	African American Experience I	
AAST 2020	African American Experience II	

Classics (CLSC)		
ENVS 1010	Humanities and the Environment	
ISOM 2010	Introduction to Gender Studies	
ISOM 2020	Introduction to Queer Studies	
History (HIST)		
LIBA 2020	Interdisciplinary Humanities	
LIBA 3050	Humanities and the Experience of War	
LIBA 3120	Advanced Interdisciplinary Humanities	
Literature (ENGL 1030, 2220-2226)		
Philosophy (PHIL)		
Religion (RELG)		
Southern studies (SSTU 1000-level)		
HONR 1010	Freshman Honors I [2]	
HONR 1020	Freshman Honors II [2]	
Select three hours of Fine Arts, Humanities, or Modern language		3
Modern Language include courses in courses in Ancient Greek (GREK), Arabic (ARAB), Swahili (SWAH), Japanese (JAPN), Korean (KORE), Latin (LATN), Portuguese (PORT), Russian (RUSS), Spanish (SPAN		
Select three hours of literature survey		3
ENGL 2220	Survey in Literary History	
ENGL 2221	Survey of World Literature to 1650	
ENGL 2222	Survey of World Literature since 1650	
ENGL 2223	Survey of American Lit to the Civil War	
ENGL 2224	Survey of American Lit since Civil War	
ENGL 2225	Survey of British Lit to 18th Century	
ENGL 2226	Survey of Brit Lit since Romantic Period	
SPCH 1050	Business and Professional Speech	
Total Hours		**24**

[1] Studio and workshop courses cannot be used to satisfy this requirement.

[2] if not being used to fulfill composition requirements

General Education II

Code	Title	Hours
Select eight hours of laboratory science of the following:		8
CHEM 1050	General Chemistry I	
CHEM 1060	General Chemistry II	
CHEM 1051	General Chemistry Laboratory I	
CHEM 1061	General Chemistry Laboratory II	
PHYS 2110	Physics for Science & Engineering I	
PHYS 2120	Physics for Science & Engineering II	
PHYS 2111	Lab Physics for Science & Engineering I	
PHYS 2121	Lab Physics for Science & Engineering II	
BISC 1600	Biological Sciences I	
BISC 1610	Biological Sciences I Laboratory	
BISC 1620	Biological Sciences II	
BISC 1630	Biological Sciences II Laboratory	
MATH 2611	Unified Calculus & Analytic Geometry I	3
MATH 2612	Unified Calculus & Analytic Geometry II	3
Total Hours		**14**

Major Requirements

Code	Title	Hours
CISE 1011	Computer Science I	3
CISE 1012	Computer Science II [1]	3
CISE 2011	Computer Science III	3
CSCI 2023	Computer Org. & Assembly Language	3
CSCI 3000	Social Responsibility in Comp. Science	1
CSCI 3075	Introduction to Database Systems	3
CSCI 3087	Software Design and Development	3
CSCI 4023	Introduction to Operating Systems	3
CSCI 4033	Algorithm and Data Structure Analysis	3
CSCI 4050	Formal and Programming Languages	3
CSCI 4996A	Senior Project	3
Total Hours		**31**

- School of Engineering GPA
  - Must be at least a 2.0.

Major Requirements II

Code	Title	Hours
ENGR 1010 & ENGR 1110	Engineering Fundamentals and Engineering Fundamentals Lab	3
Select three credit hours of additional science electives from the following:		3
ASTR 1212	Intro Astronomy of the Solar System	
ASTR 1312	Intro Astronomy of Stars and Galaxies	
CHEM 2210	Elementary Organic Chemistry I	
CHEM 2220	Elementary Organic Chemistry II	
GEOL 1010	Physical Geology	
GEOL 1020	Historical Geology	
GEOL 1030	Earth Dynamics	
GEOL 1040	Environmental Geology - Hazards	
GEOL 1050	Environmental Geology - Resources	
GEOL 1070	Introduction to Oceanography	
GEOL 1200	Dinosaurs [1]	
Bio, Chem, Phys & Geo 3000+ and any of our Lab Science not already taken		
ELEC 2350	Principles of Digital Systems	3
ELEC 2360	Digital Systems Laboratory I	1
MATH 2613	Unified Calculus & Analytic Geometry III	3
or MATH 3190	Introduction to Linear Algebra	
MATH 3010	Discrete Mathematics	3
MATH 3020	Applied Modern Algebra	3
or MATH 4010	Combinatorics	
MATH 3750	Introduction to Statistics I	3
Total Hours		**22**

[1] not both 1010 and 1040

Non-minor Requirements

- Complete either 18 hours of course work for an approved minor or other technical electives chosen in consultation with the academic advisor.

Concentration - Standard

Code	Title	Hours
Select 15 hours of computer science electives chosen from computer science courses at the 3000 level or above		15

Concentration - Data Science

Code	Title	Hours
CSCI 3043	Fundamentals of Data Science	3
CSCI 4043	Advanced Data Science	3
Select nine additional hours of data science courses from the following:		9
CSCI 3045	Information Storage and Retrieval	
CSCI 3053	Introduction to Numerical Methods	
CSCI 4044	Information Visualization	
CSCI 4999C	Special Topics in Data Science	
CSCI 5017	Natural Language Processing	
CSCI 5043	Data Mining	
Total Hours		**15**

Concentration - Computer Security

Code	Title	Hours
CSCI 3025	Foundations of Computer Security	3
CSCI 3061	Introduction to Computer Networks	3
CSCI 4026	System Security	3
CSCI 4027	Network Security	3
Select three hours of computer security courses from the following:		3
CSCI 3023	Systems of Programming	
CSCI 4999C	Special Topics in Data Science	
CSCI 5023	Operating Systems	
CSCI 5061	Computer Networks	
Total Hours		**15**