THE UNIVERSITY of MISSISSIPPI

Emphasis - Data Science

- B.S.C.S. in Computer Science
- Emphasis - Data Science
- Degree Requirements

B.S.C.S. in Computer Science

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 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.

General Education Requirements

Candidates for the B.S.C.S. degree must successfully complete the following general education requirements:

- 6 hours from Writ 100, Writ 101, or Hon 101; Writ 102, Liba 102, or Hon 102;
- 3 hours of literature chosen from Engl 221-226;
- 8 hours of laboratory science chosen from Chem 105, 106, 115, 116 or Phys 211, 212, 221, 222 or Bisc 160, 161, 162, 163;
- 6 hours from Math 261 and 262;
- 3 hours from Spch 102 or Spch 105;
- 6 hours of social science chosen from anthropology, economics, political science, psychology, and sociology;
- 3 hours of humanities chosen from classics, English, history, modern languages, philosophy, religion, and African American studies, gender studies, or southern studies;
- 3 hours of fine arts chosen from courses in the history, appreciation, and criticism of art, dance, music, and theatre arts (Courses emphasizing the enhancement of skills and performance are not acceptable.);
- 3 additional hours of fine arts, languages (modern, Greek, or Latin), or humanities.

Course Requirements

Candidates for the B.S.C.S. degree must successfully complete the following requirements in addition to the general education requirements:

- 12 hours from Math 301, 302 or 401, 375, and either 263 or 319;
- 6 additional hours of science electives chosen from the laboratory science courses listed above or from Astr 103, 104, Chem 221, 222, Geol 101, 102, 103, 104, 105 (except not both Geol 101 and 104), and biology, chemistry, physics, and geology courses at the 300-level and above; (If a science course has a separate, but coordinated laboratory course, the student is strongly encouraged to enroll for the laboratory section as well as the lecture section.)
- 4 hours from El E 235, 236;
- 31 hours from Csci 111, 112, 211, 223, 300, 311, 387, 423, 433, 450, and 487;
- 15 hours of computer science electives chosen from 300 level and above or other approved electives;
- 18 hours of course work for an approved minor or other technical electives chosen in consultation with the academic advisor.

Emphases:

Students can earn an emphasis in either computer security or data science by completing the 15 hours of required Csci 300+ electives as follows:

Computer Security Emphasis:

- Csci 325 Foundations of Computer Security
- Csci 361 Introduction to Computer Networks
- Csci 426 System Security
- Csci 427 Network Security
- One of: CSci 323-Systems of Programming, CSci 475-Introduction to Database Systems, CSci 491-Special Topics in Computer Security, CSci 523-Operating Systems, or CSci 561-Computer Networks

Data Science Emphasis:

- Csci 343 Fundamentals of Data Science
- Csci 443 Advanced Data Science
- Csci 475 Introduction to Database Systems
- Two of: CSci 345-Information Storage and Retrieval, CSci 444-Information Visualization, CSci 492-Special Topics in Data Science, CSci 517-Natural Language Processing, or CSci 543-Data Mining.

*Note that a student may earn at most ONE emphasis on the B.S.C.S. degree.

Emphasis - Data Science
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.

B.S.C.S. in Computer Science
General Education

REQUIREMENT	HOURS	DESCRIPTION
First Year Writing I	3	Complete Hon 101, Writ 100 or Writ 101 with a passing grade.
First Year Writing II	3	Complete one of the following courses with a passing grade: Liba 102, Writ 102 or Hon 102.
3 hrs literature survey	3	Complete 3 hours of literature survey chosen from Engl 221, Engl 222, Engl 223, Engl 224, Engl 225, or Engl 226.
Spch 102 or 105	3	Complete Spch 102 or Spch 105 with a passing grade.
6 hrs social science	6	Complete 6 hours of social sciences choosing from the following; economics, anthropology, political science, psychology, and sociology.
3 hrs humanities	3	Successfully complete 3 hrs of humanities with a passing grade chosen from the following: African American studies (Aas 201, 202), classics (Clc), environmental studies (Envs 101), gender studies (G St 201, 202), history (Hst), liberal arts (Liba 202, 305, 312), literature (Eng 103, 220-226), philosophy (Phil), religion (Rel), Southern studies 100-level, and either Hon 101 or 102 (if not being used to fulfill composition requirements).
3 hrs fine arts	3	Complete 3 hrs of fine arts with a passing grade chosen from art history, music, dance, and theatre arts. Studio and workshop courses cannot be used to satisfy this requirement. Courses that satisfy this requirement are any Art History (AH); Liba 130, 204, 314; Mus 101, 102, 103, 104, 105; Danc 200; Thea 201, 202.
3 hrs FA/Lang/Hum	3	Successfully complete 3 hrs of Fine Arts, Humanities, or Modern language with a passing grade. Modern Language include courses in courses in Ancient Greek (Gr), Arabic (Arab) nd Swahili (Swa). (Japn), Korean (Kor), Latin (Lat), Portuguese (Port), Russian (Russ), Spanish

General Education II

REQUIREMENT	HOURS	DESCRIPTION
8 hrs lab science	8	Complete 8 hours of laboratory science chosen from the following: CHEM 105, 106, 115, 116; PHYS 211, 212, 221, 222; or BISC 160, 161, 162, 163.
Math 261	3	Complete Math 261 with a passing grade.
Math 262	3	Complete Math 262 with a passing grade.

Major Requirements

REQUIREMENT	HOURS	DESCRIPTION
Csci 111	3	Complete Csci 111 with a passing grade.
Csci 112	3	Complete Csci 112 with a passing grade.
Csci 211	3	Complete Csci 211 with a passing grade.

REQUIREMENT	HOURS	DESCRIPTION
Csci 300	1	Complete Csci 300 with a passing grade.
Csci 223	3	Complete Csci 223 with a passing grade.
Csci 311	3	Complete Csci 311 with a passing grade.
Csci 387	3	Complete Csci 387 with passing grade
Csci 423	3	Complete Csci 423 with a passing grade.
Csci 433	3	Complete Csci 433 with a passing grade.
Csci 450	3	Complete Csci 450 with a passing grade.
Csci 487	3	Complete Csci 487 with a passing grade.
15 hrs 300+ level CSci electives	15	Complete 15 hours of computer science electives chosen from computer science courses at the 300 level and above.
School of Engineering GPA		Must be at least a 2.0.

Major Requirements II

REQUIREMENT	HOURS	DESCRIPTION
6 hrs Add'l science elective	6	Complete 6 credit hours of additional science electives chosen from the following Astro 103, 104- Chem 221, 222- Geol 101, 102, 103, 104, 105, 107 and 120 (not both 101 and 104)- Bio, Chem, Phys & Geo 300+ and any of our Lab Science not already taken.
El E 235	3	Complete El E 235 with a passing grade.
El E 236	1	Complete El E 236 with a passing grade.
Math 263 or 319	3	Complete either Math 263 or Math 319.
Math 301	3	Complete Math 301 with a passing grade.
Math 302 or 401	3	Complete Math 302 or Math 401 with a passing grade.
Math 375	3	Complete Math 375 with a passing grade.

Non-minor requirements

REQUIREMENT	HOURS	DESCRIPTION
18 hrs tech elective or minor	18	Complete either 18 hours of course work for an approved minor or other technical electives chosen in consultation with the academic advisor.

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REQUIREMENT	HOURS	DESCRIPTION
CSci 343	3	Complete CSci 343 with a a grade of C- or better.
CSci 443	3	Complete CSci 443 with a grade of C- or better.
CSci 475	3	Complete CSci 475 with a grade of C- or better.
6 add'l hrs of Data Science	6	Complete 6 add'l hours of data science courses chosen from: CSci 345, 444, 492, 517, or CSci 543 with a grade of C- or better.