



BS in COMPUTER SCIENCE: Bioinformatics Emphasis (693222) MAP Sheet

Department of Computer Science

For students entering the degree program during the 2009–2010 curricular year.

UNIVERSITY CORE AND GRADUATION REQUIREMENTS				PROGRAM REQUIREMENTS (84 total hours)																																																																																																																	
UNIVERSITY CORE REQUIREMENTS (48.5 hours minimum)				No D credit is allowed in major courses																																																																																																																	
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Complete three elective courses from the following: C S 401R Topics in Computer Science 3.0V C S 405 Creating and Managing a Software Business 3.0 C S 412 Modeling and Optimization 3.0 C S 428 Software Engineering 3.0 C S 431 Algorithmic Languages and Compilers 3.0 C S 450 Intro to Digital Signal & Image Processing 3.0 C S 452 Database Modeling Concepts 3.0 C S 455 Computer Graphics 3.0 C S 456 Introduction to User Interface Software 3.0 C S 460 Computer Communications & Networking 3.0 C S 462 Large-Scale Distributed System Design 3.0 C S 465 Computer Security 3.0 C S 470 Introduction to Artificial Intelligence 3.0 C S 476 Introduction to Data Mining 3.0 C S 478 Intro Neural Networks & Machine Learning 3.0 C S 486 Verification and Validation 3.0 Note: If C S 401R is chosen, it must be taken for three hours.		
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Minimum hours needed to graduate		120.0																																																																																																																			

***THESE CLASSES FILL BOTH UNIVERSITY CORE AND PROGRAM REQUIREMENTS (19 hours overlap)**

FOR UNIVERSITY CORE OR PROGRAM QUESTIONS CONTACT THE ADVISEMENT CENTER

Physical and Mathematical Sciences College Advisement Center
N-179 ESC

Brigham Young University, Provo, UT 84602

Telephone: (801) 422-6270

FACULTY ADVISOR:

Paul Roper

3370 TMCB

Brigham Young University, Provo, UT 84602

Telephone: (801) 422-8149

BS in COMPUTER SCIENCE: Bioinformatics Emphasis (693222)
2009–2010

Suggested Sequence of Courses:

FRESHMAN YEAR

1st Semester

C S 142 (FWSpSu)	3.0
1 st Year Writing or A Htg 100	3.0 (3.0)
PDBio 120 (FWSp)	2.0
Math 112 (FWSpSu)	4.0
Rel A 121 (FWSpSu)	2.0
Total Hours	14.0

2nd Semester

C S 124 (FWSpSu)	3.0
C S 235 (FWSpSu)	3.0
A Htg 100 or 1 st Year Writing	3.0 (3.0)
Math 113 (FWSpSu)	4.0
Rel A 122 (FWSpSu)	2.0
Total Hours	15.0

SOPHOMORE YEAR

3rd Semester

C S 236 (FWSpSu)	3.0
Civilization 1	3.0
Stat 221 (FWSpSu)	3.0
Bio 265 (FW)	3.0
Rel A 211 or 212 (FWSpSu)	2.0
Total Hours	14.0

4th Semester

C S 240 (FWSu)	3.0
C S 252 (FWSp)	3.0
Chem 105 (FWSpSu)	4.0
Math 313 (FWSpSu)	3.0
Rel C 324 or 325	2.0
Total Hours	15.0

JUNIOR YEAR

5th Semester

C S 312 (FWSp)	3.0
MMBio 240 (FWSp)	3.0
Bio 365 (F)	3.0
Engl 316 (FWSpSu)	3.0
HEPE 129 (Wellness)	2.0
Religion Elective	2.0
Total Hours	16.0

6th Semester

C S 340 (FW)	3.0
C S 404 (FW)	2.0
PWS 340 (FWSu)	2.0
C S 418 (W)	3.0
C S 345 (FWSu)	3.0
Religion Elective	2.0
Total Hours	15.0

SENIOR YEAR

7th Semester

C S 360 (FW)	3.0
Computer Science Elective(400 level)	3.0
Arts	3.0
Phscs 121 (FWSpSu)	3.0
Religion Elective	2.0
Chem 351 (FWSp)	3.0
Total Hours	17.0

8th Semester

Computer Science Elective (400 level)	3.0
Computer Science Elective(400 level)	3.0
Civilization 2 (and Letters)	3.0
Global and Cultural Awareness	3.0
Social Science	3.0
Total Hours	15.0

THE DISCIPLINE:

Computer science touches virtually every area of human endeavor. Software is responsible for everything from the control of kitchen appliances to sophisticated climate models used in predicting future environmental change. Students in computer science learn to approach complex problems in business, science, and entertainment using their strong background in mathematics, algorithms, and data structures.

The degree programs in the Computer Science Department prepare students to be confident software developers and technical problem solvers. The curriculum also trains students for research into new avenues where computers will have a significant impact.

The BS curriculum is accredited by the Computing Accreditation Commission of ABET.

CAREER OPPORTUNITIES:

Graduates pursue exciting opportunities in graphics, artificial intelligence, software engineering, database design, scientific programming, systems administration, and research at universities and national laboratories.

Students completing the animation emphasis will be prepared for technical positions at animation and game programming studios. Students will learn both the technical and artistic side of creating and implementing digital animations and games.

The bioinformatics emphasis is designed for students who are interested in building software to assist in analyzing biological systems. Students will graduate with a significant background in biology coupled with the software development and analysis skills necessary to implement large bioinformatics applications.

For more information on careers in your major, please refer to *From Major to Career*, a publication which is located in all college advisement centers.

Note 1: The sequence of courses suggested may not fit the circumstances of every student. Students should contact their college advisement center for help in outlining an efficient schedule.

Note 2: Students are encouraged to complete an average of 15 credit hours each semester or 30 credit hours each year, which could include spring and/or summer terms. Taking fewer credits substantially increases the cost and the number of semesters to graduate.

Computer Science Department
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Brigham Young University Provo, UT 84602
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