BS in Computer Science: Animation (693223) MAP Sheet

Physical and Mathematical Sciences, Computer Science

For students entering the degree program during the 2018-2019 curricular year.

This is a limited-enrollment program requiring departmental admissions approval. Please see the department office for information regarding requirements for admission to this emphasis.

Application deadline: April 15 and October 15 after completing the prerequisite courses listed below.

<table>
<thead>
<tr>
<th>University Core and Graduation Requirements</th>
<th>Suggested Sequence of Courses</th>
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<tbody>
<tr>
<td><strong>University Core Requirements:</strong></td>
<td><strong>FRESHMAN YEAR</strong></td>
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<tr>
<td>Requirements</td>
<td>1st Semester</td>
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<tr>
<td><strong>Religion Cornerstones</strong></td>
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<tr>
<td>Teachings and Doctrine of The Book of Mormon</td>
<td>C S 142 3.0</td>
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<tr>
<td>Jesus Christ and the Everlasting Gospel</td>
<td>CSANM 150 1.5</td>
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<tr>
<td>Foundations of the Restoration</td>
<td>First-year Writing or American Heritage</td>
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<tr>
<td>The Eternal Family</td>
<td>MATH 112 4.0</td>
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<td>Religion Cornerstone course</td>
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<td></td>
<td>Open elective</td>
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<td><strong>Total Hours</strong></td>
<td>15.5</td>
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<td><strong>2nd Semester</strong></td>
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<td>First-year Writing or American Heritage</td>
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<td>C S 235 3.0</td>
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<td>C S 224 3.0</td>
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<td>MATH 113 4.0</td>
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<tr>
<td>Religion Cornerstone course</td>
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<td>Open elective</td>
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<td><strong>Total Hours</strong></td>
<td>15.0</td>
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<td><strong>3rd Semester</strong></td>
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<tr>
<td>Civilization 1</td>
<td>C S 236 3.0</td>
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<tr>
<td>Civilization 2</td>
<td>TMA 102 3.0</td>
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<tr>
<td>Languages of Learning (Math or Language)</td>
<td>PHSCS 121 3.0</td>
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<td></td>
<td>Civilization 1</td>
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<td>Religion Cornerstone course</td>
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<td>Open elective</td>
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<td><strong>Total Hours</strong></td>
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<td><strong>4th Semester</strong></td>
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<tr>
<td>Biological Science</td>
<td>C S 240 4.0</td>
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<tr>
<td>Physical Science</td>
<td>C S 252 3.0</td>
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<tr>
<td>Social Science</td>
<td>TMA 294 3.0</td>
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<td>STAT 121 or 201</td>
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<td>Religion Cornerstone course</td>
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<td><strong>Total Hours</strong></td>
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<td><strong>5th Semester</strong></td>
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<td><strong>Core Enrichment: Electives</strong></td>
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<tr>
<td>Religion Electives</td>
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<tr>
<td>Open Electives</td>
<td>Variable</td>
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<tr>
<td><strong>Total Hours</strong></td>
<td>Variable</td>
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</table>

Note 1: The sequence of courses 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.

FOR UNIVERSITY CORE OR PROGRAM QUESTIONS, CONTACT THE ADVISEMENT CENTER.
BS in Computer Science: Animation (693223)
2018-2019 Program Requirements (78.5 - 79.5 Credit Hours)

Grades below C- are not allowed in major courses.

REQUIREMENT 1 Complete 3 courses

PREREQUISITE COURSES:
- C S 142 - Introduction to Computer Programming 3.0
- C S 235 - Data Structures and Algorithms 3.0
- CSANM 150 - Introduction to Three-Dimensional Graphics 1.5

Be admitted to the program.

REQUIREMENT 2 Complete 10 courses

COMPLETE THE FOLLOWING AFTER BEING ADMITTED TO THE PROGRAM:
- C S 224 - Introduction to Computer Systems 3.0
- C S 236 - Discrete Structures 3.0
- C S 240 - Advanced Programming Concepts 4.0
- C S 252 - Introduction to Computational Theory 3.0
- C S 312 - Algorithm Design and Analysis 3.0
- C S 324 - Systems Programming 3.0
- C S 340 - Software Design and Testing 3.0
- C S 355 - Introduction to Graphics and Image Processing 3.0
- C S 404 - Ethics and Computers in Society 2.0
- C S 455 - Computer Graphics 3.0

REQUIREMENT 3 Complete 8 courses

SUPPORTING COURSES:
- CSANM 354 - Shader Programming 3.0
- *ENGL 316 - Technical Communication 3.0
- MATH 112 - Calculus 1 4.0
- MATH 113 - Calculus 2 4.0
- MATH 313 - Elementary Linear Algebra 3.0
- PHSCS 121 - Introduction to Newtonian Mechanics 3.0
- *TMA 102 - Introduction to Film 3.0
- TMA 294 - History of Animation 3.0

REQUIREMENT 4 Complete 1 course

CSANM 450R - Advanced Senior Film Production 1 3.0
You may take this course up to 2 times.

CSANM 459R - Interactive Animation Technology 3.0
You may take this course up to 2 times.

REQUIREMENT 5 Complete 3 courses

STAT 121 - Principles of Statistics 3.0
STAT 201 - Statistics for Engineers and Scientists 3.0

REQUIREMENT 6 Complete 1 course

NOTE: IF C S 401R IS CHOSEN, IT MUST BE TAKEN FOR THREE HOURS.

- C S 260 - Web Programming 3.0
- C S 330 - Concepts of Programming Languages 3.0
- C S 345 - Operating Systems Design 3.0
- C S 356 - Designing the User Experience 3.0
- C S 401R - Topics in Computer Science 3.0
- C S 412 - Linear Programming and Convex Optimization 3.0
- C S 418 - Bioinformatics 3.0
- C S 428 - Software Engineering 3.0
- C S 431 - Algorithmic Languages and Compilers 3.0
- C S 450 - Computer Vision 3.0
- C S 452 - Database Modeling Concepts 3.0
- C S 453 - Fundamentals of Information Retrieval 3.0
- C S 456 - Introduction to User Interface Software 3.0
- C S 460 - Computer Communications and 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 478 - Tools for Machine Learning 3.0
- C S 479 - (Not currently offered) 3.0
- C S 484 - Parallel Processing 3.0
- C S 486 - Verification and Validation 3.0
- EC EN 425 - Real-Time Operating Systems 4.0

REQUIREMENT 7 Complete 1 course

NOTE: IF C S 401R, C S 498R, OR C S 501R IS CHOSEN, IT MUST BE TAKEN FOR THREE HOURS.

- C S 401R - Topics in Computer Science 3.0
- C S 412 - Linear Programming and Convex Optimization 3.0
- C S 418 - Bioinformatics 3.0
- C S 428 - Software Engineering 3.0
- C S 431 - Algorithmic Languages and Compilers 3.0
- C S 450 - Computer Vision 3.0
- C S 452 - Database Modeling Concepts 3.0
- C S 453 - Fundamentals of Information Retrieval 3.0
- C S 456 - Introduction to User Interface Software 3.0
- C S 460 - Computer Communications and 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 478 - Tools for Machine Learning 3.0
- C S 479 - (Not currently offered) 3.0
- C S 484 - Parallel Processing 3.0
- C S 486 - Verification and Validation 3.0
- EC EN 425 - Real-Time Operating Systems 4.0

REQUIREMENT 8 Complete 1 course

- ARTHC 202 - World Civilization Since 1500 3.0
- TECH 201 - (Not currently offered) 3.0

REQUIREMENT 9 Complete Senior Exit interview with the CS department during your last semester or term.

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.
BS in Computer Science: Animation (693223)
2018-2019

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.

MAP DISCLAIMER
While every reasonable effort is made to ensure accuracy, there are some student populations that could have exceptions to listed requirements. Please refer to the university catalog and your college advisement center/department for complete guidelines.

DEPARTMENT INFORMATION
Computer Science Department
Brigham Young University
3361 Talmage Building
Provo, UT 84602
Telephone: (801) 422-3027

ADVISEMENT CENTER INFORMATION
Physical and Mathematical Sciences College Advisement Center
Brigham Young University
N-181 ESC
Provo, UT 84602
Telephone: (801) 422-2674