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>
</tr>
</thead>
<tbody>
<tr>
<td><strong>University Core Requirements:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Requirements</strong></td>
<td><strong>Freshman Year</strong></td>
</tr>
<tr>
<td><strong>Classes</strong></td>
<td><strong>1st Semester</strong></td>
</tr>
<tr>
<td><strong>Hours</strong></td>
<td><strong>2nd Semester</strong></td>
</tr>
<tr>
<td><strong>Religion Cornerstones</strong></td>
<td><strong>3rd Semester</strong></td>
</tr>
<tr>
<td>Teachings and Doctrine of The Book of Mormon</td>
<td><strong>Total Hours 16.0</strong></td>
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<td>Jesus Christ and the Everlasting Gospel</td>
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<td>Foundations of the Restoration</td>
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<td>The Eternal Family</td>
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<td><strong>The Individual and Society</strong></td>
<td><strong>Total Hours 15.0</strong></td>
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<td>American Heritage</td>
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<td>Global and Cultural Awareness</td>
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<tr>
<td><strong>Skills</strong></td>
<td><strong>Sophomore Year</strong></td>
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<tr>
<td>First Year Writing</td>
<td></td>
</tr>
<tr>
<td>Advanced Written and Oral Communications</td>
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<td>Quantitative Reasoning</td>
<td><strong>5th Semester</strong></td>
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<td>Languages of Learning (Math or Language)</td>
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<td><strong>Arts, Letters, and Sciences</strong></td>
<td><strong>Total Hours 15.0</strong></td>
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<tr>
<td>Civilization 1</td>
<td><strong>6th Semester</strong></td>
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<td>Civilization 2</td>
<td></td>
</tr>
<tr>
<td><strong>Core Enrichment: Electives</strong></td>
<td><strong>Senior Year</strong></td>
</tr>
<tr>
<td>Religion Electives</td>
<td></td>
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<tr>
<td>Open Electives</td>
<td></td>
</tr>
<tr>
<td><strong>Graduation Requirements:</strong></td>
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<td>Minimum residence hours required</td>
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<td>Minimum hours needed to graduate</td>
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*THESE CLASSES FILL BOTH UNIVERSITY CORE AND PROGRAM REQUIREMENTS (13–23 hours overlap)*

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.
Be admitted to the program.

COMPLETENESS FOLLOWING AFTER BEING ADMITTED TO THE PROGRAM:

- CS 224 - Introduction to Computer Systems
- CS 236 - Discrete Structures
- CS 240 - Advanced Programming Concepts
- CS 252 - Introduction to Computational Theory
- CS 312 - Algorithm Design and Analysis
- CS 324 - Systems Programming
- CS 340 - Software Design and Testing
- CS 355 - Introduction to Graphics and Image Processing
- CS 404 - Ethics and Computers in Society
- CS 455 - Computer Graphics

REQUIREMENT 3 Complete 8 courses

SUPPORTING COURSES:

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

REQUIREMENT 4 Complete 1 course

- CSANM 450R - Advanced Senior Film Production 1
- CSANM 459R - Interactive Animation Technology

REQUIREMENT 5 Complete 3 courses

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

REQUIREMENT 6 Complete 1 course

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

- CS 260 - Web Programming
- CS 330 - Concepts of Programming Languages
- CS 345 - Operating Systems Design
- CS 356 - Designing the User Experience
- CS 401R - Topics in Computer Science
- CS 412 - Linear Programming and Convex Optimization
- CS 418 - Bioinformatics
- CS 428 - Software Engineering
- CS 431 - Algorithmic Languages and Compilers
- CS 450 - Computer Vision
- CS 452 - Database Modeling Concepts
- CS 453 - Fundamentals of Information Retrieval
- CS 456 - Introduction to User Interface Software
- CS 460 - Computer Communications and Networking
- CS 462 - Large-Scale Distributed System Design
- CS 465 - Computer Security
- CS 470 - Introduction to Artificial Intelligence
- CS 478 - Tools for Machine Learning
- CS 479 - (Not currently offered)
- CS 484 - Parallel Processing
- CS 486 - Verification and Validation

REQUIREMENT 7 Complete 1 course

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

- CS 401R - Topics in Computer Science
- CS 412 - Linear Programming and Convex Optimization
- CS 418 - Bioinformatics
- CS 428 - Software Engineering
- CS 431 - Algorithmic Languages and Compilers
- CS 450 - Computer Vision
- CS 452 - Database Modeling Concepts
- CS 453 - Fundamentals of Information Retrieval
- CS 456 - Introduction to User Interface Software
- CS 460 - Computer Communications and Networking
- CS 462 - Large-Scale Distributed System Design

REQUIREMENT 8 Complete 1 course

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

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.
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
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ADVISEMENT CENTER INFORMATION
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