



BS in COMPUTER SCIENCE: Animation Emphasis (693223) MAP Sheet

Department of Computer Science

For students entering the degree program during the 2016–2017 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.

UNIVERSITY CORE AND GRADUATION REQUIREMENTS				PROGRAM REQUIREMENTS (78.5-79.5 total hours)					
UNIVERSITY CORE REQUIREMENTS				Grades below C- are not allowed in major courses.					
Requirements				Complete the following prerequisite courses:					
Religion Cornerstones	#Classes	Hours	Classes	C S 142	Introduction to Computer Programming	3.0	C S 256	Designing the User Experience	3.0
Teachings and Doctrine, Book of Mormon	1	2.0	Rel A 275	C S 235	Data Structures and Algorithms	3.0	C S 330	Concepts of Programming Languages	3.0
Jesus Christ & the Everlasting Gospel	1	2.0	Rel A 250	CSAnm 150	Intro to 3-D Computer Graphics	1.5	C S 345	Operating Systems Design	3.0
Foundations of the Restoration	1	2.0	Rel C 225				EC En 425	Real-Time Operating Systems	4.0
The Eternal Family	1	2.0	Rel C 200				Any of the 400-level computer science courses (except C S 404, 405, 455, and 498R).		
The Individual and Society				Apply to the program.				Note: If C S 401R is chosen, it must be taken for three hours.	
Citizenship				Complete the following after being admitted to the program:				Complete one course from the following:	
American Heritage	1-2	3-6.0	from approved list	C S 224	Introduction to Computer Systems	3.0	C S 498R	Undergraduate Special Projects	3.0V
Global & Cultural Awareness	1	3.0	from approved list	C S 236	Discrete Structures	3.0	CSAnm 351R	Lighting for 3D Graphics	3.0
Skills				C S 240	Advanced Programming Concepts	4.0	CSAnm 355	Photography for Animation	3.0
Effective Communication				C S 252	Introduction to Computational Theory	3.0	CSAnm 452R	Advanced Senior Film Production 2	3.0
First-Year Writing	1	3.0	from approved list	C S 312*	Algorithm Design & Analysis	3.0	CSAnm 458	3D Visual Effects	3.0
Adv Written & Oral Communication	1	3.0	Engl 316*	C S 340	Software Design and Testing	3.0	Any C S course not used above.		
Quantitative Reasoning	0-1	0-4.0	Math 112* or 113*	C S 355	Interactive Graphics & Image Process.	3.0	Any of the 500-level computer science courses.		
Languages of Learning (Math or Language)	1	4.0	Math 112* or 113*	C S 360	Internet Programming	3.0	Note: If either C S 498R or 501R is chosen, it must be taken for three hours.		
Arts, Letters, and Sciences				C S 404	Ethics and Computers in Society	2.0	Complete one course from the following:		
Civilization 1	1	3.0	Tech 201* or from approved list	C S 455	Computer Graphics	3.0	CSAnm 354	Shader Programming	3.0
Civilization 2	1	3.0	ArtHc 202* or from approved list				Engl 316*	Technical Communication	3.0
Arts	1	3.0	TMA 102*	Math 112*	Calculus 1	4.0	Math 113*	Calculus 2	4.0
Letters	1	3.0	from approved list	Math 313	Elementary Linear Algebra	3.0	Phscs 121*	Intro to Newtonian Mechanics	3.0
Scientific Principles & Reasoning				Phscs 121*	Intro to Newtonian Mechanics	3.0	TMA 102*	Introduction to Film	3.0
Biological Science	1-2	3-5.0	from approved list	TMA 294	History of Animation	3.0	TMA 294	History of Animation	3.0
Physical Science	1	3.0	CS 312*				Complete one course from the following:		
Social Science	1	3.0	from approved list	CSAnm 450R	Advanced Senior Film Production 1	3.0	CSAnm 459R	Interactive Animation Technology	3.0
Core Enrichment: Electives				Complete one course from the following:				Complete one course from the following:	
Religion Electives	3-4	6.0	from approved list	Stat 121*	Principles of Statistics	3.0	Stat 201	Statistics for Engineers and Scientists	3.0
Open Electives	Variable	Variable	personal choice						
GRADUATION REQUIREMENTS:									
		30.0							
		120.0							

*THESE CLASSES FILL BOTH UNIVERSITY CORE AND PROGRAM REQUIREMENTS (13–23 hours overlap)

FOR UNIVERSITY CORE OR PROGRAM QUESTIONS CONTACT THE ADVISEMENT CENTER

Physical and Mathematical Sciences College Advisement Center

N-181 ESC

Brigham Young University, Provo, UT 84602

Telephone: (801) 422-2674

FACULTY ADVISOR:

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**BS in COMPUTER SCIENCE: Animation Emphasis (693223)
2016–2017**

Suggested Sequence of Courses:

FRESHMAN YEAR

1st Semester

C S 142 (FWSpSu)	3.0
1 st Year Writing	3.0
or A Htg 100	(3.0)
CSAnm 150	1.5
Math 112 (FWSpSu)	4.0
Religion Cornerstone course	2.0
Total Hours	13.5

2nd Semester

C S 224 (FWSpSu)	3.0
C S 235 (FWSpSu)	3.0
A Htg 100	3.0
or 1 st Year Writing	(3.0)
Math 113 (FWSpSu)	4.0
Religion Cornerstone course	2.0
Total Hours	15.0

SOPHOMORE YEAR

3rd Semester

C S 236 (FWSpSu)	3.0
TMA 102	3.0
Phscs 121	3.0
General Elective	3.0
Religion Cornerstone course	2.0
General electives	2.0
Total Hours	16.0

4th Semester

C S 240 (FWSu)	4.0
C S 252 (FWSp)	3.0
TMA 294	3.0
Stat 121 or 201 (FWSpSu)	3.0
Religion Cornerstone course	2.0
Total Hours	15.0

JUNIOR YEAR

5th Semester

C S 355 (FWSp)	3.0
C S 340 (FWSu)	3.0
Engl 316 (FWSpSu)	3.0
Math 313 (FWSp)	3.0
Religion Elective	2.0
Total Hours	14.0

6th Semester

C S 360	3.0
Civilization 2 (ArtHC 202)	3.0
CSAnm 354	3.0
C S 312	3.0
Religion Elective	2.0
Total Hours	14.0

SENIOR YEAR

7th Semester

Civilization 1 (Mfg 201)	3.0
CSAnm 450R or CSAnm 459R	3.0
C S 455 (FWSp)	3.0
CSAnm Elective	1.5-3.0
Religion Elective	2.0
Biological Science	3.0
Total Hours	15.5-17.0

8th Semester

C S 404 (FW)	2.0
Computer Science Elective	3.0
Computer Science Elective	3.0
Global and Cultural Awareness/Letters	3.0
Social Science	3.0
Total Hours	14.0

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.

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.

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