

# COMPUTER ANIMATION AND GAME DEVELOPMENT BS

## More Information

### E-advising Tools

Students are encouraged to use the interactive e-advising tools that have been designed to help them graduate within four years. These tools can be accessed through the Student Center.

The Bachelor of Science in Computer Animation and Game Development is designed to teach the skills necessary to succeed in a career in game development, animation, or CGI/VFX. Within the degree are two options, one in animation production and one in game development, which provide instruction and practice in the specific skill sets, tools, and techniques used in those industries.

**The option in animation production.** Students learn the core components of production, from conceptualization to end product, as well as industry pipelines, workflows, and more. Beyond core coursework this option offers two course groupings, allowing students to focus on either 3D animation or computer-generated imagery (CGI). Our animation production alumni are employed at entertainment companies around the world, including Disney, Pixar, Sony Imageworks, Weta Digital, and more.

**The option in game development.** Students learn the fundamentals of game development, including level design, game scripting, and production. Students also learn and practice game development workflow, rapid prototyping, agile development, and industry-standard tools. Game development alumni are employed at game companies including Epic Games, 2K, Ubisoft, Blizzard, and more.

## Grading Requirement

All courses taken to fulfill program course requirements must be taken for a letter grade except those courses specified by the department as credit/no credit grading only.

A grade of C- or higher is required in all Computer Animation and Game Development (CAGD) courses required for the major.

## Course Requirements for the Major: 69 units

Completion of the following courses, or their approved transfer equivalents, is required of all candidates for this degree. Courses in this program may complete more than one graduation requirement.

For the Computer Animation and Game Development (CAGD) degree, students must successfully complete the four lower-division core CAGD courses with a C- or higher prior to taking any upper-division CAGD courses.

Course	Title	Units
<b>Major Core</b>		
CAGD 110	Computer-Assisted Art I	3
CAGD 112	Virtual and Physical Cameras Applications	3
CAGD 180	Scripting and Programming for Computer Graphics	3
CAGD 230	Digital Modeling	3
CAGD 320	Digital Texturing	3

CAGD 495	Advanced Production	3
Select one of the following:		3
CAGD 489	Industry Internship	
CAGD 499	Special Problems	

### Interdisciplinary Program Requirements

Select 15 units from the following:		15
ARTH 110	Art History Survey: Prehistory to Medieval	
ARTH 120	Art History Survey: Renaissance to 1800	
ARTH 130	Art History Survey: 1800 to the Present	
ARTS 122	2D Design	
ARTS 123	3D Design	
ARTS 125	Basic Drawing	
ARTS 126	Basic Life Drawing	
ARTS 227	Introduction to Painting	
ARTS 260	Introduction to Ceramics	
ARTS 325	Intermediate Ideation Drawing	
ARTS 326	Intermediate Life Drawing	
ARTS 425	Advanced Ideation Drawing	
ARTS 426	Advanced Life Drawing	
CSCI 111	Programming and Algorithms I	
CSCI 211	Programming and Algorithms II	
CSCI 311	Algorithms and Data Structures	
CSCI 430	Software Engineering	
CSCI 566	Computer Graphics Programming	
CSCI 580	Artificial Intelligence	
KINE 524	Biomechanical Analysis	
MADT 103W	Writing for Screen Media (W)	
MADT 141	Media Aesthetics	
MADT 216	Introduction to Digital Audio in Media	
MADT 222	Basic Web Design	
MADT 261	Foundations of Electronic Media	
MADT 266	Field Video Production	
MADT 283	Digital Fundamentals	
MADT 314	Rich Internet Media Design I	
MADT 322	Advanced Web Design	
MADT 433	Human Factors	
MADT 466	Studio Video Production	
MADT 468	Video Production Workshop	
THEA 112	Introduction to Acting	

### Major Option

Select one of the following options:		33
Animation Production (p. 2)		
Game Development (p. 2)		

**Total Units** 69

## Major Option Course Requirements

Students must select one of the following options for completion of the major course requirements.

## The Option in Animation Production: 33 units

Course	Title	Units
<b>Foundation</b>		
CAGD 117	Concept Design and Storyboarding	3
CAGD 240	Digital Animation	3
CAGD 250	Introduction to Technical CGI	3
CAGD 345W	Advanced Animation Pre-Production and Story Development (W)	3
CAGD 493	Senior Portfolio	3
CAGD 495	Advanced Production	3
<b>Technical Selections</b>		
Select 15 units from one of the following course groups:		15
<i>Animation Group:</i>		
CAGD 325	Motion Capture	
CAGD 340	Computer Animation	
CAGD 374W	Interactive Storytelling in Video Games	
CAGD 432	3-D Character Rigging	
CAGD 441	3-D Character Animation	
<i>CGI Group:</i>		
CAGD 330	3-D Computer Modeling	
CAGD 331	3-D Character Modeling	
CAGD 350	3D Scanning	
CAGD 373	Game Asset Production	
CAGD 420	Digital Lighting and Texturing	
<b>Total Units</b>		<b>33</b>

## The Option in Game Development: 33 units

Course	Title	Units
<b>Foundation</b>		
CAGD 170	Video Game Design	3
CAGD 270	Level Design	3
CAGD 280	Introduction to Game Scripting	3
CAGD 370	Video Game Development	3
CAGD 373	Game Asset Production	3
CAGD 374W	Interactive Storytelling in Video Games	3
CAGD 375W	Video Game Pre-Production	3
CAGD 377	Mobile Game Development	3
CAGD 470	Video Game Production	3
<b>Technical Selections</b>		
Select two of the following:		6
CAGD 325	Motion Capture	
CAGD 330	3-D Computer Modeling	
CAGD 350	3D Scanning	
CAGD/JOUR/ MADT 358	Emerging Technologies in Media and Entertainment	
CAGD 380	Game Scripting	
CAGD 495	Advanced Production	
<b>Total Units</b>		<b>33</b>

## Electives Requirement

To complete the total units required for the bachelor's degree, select additional elective courses from the total University offerings. You should consult with an advisor regarding the selection of courses which will

provide breadth to your University experience and possibly apply to a supportive second major or minor.

## Honors in the Major

Honors in the Major is a program of independent work in your major. It requires six units of honors coursework completed over two semesters.

The Honors in the Major program allows you to work closely with a faculty mentor in your area of interest on an original performance or research project. This year-long collaboration allows you to work in your field at a professional level and culminates in a public presentation of your work. Students sometimes take their projects beyond the University for submission in professional journals, presentation at conferences, or academic competition. Such experience is valuable for graduate school and professional life. Your honors work will be recognized at your graduation, on your permanent transcripts, and on your diploma. It is often accompanied by letters of commendation from your mentor in the department or the department chair.

Some common features of Honors in the Major program are:

- You must take six units of Honors in the Major coursework. All six units are honors courses (marked by a suffix of H), and at least three of these units are independent study (399H, 499H, 599H) as specified by your department. You must complete each course with a minimum grade of B.
- You must have completed 9 units of upper-division coursework or 21 overall units in your major before you can be admitted to Honors in the Major. Check the requirements for your major carefully, as there may be specific courses that must be included in these units.
- Your cumulative #GPA should be at least 3.5 or within the top 5% of majors in your department.
- Your GPA in your major #should be at least 3.5 or within the top 5% of majors in your department.
- Most students apply for or are invited to participate in Honors in the Major during the second semester of their junior year. Then they complete the six units of coursework over the two semesters of their senior year.
- Your honors work culminates with a public presentation of your honors project.

Honors in the Major is not part of the Honors Program. Each department administers its own program. Please contact your major department or major advisor to apply.

In addition to the common requirements for the Honors in the Major program given above, the Honors in Computer Animation and Game Development program includes the following:

1. You must be recommended by a faculty member.
2. To complete the Honors in Computer Animation and Game Development program, you must complete two semesters of CAGD 499H with minimum grades of B. You must define a research problem or performance area and develop a Honors Research Project/Thesis proposal approved by your major advisor and completed by the end of your second semester of CAGD 499H. You must maintain an overall GPA of at least 3.0 and must make a public presentation of the results of your Honors project.

3. Each Honors in the Major class requires completion of the course plus an additional Honors project and culminates with a public presentation of your Honors project.

See Bachelor's Degree Requirements (<https://catalog.csuchico.edu/undergraduate-requirements/bachelors-degree-requirements/>) for complete details on general degree requirements. A minimum of 39 units, including those required for the major, must be upper division.

## General Education Requirements: 48 units

See General Education (<https://catalog.csuchico.edu/colleges-departments/undergraduate-education-academic-success/general-education/#gerequirementstext>) and the Class Schedule (<http://www.csuchico.edu/schedule/>) for the most current information on General Education Requirements and course offerings.

## Diversity Course Requirements: 6 units

You must complete a minimum of two courses that focus primarily on cultural diversity. At least one course must be in US Diversity (USD) and at least one in Global Cultures (GC). See Diversity Requirements (<https://catalog.csuchico.edu/undergraduate-requirements/diversity-requirements/>) for a full list of courses. Most courses taken to satisfy these requirements may also apply to General Education (<https://catalog.csuchico.edu/colleges-departments/undergraduate-education-academic-success/general-education/>).

## Upper-Division Writing Requirement

Writing Across the Curriculum (EM 17-009 (<https://www.csuchico.edu/pres/em/2017/17-009.shtml/>)) is a graduation requirement and may be demonstrated through satisfactory completion of four Writing (W) courses, two of which are designated by the major department. See Mathematics/Quantitative Reasoning and Writing Requirements (<https://catalog.csuchico.edu/undergraduate-requirements/mathematicsquantitative-reasoning-writing-requirements/>) for more details on the four courses. The first of the major designated Writing (W) courses is listed below.

- Any upper-division Writing (W) course.

The second major-designated Writing course is the Graduation Writing Assessment Requirement (GW) (EO 665 (<https://calstate.policystat.com/policy/9585618/latest/>)). Students must earn a C- or higher to receive GW credit. The GE Written Communication (A2) (<https://catalog.csuchico.edu/colleges-departments/undergraduate-education-academic-success/general-education/#A2>) requirement must be completed before a student is permitted to register for a GW course.