

# Animation

## COURSE OUTLINE

1. **Course Title:** Animation
2. **CBEDS Title:** Other Visual Communications, Graphics Course
3. **CBEDS Number:** 5798
4. **Job Titles:** Animator, Concept Artist, Modeler, Game Level Programmer
5. **Course Description:**

This computer animation course will stress the use of animation and modeling for visualization and communication. Students will work with industry standard software and will create 3D animations commonly used in the computer gaming and movie industry. Students will also explore careers and develop employability skills to prepare them for working in the computer animation industry.

### Student Outcomes and Objectives:

Students will:

1. Learn how to use industry standard 3D Animation software to create 2D/3D images
2. Apply basic art theory of color and lighting
3. Render various images
4. Create and modify objects
5. Develop skills in camera position for various effects
6. Create a short animated film

### Pathway

Recommended Sequence	Courses
Introductory	Introduction to Computers
Skill Building	Desktop Publishing/Graphic Design
Advanced Skill	3D Animation

6. **Hours:** *Students receive up to 180 hours of classroom instruction*

7. **Prerequisites:** Desktop Publishing/Graphic Design

8. **Date:** July 2010

## 9. Course Outline

<b>COURSE OUTLINE</b>				
Upon successful completion of this course, students will be able to demonstrate the following skills necessary for entry-level employment.				
<b>Instructional Units and Competencies</b>	<b>Course Hours</b>	<b>Model Curr. Standards</b>	<b>CA Academic Content Standards</b>	<b>CAHSEE</b>
<p><b>I. CAREER PREPARATION STANDARDS</b></p> <p><b>A. Career Planning and Management</b></p> <ol style="list-style-type: none"> <li>1. Know the personal qualifications, interests, aptitudes, knowledge, and skills necessary to succeed in careers.               <ol style="list-style-type: none"> <li>a. Students will identify skills needed for job success.</li> <li>b. Students will identify the education and experience required for moving along a career ladder.</li> </ol> </li> <li>2. Understand the scope of career opportunities and know the requirements for education, training, and licensure.               <ol style="list-style-type: none"> <li>a. Students will describe how to find a job.</li> <li>b. Students will select two jobs in the field and map out a timeline for completing education, certification or licensing requirements.</li> <li>c. Students will describe career opportunities in the industry sector.</li> </ol> </li> <li>3. Develop a career plan that is designed to reflect career interests, pathways and postsecondary options.               <ol style="list-style-type: none"> <li>a. Students will conduct a self-assessment and explain how professional qualifications affect career choices.</li> </ol> </li> <li>4. Understand the role and function of professional organizations, industry associations, and organized labor in a productive society.               <ol style="list-style-type: none"> <li>a. Contact two professional organizations and identify the steps to become a member.</li> </ol> </li> <li>5. Understand the past, present and future trends that affect careers, such as technological developments and societal trends, and the resulting need for lifelong learning.               <ol style="list-style-type: none"> <li>a. Students will describe careers in business.</li> <li>b. Students will identify work-related cultural differences to prepare for a global marketplace.</li> <li>c. Students will relate the importance of the business management to the California economy.</li> </ol> </li> <li>6. Know the main strategies for self-promotion in the hiring process, such as completing job applications, resume writing, interviewing skills, and preparing a portfolio.               <ol style="list-style-type: none"> <li>a. Students will write and key a resume, cover and thank you letters, and complete a job application.</li> </ol> </li> </ol> <p><b>B. Technology</b></p> <ol style="list-style-type: none"> <li>1. Understand past, present and future technological advances as they related to a chosen pathway.</li> <li>2. Understand the use of technological resources to gain access to, manipulate, and produce information, products and services.               <ol style="list-style-type: none"> <li>a. Students will demonstrate the ability to complete simple tasks on the computer, including word processing, wiring and order and inventory control.</li> </ol> </li> <li>3. Understand the influence of current and emerging technology on selected segments of the economy.</li> <li>4. Use appropriate technology in the chosen career pathway.</li> </ol>	<p>20</p> <p>Additional hours are integrated throughout the course.</p>	<p>Arts, Media &amp; Entertainment Industry Sector</p> <p>Foundation Standards:</p> <p>Reading 2.0 (2.6)</p> <p>Writing 2.2 (2.5, 2.6)</p> <p>Career Planning &amp; Mgmt. 3.1, 3.2, 3.3, 3.4, 3.5,3.6, 3.7</p> <p>Technology</p> <p>4.1, 4.2 4.3, 4.4, 4.5, 4.6</p>	<p><u>Language Arts</u> (8)</p> <p>R 1.3, 2.6</p> <p>W1.3, 2.5,</p> <p>LC 1.4,1.5 1.6</p> <p>LS1.2, 1.3, (9/10)</p> <p>R2.1,2.3,2 W2.5</p> <p>LC1.4</p> <p>LS 1.1, 2.3 (11/12)</p> <p>R2.3</p> <p>W2.5</p> <p>LC1.2</p> <p><u>Math</u> (7) NS1.2, 1.7</p> <p>MR 1.1,1.3 2.7,2.8, 3.1</p>	<p><b>Lang. Arts R 8.2.1 (9/10) R 2.1, 2.3 W2.5 Math (7) NS 1.2, 1.3, 1.7 MR 1.1, 2.1, 3.1</b></p>

<p>C. Problem Solving and Critical Thinking</p> <ol style="list-style-type: none"> <li>1. Apply appropriate problem-solving strategies and critical thinking to work-related issues and tasks.</li> <li>2. Use critical thinking skills to make informed decisions and solve problems.</li> </ol> <p>D. Health and Safety</p> <ol style="list-style-type: none"> <li>1. Know policies, procedures, and regulations, regarding health and safety in the workplace, including employers’</li> <li>2. Use tools and machines safely and appropriately.</li> <li>3. Know how to both prevent and respond to accidents in the industry.</li> </ol> <p>E. Responsibility and Flexibility</p> <ol style="list-style-type: none"> <li>1. Understand the qualities and behaviors that constitute a positive and professional work demeanor.</li> <li>2. Understand the importance of accountability and responsibility in fulfilling personal, community, and work place roles.</li> <li>3. Understand the need to adapt to varied roles and responsibilities.</li> </ol> <p>F. Ethics and Legal Responsibilities</p> <ol style="list-style-type: none"> <li>1. Know the major local, district, state and federal regulatory agencies and entities that affect the industry and how they enforce laws and regulations.</li> <li>2. Understand the concept and application of ethical and legal behavior consistent with workplace standards. <ol style="list-style-type: none"> <li>a. Contact a business and obtain a copy of their rules for employment.</li> <li>b. Role play difference ethical scenarios.</li> </ol> </li> <li>3. Understand the role of personal integrity and ethical behavior in the workplace.</li> </ol> <p>G. Leadership and Teamwork</p> <ol style="list-style-type: none"> <li>1. Understand the ways in which preprofessional associations such as the Int’l Graphic Arts Education Assn. (IGAEA) and competitive career development activities enhance academic skills, promote career choices, and contribute to employability.</li> <li>2. Understand leadership, cooperation, collaboration, and effective decision-making skills applied in group or team activities, including the student organization.</li> </ol> <p>H. Technical Knowledge and Skills</p> <ol style="list-style-type: none"> <li>1. Understand the aims, purposes, history, and structure of various professional graphic organizations, and know the opportunities they makes available.</li> </ol>				
--	--	--	--	--

Instructional Units and Competencies	Hours	Industry Standards.	CA Academic Standards	CAHSEE
<b>I Interface</b> A. Touring the Interface B. Managing Files C. Adding Objects to Scenes D. Navigation and Display	10	Information Technology Industry Sector B1.3	ELA 9-10; R; 2.6	
<b>II. Objects</b> A. Hiding and Freezing Objects B. Creating Objects and Mesh Objects C. Creating Objects with Standard Primitives D. Using Extended Primitives E. Creating and Closing Splines F. Selecting Objects by Region or by Name G. Working with Groups H. Transforming Objects I. Moving, Rotating and Scaling Objects J. Aligning Objects K. Cloning and Mirroring Objects L. Spacing Objects M. Using Participle Systems	40	Arts, Media & Entertainment Industry Sector Media Design Pathway A1.2(2.3)  Foundation Standards 2.6	ELA 9-10; R; 2.6  M. 6; MG; 2.1-2.6	
<b>III. Advanced Objects and Sub-Objects</b> A. Creating and Playing Animations B. Controlling Motion and Configuring Time C. Setting the Frame Rate and Time Code D. Modifying Objects E. Using and Editing the Modifier Stack F. Editing Objects G. Creating Sub-Object Selections H. Modifying and Transforming Sub-Objects I. Editing Mesh Objects and Splines J. Working with Compound Objects K. Lofting Objects and Adjusting Lofts L. Editing, Animating and Morphing Objects M. Using Participle Systems and Special Effects	50	Arts, Media & Entertainment Industry Sector Media Design Pathway A2.2	ELA 9-10; R; 2.6  M. 6; MG; 2.1-2.6  S. 9-12; IE; 1.0a & d	
<b>IV. Scenes</b> A. Creating, Adjusting and Placing Cameras B. Animating Cameras C. Creating Lights and Casting Shadows D. Animating Lights	20	Arts, Media & Entertainment Industry Sector Media Design Pathway A2.1 Foundation Standards 4.2	ELA 9-10; R; 2.6  M. 6; MG; 2.1-2.6	

Instructional Units and Competencies	Hours	Industry Standards.	CA Academic Standards	CAHSEE
V. Rapid Prototyping with 3D Printer A. Create Stereo Lithography files suitable for creating solid model output B. Create output on a 3D printer	10	Arts, Media & Entertainment Industry Sector Media Design Pathway A1.2(2.6) A2.2	ELA 9-10; R; 2.6  ELA 11-12; W; 2.6 LS; 2.4a-d	<b>ELA 9-10; R; 2.1 WO; 1.1-1.5</b>
V. Final Production A. Creating Storyboard and Animation Project B. Using the Material Editor and Material Libraries C. Creating Objects D. Adding Maps to Materials E. Creating Reflections F. Using Video Post G. Compositing Scenes H. Adding Backgrounds, Atmospheric Effects, Render Effects I. Rendering Scenes	40	Production 7 Managerial Arts Pathway C1.4 C2.3	M. 6; MG; 2.1-2.6	

10. Additional recommended/optional items

- a. Articulation: None
- b. Academic credit: None
- c. Instructional strategies:
  - Methods of Instruction:
    - a. Lecture
    - b. Audio Visual Materials
    - c. Demonstration
    - d. Research Readings and Written Presentations
    - e. Homework Assignments
    - f. Group & Individual Activities
    - g. Discussion & Group Dynamics
    - h. Quizzes, Tests & Final Exam
    - i. Guest Speakers
    - j. Internet Exploration
- d. Instructional materials: Teacher Generated
- e. Certificates: None