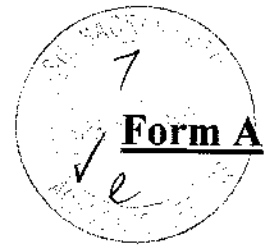




Academic Affairs - Course Proposal

CALIFORNIA STATE UNIVERSITY, SACRAMENTO



Academic Unit: Art		Department Chair: Catherine Turrill	
Type of Course Proposal: New <input checked="" type="checkbox"/> Change <input type="checkbox"/> Deletion <input type="checkbox"/>		Date: 10/15/06	
Does this course fulfill a requirement for single-subject or multiple subject credential students? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		For Catalog Copy: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	CCE: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Semester Effective: Spring 2007 <i>Fall</i>			
Prefix & No. ART142	Title: 3D Computer Modeling		Units: 3
Change to:			
Prefix & No.	Title:		Units:

JUSTIFICATION:

This course will introduce students to 3D computer modeling techniques. There is currently no dedicated course in 3D computer modeling at CSUS. It is intended be the first of three courses that will develop a program of offerings that utilize 3D computer modeling software: 3D Computer Modeling (ART142) 3D Computer Animation (ART143) and Interactive Game Design (CSC125). The course will be targeted to students in Studio Art concentration, for example: Electronic Art, Metals and Sculpture, and to students in Computer Science, for example: Computer Graphics and Computer Games.

NEW COURSE DESCRIPTION: (Not to exceed 80 words, and language should conform to catalog copy.
See <http://www.csus.edu/acaf/univmanual/crspsl.htm> - Guidelines for Catalog Course Description

This course explores a range of 3D computer modeling techniques and processes, leading to the creation of 3D computer models and environments. Example applications in art/new media and computer gaming. Exercises, assignments and projects are designed to build skill levels with 3D computer modeling tools. The course will include demonstrations and workshops in the use of 3D computer modeling software. Critiques, discussion and presentations will develop students' conceptual grasp of 3D computer modeling and virtual reality environments.

Note: May be taken twice for credit. Cross-listed as CSC 126

Prerequisite: CSC10 or Art 97 or equivalent

Corequisite: None

CAN (California Articulation Number):

Graded: Letter Credit/No Credit

Instructor Approval? Yes No

Course Classification: C7

Title for SIS+ (not more than 25 characters)
3D Computer Modeling

Cross Listed?
Yes No

If yes, with what course: CSC 126 3D Computer Modeling

How Many Times Can This Course be Taken for Credit? 2 With Instructor's permission

FOR NEW COURSE PROPOSALS OR SUBSTANTIVE CHANGES ONLY:

Description of the Expected Learning Outcomes: Describe outcomes using the following format:

"Students will be able to: 1), 2), etc." See the example at <http://www.csus.edu/acaf/example.htm>

Students will be able to:

- 1) Use 3D computer modeling tools and 3D computer modeling techniques in the creation of 3D computer models.
- 2) Create 3D computer modeled environments using 3D computer modeling techniques and processes.
- 3) Apply lighting techniques to 3D computer models and environments.
- 4) Apply surfacing techniques to 3D computer models and environments.
- 5) Apply rendering techniques to 3D computer models and environments.
- 6) Proficiently create a specified number and range of 3D computer models and environments using processes and techniques 1 – 5.
- 7) Apply critical understanding to own and others' work.

**Attach a list of the required/recommended course readings and activities [Note: it is understood that these are updated and modified as needed by the instructor(s).] This attachment should be forwarded only to your Dean's office, not Academic Affairs.

Assessment Strategies: A description of the assessment strategies (e.g., portfolios, examinations, performances, pre-and post-tests, conferences with students, student papers) which will be used by the instructor to determine the extent to which students have achieved the learning outcomes noted above:

- 1) Students will be graded on the submission of a specified number of 3D computer models and environments that utilize the process and techniques listed in the Learning Outcomes.
- 2) Students will be graded on completion of software exercises.
- 3) Students will be graded on discussion and class participation in critiques of own and others' work
- 4) Students will also be graded on a final, culminating 3D computer modeling project.

1. Assignments (8 practical assignments): 50% (2 modules of 25%)
2. Class exercises 10%
3. Participation, in critiques and discussion 10%
4. Final project (modeling project) 30%

For whom is this course being developed?

Majors in the Dept X Majors of other Depts X Minors in the Dept X
 Is this course required in a degree program (major, minor, graduate degree, certificate)? Yes No X
 If yes, identify program(s):

Does the proposed change or addition cause a significant increase in the use of College or University resources (lab room, computer facilities, faculty, etc.)? Yes No X
 If yes, attach a description of resources needed and verify that resources are available.

Indicate which department or programs will be affected by the proposed course (if any). Art and Computer Science
The Department Chair's signature below indicates that affected programs have been sent a copy of this proposal form.

Approvals: If proposed change, new course or deletion is approved, sign and date below. If not approved, forward without signing to the next reviewing authority, and attach an explanatory memorandum to the original copy.

Signatures:	Date
Department Chair: <i>C. H. J. [Signature]</i> (ART DEPT)	12/14/06
Department Chair: <i>CSC DEPT. FILED SEPARATELY</i>	
College Dean or Associate Dean: <i>Nancy M. [Signature]</i>	4-4-07
CPSP (for school personnel courses ONLY)	
Associate Vice President and Dean for Academic Programs	CONDITIONAL APPROVAL 9/11/07

Distribution: Academic Affairs (original), Department Chair and College Dean. / Dean's office to send original after approval to Jerri

College of Arts and Letters Curriculum Committee CHECK-OFF LIST FOR COURSE APPROVAL

Name of Department Art Effective Date Fall 2007

Proposed Course Number: ART 142

Course Name: (Series title) 3D Computer Modeling

Contact Person: Rachel Clarke (Art Department) Instructor: Rachel Clarke

Projected Enrollment: 20 Units of Credit: 3

Has the course been offered before? No If yes, under what number?

Suggested Course Classification: C7 Unit distribution: lecture lab activity: X

List the prerequisite(s) for the proposed course.
CSC10 or ART 97 or equivalent

For which students or programs is the course designated?

- Majors in the department
 Minors in the department
 Majors of other departments (Comp. Science Majors in Computer Graphics and Game Design)
 General service
 Other (specify) _____

If approved by the A & L Curriculum Committee, will this course be submitted for consideration in the General Education Program? Yes X No

Method of Presentation:

- Lecture Lecture/Activity Lecture/Discussion Lecture/Laboratory
 Activity Laboratory Seminar Films and/or other visuals
 Performance Other (specify) _____

If different amounts of credit will be available for the proposed course, indicate differences in course requirements for earning the units. N/A

If the course can be taken more than one time for credit, what is the justification for the repetition? How will the two (or more) experiences differ?
The topic is extremely skill intensive. If students re-take the course they will gain more proficiency and fluency with the tools and processes.

What courses currently offered in Arts and Letters or other colleges/departments most closely resemble the proposed course? Please list these other courses and justify why the proposed course will not duplicate them. Not all approved courses are shown in the current catalog so please consult faculty/chair in other schools/departments where duplication might occur. Please list persons you consulted.
The proposed course will not duplicate an existing course.

Professor Rachel Clarke (Art) consulted with Professor John Clevenger (Computer Science) when developing this course. ART 142 (and ultimately ART 143, yet to be created) will be taught in the Art department and will be an upper-division elective in the Studio Art concentration. In addition, Computer Science students will take the class (which will be cross-listed as CSC 126) to gain 3D computer modeling experience for Advanced Computer Graphics (CSC 155) and Object-Oriented Computer Graphics Programming (CSC 133).

Ultimately, completion of ART 142 (CSC 126) will enable students to take a proposed Computer Science course in Interactive Game Design (CSC125).

There is a huge demand for courses in 3D Computer Modeling and Game Design that Professors Clarke and Clevenger have identified. Art students and Computer Science students are continually asking the departments about offerings in these areas of the curriculum and we want to address this and meet the demand.

Professor Clarke also has consulted with Andrew Anker (chair, Graphic Design) and Nick Burnett (chair, Communication Studies) who have said students in their departments may be interested in taking the course as an elective.

Can the course be implemented within the existing departmental allocation? Yes

If the proposed course will require an expenditure of \$100 or more, append a breakdown of expenditure and source of funding.

If this is a new course, how will it be integrated into your present allocation:

1. Will you be giving up another course to make room for the proposed course? Yes
2. What course(s) could you alternate in the schedule with the proposed course?

Art 197 or Art 198 (Prof. Clarke will teach these courses on alternate semesters so that she can also teach ART 142)

3. How often would you schedule the proposed course? Initially every other semester
4. What full-time faculty can teach the course? What other course would they give up in order to teach it?

The proposed course can be taught by any Art Department faculty member with both 3D computer modeling skills and New Media art experience (art using computer technology). Presently this person is Rachel Clarke.

5. Realistically, what fiscal impact might the proposed course have? (*e.g., operating expense, faculty cost, staff cost, student assistants, equipment, etc.*)

Essentially none (apart from the instructor's salary), once a lab fee has been approved and implemented (Professor Clarke will be applying for a Lab Fee of \$20.00 per student to cover the cost of printing class assignments)

List the objectives/goals/expected learning outcomes.

(See also attached syllabus)

Students will be able to:

- 1) Use 3D computer modeling tools and 3D computer modeling techniques in the creation of 3D computer models.
- 2) Create 3D computer modeled environments using 3D computer modeling techniques and processes.
- 3) Apply lighting techniques to 3D computer models and environments.
- 4) Apply surfacing techniques to 3D computer models and environments.
- 5) Apply rendering techniques to 3D computer models and environments.
- 6) Proficiently create a specified number and range of 3D computer models and environments using processes and techniques 1 – 5.
- 7) Apply critical understanding to own and others' work.

What student assessment tools will be used? *(e.g., exams, papers, portfolios.)*

1. Assignments (8 practical assignments): 50% (2 modules of 25%)
 2. Class exercises 10%
 3. Participation in critiques and discussion 10%
 4. Final project (modeling project) 30%
- Students will be graded on assignments and exercises that cover topics addressed in each class (ongoing).
 - Students will be graded on participation in critiques and discussion.
 - Students will also be graded on a final, culminating 3D computer modeling project.
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Syllabus

Art 142: 3D Computer Modeling

Course details:	Contact details:
Professor: Rachel Clarke Semester: Fall 2006 Days: Tuesday and Thursday Time: 9.00 - 11.50am Location: Mariposa Hall, Rm 1007	Email: rclarke@csus.edu Please use email rather than voicemail Phone: 278 - 6316 (voicemail) Office Hours: Tues and Thurs 7.30am - 9:00am Office Location: Kadema 192 or Mariposa 1007 Websites Teaching: http://classes.asn.csus.edu/art.html Art: http://www.rachelclarke.net

Course Description

This course explores a range of 3D computer modeling techniques and processes, leading to the creation of 3D computer models and environments. Example applications in art/new media and computer gaming. Exercises, assignments and projects are designed to build skill levels with 3D computer modeling tools. The course will include demonstrations and workshops in the use of 3D computer modeling software. Critiques, discussion and presentations will develop students' conceptual grasp of 3D computer modeling and virtual reality environments. The particular focus is modeling in Lightwave 3D.

Topics include:

- The hub: modeler and layout
- Creating a 3D computer model: polygon modeling, point modeling, surface normals, splines, subpatch mode and primitive shapes
- Selections
- Constructing and detailing
- Organic modeling
- Working with layers
- Layout
- Lighting techniques
- Surfacing techniques
- Rendering

Students will be required to commit AT LEAST the equivalent of class time to homework projects.

Objectives:

- Demonstrate ability to use the computer as a creative medium.
- Develop visual and conceptual fluency.
- Develop technical skill in 3D computer modeling techniques.

- Develop fluency with a range of 3D computer modeling processes: modeling, lighting, surfacing, rendering.
- Develop problem-solving skills.
- Develop an awareness of 3D computer modeling, animation and virtual reality within contemporary culture.
- Apply conceptual understanding to own and others' work.
- Participate in critiques with peers.

Student Responsibilities:

- Complete creative projects as assigned.
- Complete software exercises as assigned.
- Completion of a final project.
- Follow a structured process in project development.
- Completion of all projects, written work, quizzes, homework, tutorial exercises and final project, meeting specified deadlines and criteria. Ongoing grading will occur. As a result, late project submission will be penalized.
- Active participation in class critiques and discussions.
- All students must have an active email account.
- Full attendance or official notification of absence is mandatory. More than three unauthorized absences will result in a 1/2 letter drop, more than six will result in a full letter drop, etc. Each time a student is late or leaves class early is equivalent to 1/4 of a full absence on the roll.

Computer Room Information:

- Mariposa 1007 is a MAC lab running OSX operating system. It has a network share folder called *userspace* where students are permitted to store files temporarily.
- Log in as labuser. Log out after each session.
- Supervised open lab times: in rooms 1003, 1005, 1007, 1009, consult the schedule outside the classroom. You can often use the computers when there is no class being taught in that room.
- During lab hours the door will be propped wide open. The lab assistant on duty will notify students of an incoming class 5 minutes before it begins.
- Report computer problems to the lab technician on duty.
- Students may ask a professor to permit them to use a free computer in their classroom.
- The lab will not be open during major holidays when the campus is closed.

Printing

- Students have full access to the black and white laserjet printer. Students will need to use their one-card when making prints.
- Color printing will only be permitted during class time, and for specific projects and assignments.

Lab Rules

- All electronic gadgets: cell phones, pagers, etc must be turned off while students are in the lab.
- Use headphones when working with sound editing equipment.
- Headphones are not permitted for personal music listening during class time.
- Browsing, surfing and exploring the net are only permitted when stated by the professor. Students may check the asn website for course details, but personal email and web surfing are not permitted during class time.
- No drinks and food anywhere near the computers. Students are permitted to place a beverage on the table at the far corner of the classroom.
- Tidy up trash, respect the lab and be considerate to fellow class members and lab users.

Materials:

- USB key (recommended) / external hard drive.
- Rewritable CDs (CD-RW).
- Sharpie or other indelible marker for labeling CDs.
- Hardback or spiral-bound dedicated sketchbook: for taking notes, making sketches and development of projects.

Required Texts:**Manual:**

Essential Lightwave 3D 8, Timothy Albee, Wordware Publishing, Inc.; Bk&CD-Rom edition (February 2005), **ISBN: 1556220820**

Reading:

Virtual Art : From Illusion to Immersion (Leonardo Books), Oliver Grau, The MIT Press (October 1, 2004), **ISBN: 0262572230**

Recommended Texts:

LightWave 3D 8 Lighting, Wordware Publishing, Inc.; Bk&CD-Rom edition (April 25, 2004), **ISBN: 1556220944**

LightWave 3D 8 Texturing Wordware Publishing, Inc.; Bk&CD-Rom edition (June 15, 2004), **ISBN: 1556222858**

LightWave 3D 8 for Windows and Macintosh : Visual QuickStart Guide, Arthur Howe, Brian E. Marshall, Peachpit Press (June 25, 2004), **ISBN: 032123295X**

Plagiarism and Copyright:**From the university policies manual:**

Unless specifically stated in the assignment outline, students are not permitted to appropriate the works of others into their visual or written work for this course. Students will be expected to develop their own digital works and ideas.

Grading Allocation:

Areas of grading	Percentage
Assignment modules: module 1 (25%) and module 2 (25%)	50 %
Exercises	10%
Participation (critiques and discussions)	10%
Final project - proposal, final work, presentation, evaluation.	30 %

Grading Criteria:	Percentage/letter grade
Fulfilled all course objectives and requirements as specified. Excellent standard of creative work.	90 - 100 / A
Fulfilled course objectives and requirements as specified. Strong standard of creative work.	80 - 89 / B
Fulfilled most course objectives and requirements as specified. Adequate standard of creative work.	70 - 79 / C
Did not fulfill most course objectives and requirements as specified. Unsatisfactory standard of creative work.	60 - 69 / D
Not fulfilled course objectives and requirements as specified. Deficient standard of creative work. Fail grade.	40 - 59 / F
Incomplete. Student does not complete work and discusses this with me. The department has a petition that must be signed by both the student and me if an 'I' grade is to be awarded.	I
Unauthorized withdrawal. Assigned if student disappears from the class without notification.	UW
Authorized withdrawal is assigned if student formally withdraws from a course after the census date.	W

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Art 142: 3D Computer Modeling Course Schedule

Manual: *Essential Lightwave 3D 8*, Timothy Albee, Wordware Publishing, Inc.;
Bk&CD-Rom edition (February 2005), ISBN: 1556220820

Text: *Virtual Art: From Illusion to Immersion* (Leonardo Books), Oliver Grau, The MIT
Press (October 1, 2004), ISBN: 0262572230

Week 1:

MODULE 1 - WEEKS 1 - 6

Introduction to the Lightwave 3D interface:

- The hub, modeler and layout
- Concepts of 3-dimensional space: X,Y,Z coordinates
- Introduction to the modeler: Interface, viewports, menus, keyboard shortcuts, layers
- Modes: points, polygons, symmetry
- Using modeler toolsets: create, modify, multiply, construct, detail and map

Week 2:

Points
Polygons
Planar vs non-planar
Selections
Symmetry
Surface normal
Sub-patch mode
Numeric panel
Homework: Review manual p49 - 62

Week 3:

Primitives
Numeric panel
Primitive Tools
Working with layers
Surfacing

Modeling assignment 1: 3 Simple objects
Discussion and powerpoint examples: Chapter 4, *Virtual Art: Intermedia Stages of Virtual Reality in the 20th Century*

Week 4:

Symmetrical editing
Move, rotate, scale, stretch
Bevel, extrude, lathe, smooth-shift, drill, pole

Modeling assignment 2: more complex found object
Homework: Review manual p64 - 86

Week 5:

Constructing and detailing

Modeling assignment 3: architectural space
Homework: Review manual p129-145
Discussion and powerpoint examples: Chapter 5, *Virtual Art: Digital! The Natural Interface*

Week 6:

Organic modeling: subpatches, weight maps

Modeling assignment 4:
2 organic objects; one natural, one manufactured
Homework: Review manual p179 - 187

SUBMIT MODULE 1

<p>Week 7: MODULE 2 WEEKS 7 - 11 Modeling exercise 5: Organic modeling: body and facial modeling</p> <p>Homework: Review manual p196-220 Discussion and powerpoint examples: Chapter 8, Virtual Art: <i>Evolution</i></p>
<p>Week 8: Critique Splines, patching</p> <p>Modeling assignment 6: spline modeling</p>
<p>Week 9: Layout interface Camera, objects, lighting, surfacing</p> <p>Surface editor Image maps, UV maps Texture editor Gradients</p> <p>Homework: Review manual p110-127</p>
<p>Week 10: Lighting techniques - 3 point lighting - Qualities of light, color temperature - Shadows</p> <p>Homework: Review manual p89-108 Discussion and PowerPoint examples: Chapter 7, Virtual Art: <i>Telepresence</i></p>
<p>Week 11: Application of lighting techniques in indoor and outdoor settings Modeling assignment 7: Lighting a still life (Color and light temperature in interior setting) Modeling assignment 8: Lighting an environment (Color and light temperature in outddor setting) SUBMIT MODULE 2</p>
<p>Week 12: Final project: Models / modeled environment</p> <p>Student creates a modeled environment (of their own choice) containing at least 4 models (using a range of modeling techniques) and incorporates consistent lighting and surfacing/texturing. This is a culminating project that utilizes all skills and techniques learned in the class</p>
<p>Week 13: Models / modeled environment (work on final, extended project, listed on week 12)</p>
<p>Week 14: Final project: Models / modeled environment (work on final, extended project, listed on week 12)</p>
<p>Week 15: Final project: Models / modeled environment (work on final, extended project, listed on week 12)</p>
<p>Week 16: Final project: critique / presentation SUBMIT FINAL PROJECT</p>