GAVILAN COLLEGE
5055 Santa Teresa Blvd
Gilroy, CA 95023

Course Outline

COURSE: CGD 9 DIVISION: 50 ALSO LISTED AS:

TERM EFFECTIVE: Fall 2012 CURRICULUM APPROVAL DATE: 03/12/2012

SHORT TITLE: ADV CGD APPLICATION II

LONG TITLE: Advanced Computer Graphics for Design Application II

Units	Number of Weeks	Type	Contact Hours/Week	Total Contact Hours
3	17.34	Lecture:	2	34.68
		Lab:	3	52.02
		Other:	0	0
		Total:	5	86.7

COURSE DESCRIPTION:

Advanced computer graphics and design course that combines technical computer graphic skills with interdisciplinary design proficiencies including creating computer imagery, transformations, and rendering to create 3D model using geometric primitives, projections for computer animation and data visualization. Includes structural analysis and emphasis on developing products that include ergonomic features and sustainable materials. Work within electronic portfolio demonstrates skills and knowledge of technical graphic design to visualize, develop and present products to meet societal needs. ADVISORY: Satisfactory score on the English placement exam or a grade C or better in English 250, completion of Mathematics 233 or satisfactory Mathematics placement. Completion of CGD 2 and CGD 8 with a grade of C or better. Computer lab work can be done both in lab and off-site.

PREREQUISITES:

COREQUISITES:

CREDIT STATUS: D - Credit - Degree Applicable

GRADING MODES:
L - Standard Letter Grade

REPEATABILITY: N - Course may not be repeated

SCHEDULE TYPES:
02 - Lecture and/or discussion
03 - Lecture/Laboratory
04 - Laboratory/Studio/Activity
72 - Dist. Ed Internet Delayed

STUDENT LEARNING OUTCOMES:

1. Research and present critiques of sample portfolios representative of CGD field students seeks to enter.

Measure: Class Presentation

ILO: 3, 6, 4, 7. 1, 5

2. Propose visual solutions to advanced design problems using a systematic research process.

Measure: Design sketches & 3D models

ILO: 1, 5, 2, 7, 3, 4, 7

3. Evaluate relevance of constructive criticism of schematic design to develop working drawings of revised product.

Measure: Critiques

ILO: 1, 7, 4, 2, 3, 6. 5

4. Develop alternatives for a design problems visually communicate how each addresses ergonomic need.

Measure: 3D model ergonomic product

ILO: 7, 3, 1, 2, 4, 5, 6

5. Create advanced working drawings of product using industry standards for selected design field.

Measure: Working drawings

ILO: 7, 3, 2, 1, 6, 5

6. Linear strength analysis of 3D rendered and animated 3D models.

Measure: data analysis

ILO: 1, 5, 7, 3, 2, 6, 4

7. Present final electronic portfolio featuring design abilities, technical proficiencies and marketing competencies.

Measure: Portfolio

ILO: 6, 1, 3, 2, 5, 7

CONTENT, STUDENT PERFORMANCE OBJECTIVES, OUT-OF-CLASS ASSIGNMENTS:

Curriculum Approval Date: 03/12/2012

8 Hours

CONTENT: Review of CGD careers and products they produce. Integration of creative problem solving, elements of design, typography, color/design theories and

SPO: Research and report analysis of pros and cons of ways professional designers present their work in electronic portfolios.

HOMEWORK: Use design problem solving process for research strategy to obtain quality sample of professional electronic portfolios using a MLA formatted multimedia presentation that demonstrates advanced knowledge of color theory, typography and design principles.

15 Hours

CONTENT: Advanced ergonomics, materials, design, marketing and ANSI/ATMS standards.

SPO: Apply design problem solving graphics to develop a solution to address a need in terms of function, aesthetics, materials and affordability.

HOMEWORK: Design and present a flier of product that addresses a real need using a rendered 3D model of the product showing how it cost effectively addresses ergonomic issues.

5 Hours

CONTENT: Giving and taking effective constructive criticism.

SPO: Provide, evaluate and use constructive criticism.

HOMEWORK: Critique peers products and use their feedback to revise pervious presentation.

15 Hours

CONTENT: Professional standards for working drawing standards for designed products.

SPO: Professionally dimension working drawings.

HOMEWORK: Prepare working drawings of product using industry dimensioning standards.

20 Hours

CONTENT: Advanced use of 3D models and analysis to develop and engineer product design.

SPO: Create, render, animate and analyze 3D model

HOMEWORK: Produce, animate, render and analyze assembly model of product.

17 Hours

CONTENT: Design problem solving and human factors for designing & marketing products

SPO: Verbally present design problem solving process used to determine need for product, to use ergonomic principles and incorporate design principles within product brochure that brands and communicates ways student's product addresses users' unique needs.

HOMEWORK: Create brochure to market designed product to a target audience using color theory, graphic design and topographic principles targeting potential customers.

8 Hours

CONTENT: Use of multimedia to produce effective design portfolios

SPO: Apply design skills to create an organized and cohesive multimedia production designed for a specific position and/or university program.

HOMEWORK: Create specialized electronic portfolio to apply for an identified job or school.

2 Hours

Final Exam

METHODS OF INSTRUCTION:

Lecture, discussion, field experiences, guest lectures, demonstrations to support independent and group design and research projects reinforced by instructor and peer critiques.

METHODS OF EVALUATION:

CATEGORY 1 - The types of writing assignments required:

Percent range of total grade: 10 % to 15 %

Written Homework

Reading Reports

Lab Reports

Other: Written Critiques

CATEGORY 2 -The problem-solving assignments required:

Percent range of total grade: 25 % to 45 %

Homework Problems

Quizzes

Exams

Other: Design Problems

CATEGORY 3 -The types of skill demonstrations required:

Percent range of total grade: 10 % to 30 %

Class Performance/s

Performance Exams

CATEGORY 4 - The types of objective examinations used in the course:

Percent range of total grade: 15 % to 25 %

Multiple Choice

Matching Items

Completion

Other: Applied Skill Exam using CAD or other competency

CATEGORY 5 - Any other methods of evaluation:

Percent range of total grade: 10 % to 15 %
Portfolio of course projects.

REPRESENTATIVE TEXTBOOKS:

Required:

Donald A. Norman, "The Design of Future Things", Basic Books, 2007, or other appropriate college level text.

ISBN: 978-0465002276

Reading level of text: 13.5 gradeVerified by: http://www.standards-schmandards.com/exhibits/rix/index.php

Other textbooks or materials to be purchased by the student: SolidWorks Surfacing and Complex Shape Modeling Bible. Matt. Lombard. Wiley. 2008

Sketchbook, sketch pens and pencils, headphones, flash drive

ARTICULATION and CERTIFICATE INFORMATION:

Associate Degree:

CSU GE:

IGETC:

CSU TRANSFER:

Transferable CSU, effective 199670

UC TRANSFER:

Not Transferable

SUPPLEMENTAL DATA:

Basic Skills: N
Classification: I
Noncredit Category: Y
Cooperative Education:
Program Status: 1 Program Applicable
Special Class Status: N
CAN:
CAN Sequence:
CSU Crosswalk Course Department: CGD
CSU Crosswalk Course Number: 9
Prior to College Level: Y
Non Credit Enhanced Funding: N
Funding Agency Code: Y
In-Service: N
Occupational Course: B
Maximum Hours:
Minimum Hours:
Course Control Number: CCC000302289
Sports/Physical Education Course: N
Taxonomy of Program: 095300