MAT 190: PROGRAMMING FOR ANIMATION, GAMES, AND INTERACTIVITY

Course Description
This course emphasizes programming for interactive media, including 2D games and rich Internet applications. Students learn to code within the context of the visual arts using ActionScript, Processing, and/or JavaScript and explore the creative and technical aspects of designing interactive user experiences that integrate media, animation, and interactivity. Additional topics include user interface design, experience design, interactive storytelling, game design, animation techniques, and developing content for delivery across a variety of platforms and devices.

Student Learning Outcomes
The MiraCosta faculty believe that students who complete one or more certificates or degrees are systematic, critical, creative thinkers and clear communicators who are intellectually curious, technically proficient, professional, and aesthetically literate. To that end, the faculty has identified seven Student Learning Outcomes (SLO’s) that apply directly to the high-level skills you are expected to possess in the workforce: Technical Skills, Application of Discipline Skills, Critical Thinking and Problem Solving, Communication, Professional Behavior, Aesthetic Literacy and Appreciation, and Global Awareness and Responsible Citizenship.

To achieve this goal, you are expected to achieve competency in the following course-level Student Learning Outcomes, each of which help you achieve one or more of the above outcomes:

1. Conceptualize, design, and produce user interfaces, applications, and/or experiences that integrate media, animation, and interactivity.
2. Compose scripts that effectively manage data and utilize programmatic techniques.
3. Examine, analyze, and evaluate interactive media products and processes.

Course Objectives
Students will build their animation skills and learn programming techniques and language fundamentals to develop effective animations, interfaces, and sophisticated interactive web and/or multimedia applications. Students will learn to:

1. Apply scripts that effectively utilize functions, logic, variables, loops, and other programmatic techniques
2. Implement project programming techniques into functional user interface designs
3. Examine, analyze, and critique interactive media products and processes
4. Conceptualize and plan animation and interactive sequences for screen output or Web delivery
5. Develop and produce interactive content and animations
6. Create and optimize graphics, audio, and video for Web
and/or multimedia applications
7. Implement design principles into user interface designs
8. Develop rich user experiences, including integrating animation, text, graphics, audio, and video
9. Design for interactivity
10. Plan, design, and program a game or comprehensive interactive media project.

Design skills, design process, personal expression, content development, project management and trends in visual communication as they relate to interactive media will be emphasized along with the learning of tools and techniques.

**READING**

**Recommended Reading**
- *Learning Actionscript 3.0 (Second Edition)* by Rich Shupe
- *Foundation ActionScript 3 (2nd Edition)* by Darren Richardson, Paul Milbourne
- *Adobe - Programming Actionscript 3.0 Manual*

**Optional Reading**
- *Essential Actionscript 3.0* by Colin Moock
- *Actionscript 3.0 Animation: Making Things Move* by Keith Peters
- *Actionscript 3.0 Cookbook* by Joey Lott
- *Actionscript 3.0 Game Programming University* by Gary Rosenweig
- *Learning Flash CS4 Professional* by Rich Shupe
- *Flash CS3 Professional: H.O.T.* by Todd Perkins
- *Analog In, Digital Out* by Brendan Dawes
- *Photoshop for Windows and Macintosh: Visual Quickstart Guide* by Weinmann and Lourekas
- *Experience Design* by Nathan Shedroff
- *Understanding Comics: The Invisible Art* by Scott McCloud
- *Cyber_Reader: Critical writings for the digital era* Edited by Neil Spiller
- *Information Arts* by Steven Wilson

The instructor can suggest other books and reference material.

**CLASS MATERIALS**
- USB Flash Memory Drive/Key
- A sketchbook or notebook

**Grading and Evaluation**

Your final grade is based on your performance on exercises, projects, explorations (blog postings and presentation) and class participation.

**Total Possible Points = 1,000**
- Exercises/Assignments: 420 points (42%)
- Final Project - Interactive Game: 420 points (42%)
- Application Quizzes: 100 points (10%)
- Class Participation: 60 points (6%)

Full project details, descriptions, and requirements will be available online at [http://karlcleveland.com/190](http://karlcleveland.com/190).

**Project grades are based on the quality of your work in the following areas:** content/concept, form, function, and technique. For information on the specific grading considerations related to each of these areas, see [http://karlcleveland.com/190/grading.htm](http://karlcleveland.com/190/grading.htm).

**Percentage | Points | Grade**
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90 – 100% | 900 – 1,000 | A
80 – 89% | 800 – 899 | B
70 – 79% | 700 – 799 | C
60 – 69% | 600 – 699 | D
00 – 59% | 0 – 599 | F

**Grading Guidelines**
- A – Outstanding achievement; available only for the highest accomplishment.
- B – Praiseworthy performance; definitely above average.
- C – Average; awarded for satisfactory performance; the most common undergraduate grade.
- D – Minimally passing; less than average achievement for undergraduate students.
- F – Failing.

An incomplete grade will only be granted for extenuating circumstances.

**Lab Hours**

Computer lab hours are available to students in the Library and Information Hub. The library is generally open: Mon – Thurs, 8 a.m. – 9:30 p.m. Friday, 8:00 a.m. – 3:00 p.m. Saturday, 10:00 a.m. – 5:00 p.m.

**Participation**

Participation in class will be considered as part of your course grade. Students are expected to attend and be on time to every class. If you decide to withdraw from the course, you must file the appropriate paperwork or risk receiving an “F” in the class.

**Due Dates**

All work is expected to be completed by the due dates. Unless otherwise specified, work is due at the beginning of the class period. Late work may be lowered by one letter grade for each class meeting that it is late.
APPLICATION QUIZZES
In-class application quizzes will be given as we progress through the semester to assess your comprehension of the material provided in the textbook, course lectures, and/or other readings and materials. Application quizzes consist of writing a short Actionscript program in Flash within a specified time limit (often 20 minutes). Quizzes will test specific knowledge of core Actionscript programming concepts. Advanced notice and instructions regarding quizzes will be given at least one week prior to the quiz. You will not be allowed to use notes, books, or the Internet for your quizzes (although you can use the “help” menu within the Flash software). Quizzes will be graded based on full credit plus (check plus = successful implementation of the program plus the inclusion of extra features within the time limit), full credit (check = successful implementation of the program within the time limit), partial credit (check minus = not fully completed within the time limit and/or containing minor errors/bugs), or no credit (O = not completed and/or containing major errors/bugs). There are no make-up quizzes. Attendance on the day of a quiz is critical as you must be present to take a quiz. Your lowest quiz score will be dropped.

Prerequisites/Advisories
MAT 150 or equivalent experience is advised. Some experience with Photoshop is recommended.

Classroom Rules
All students are expected to follow the rules of the computer lab. No food or drinks are allowed in the classroom. Cell phones, iPods, and electronic devices should be turned off while in the classroom. No browsing the Internet, instant messaging, playing computer games, or writing e-mail during active classroom time.

Conduct
All students are expected to follow the administrative rules and standards of conduct detailed in the University catalog. In particular, plagiarism may result in a failing grade and other consequences. Students are expected to produce original work. A student may not use or copy by any means another’s work (or portions of it) and represent it as his/her own. Quotations, photographs, or other artwork used by a student should be given appropriate credit or reference.

Disability Accommodations
Students with a disability may be entitled to appropriate accommodations and are encouraged to contact the Disabled Students Programs & Services (DSPS) office at 795-6658.

Administrative Dates
9/2 is the “Add” deadline. 9/2 is the “Drop” deadline (without a “W” recorded). 9/23 is the “Pass/No Pass” option deadline. 11/18 is the “Withdraw” deadline (with a “W” recorded).