PROPOSAL TO OFFER A MINOR IN FALL 2006

Proposed Name of Minor: COMPUTER GAME DESIGN AND DEVELOPMENT

Faculty Proposing Minor: William Wolfe, Ivona Grzegorczyk, Jack Reilly, Liz King, AJ Bieszczad

Date: November 15, 2005

---

1. Catalog Description:

Minor in Computer Game Design and Development (24 - 39 units)

This interdisciplinary minor will provide students with the skills needed for a variety of careers in the field of Computer Gaming. Students in this minor will receive a foundation in artistic, mathematical, psychological and computer programming tools and techniques relevant to the design and development of computer games as well as in business methodologies applicable to Computer Gaming. Legal and societal implications of computer games will also be studied.

---

2. Justification for Proposed Minor (< 100 words):

The design and development of computer games is a rapidly growing academic area. It is highly interdisciplinary and is having a major impact on all levels of education. The gaming industry that has become an important driver for the economy requires specialists with a variety of backgrounds. Game companies need artists, mathematicians and computer scientists, but also writers for story building, psychologists for creating a fun factor in games, and business-savvy professionals, who ensure financial soundness of the endeavors. In addition, the use of games by a growing part of the population has serious societal and legal implications that need to be studied. This computer gaming minor is a blend of several disciplines, including a wide range of academic areas, such as Art, Business, Mathematics, Psychology and Computer Science. This minor is meant to meet the need of an interdisciplinary curriculum that prepares students with a working knowledge necessary to pursue a career in the gaming industry. As such it is consistent with the interdisciplinary mission of CSUCI.

---

2. Total Number of Units in the Minor (including pre-/ co-requisites):

24 - 39 UNITS

---

3. Lower-Division Requirements (including pre-/ co-requisites):

12 Units Required

COMP 105 Introduction to Programming (3)
MATH 137 Strategies and Game Design (3)
ART 205 Multimedia (3)
ART 206 Animation (3)

---

4. Upper-Division Requirements (including pre-/ co-requisites):

3 Units Required

COMP 437 Foundations of Computer Game Development (3)

5. Lower and Upper-Division Electives (if any):

9 Units Required (not including pre-requisite courses)

Select three courses from the following list.

Note: Prerequisites are indicated in parentheses.

Note: If students choose among the following four courses the computer gaming minor may be completed with 24 units.
ART 315 Animation Media and Techniques (3) (ART 206)
ART 327 Communication Design Technology: Multimedia Theory and Process (3) (ART 205)
COMP 337 Survey of Computer Gaming (3)
MGT 307 Management of Organizations (3)

Courses on this list have prerequisites that may increase the number of units needed for the minor.
ART 326 Digital Media Art: 3D Computer Animation (3) (ART 206, ART 312)
ART 492 Internship (1-3) (Senior Standing, Art Program Portfolio, and consent of the instructor)
ART 494 Independent Study (1-3) (Senior Standing, Art Program Portfolio, and consent of the instructor)
COMP 350 Introduction to Software Engineering (3) (COMP 150, COMP 151, COMP 162,COMP 232, COMP 262)
COMP 425 Computer Game Programming (3) (COMP 150, COMP 151)
COMP 464 Computer Graphics I (3) (COMP 150 COMP 151, COMP 162, COMP 232, COMP 262, COMP 350, MATH 240)
COMP 469 Artificial Intelligence (3) (COMP 232, COMP 262, COMP 350, COMP 362)
COMP 492 Internship (1-3) (Upper division standing and Program approval of written proposal)
COMP 494 Independent Research (1-3) (Upper division standing and Program approval of written proposal)
MATH 437 Mathematics for Game Development (3) (MATH 137 or MATH 300)
MATH 354 Analysis of Algorithms (3) (MATH 300 and some computer programming experience)
MATH 492 Internship (1-3) (Upper division standing and Program approval of written proposal)
MATH 494 Independent Study (1-3) (Upper division standing and Program approval of written proposal)
MGT 471 Project Management (3) (MGT 307)
PSY/COMP 449 Human/Computer Interactions (3) (Programming experience or consent of instructor)

6. Additional Facilities/ Faculty/ Resources Needed to Offer the Minor (if any):

No other facilities/faculty/resources are needed beyond the CSUCI planned facilities and faculty to offer the B.A. in Art, or the B.S. Computer Science and Mathematics degrees.

7. Advisors from Mathematics, Computer Science and Art will advise the students interested in this minor.

<u>Review and Approval:</u>

1. <u>Curriculum Committee Approval</u>:

Curriculum Chair: _____   Date: _____

2. <u>Academic Senate Approval</u>:

Chair, Academic Senate: _____   Date: _____

3. <u>Administration Approval:</u>

President (or designee): _____   Date: _____

The following chart shows the dependencies between the courses required for the Computer Gaming Minor. The numbers shown in second lines in the boxes indicate the number of units for the course.

The total number of units that a student will be required to take to achieve the Computer Gaming Minor will depend on their major. Computer Science, Art, and Mathematics majors will have little difficulty finding a total of 24 units to complete the Computer Gaming Minor. Computer Science students would take Art 205 and Art 206 in addition to their major courses and appropriately selected major electives. In addition to the 15 units of required Computer Gaming courses, Art majors might take Art 315, Art 326 and Art 327 as electives.   Likewise, Mathematics majors can take any of the Comp and Math electives on the Computer Gaming list with little concern about additional prerequisites.

Students with other majors would have to choose their electives wisely in order to complete the Computer Gaming Minor within 24 units. For these students the options are limited. Such students might select -- along with the 15 required Computer Gaming units -- electives such as Art 315, Art 327, Comp 337 or Psy 449, each of which has either no prerequisites or prerequisites that are satisfied by the 12 units of Computer Gaming required courses. For these students (non-CS, non-Art, non-Math) choosing other electives could significantly increase the number of units required to achieve the Computer Gaming Minor.

Computer Gaming Minor
Prerequisite Chart

COMP105
3 units

MATH137
3 units

ART205
3 units

ART206
3 units

COMP437
3 units

Elective 1
3 units

Elective 2
3 units

Elective 3
3 units

Other
(as required)