

NEW COURSE PROPOSAL

DATE: NOVEMBER 8, 2005

PROGRAM AREA COMPUTER SCIENCE

1. Catalog Description of the Course. *[Follow accepted catalog format.]*

Prefix COMP **Course#** 437 **Title** FOUNDATIONS OF COMPUTER GAME DEVELOPMENT **Units** (3)

3 hours Lecture **per week**

☒ **Prerequisites** COMP105, MATH137, ART205, ART206 or instructor permission

☐ **Corequisites** none

Description This course lays down the foundation for a multi-disciplinary approach to computer game development. The students study game design principles followed by implementation methodologies and technologies. Management issues in the gaming industry are also examined. The students develop an understanding of how various perspectives from art, technology and business come together in the creation of compelling and profitable game entertainment.

☒ **Gen Ed**

Categories B4, UDIGE

☐ **Lab Fee Required**

Graded

☐ **CR/NC**

☐ **Repeatable for up to** **units**

☒ **A - F**

☐ **Optional** (Student's choice)

Total Completions Allowed

☐ **Multiple Enrollment in same semester**

2. Mode of Instruction.

	Units	Hours per Unit	Benchmark Enrollment	Graded Component	CS # (filled in by Dean)
Lecture	3	1	24	☐	
Seminar				☐	
Laboratory				☐	
Activity				☐	

3. Justification and Learning Objectives for the Course. (Indicate whether required or elective, and whether it meets University Writing, and/or Language requirements) *[Use as much space as necessary]*

Justification: This General Education course is a required upper division course for the Computer Gaming Minor. It is also an elective in Computer Science and Math. The students enrolled in the lower division required courses study several areas necessary for effective workers in the gaming industry. This interdisciplinary course both combines everything the student has learned in those specific courses and adds additional expertise in such areas as management considerations, storytelling, and more. It equips the students with an understanding of the roles of all members of a game development team. Local computer gaming representatives have stated that this knowledge is very important for their employees. The major outcome of this course is a game design document .

This course satisfies the University Writing and/or Language requirements, because the students collaborating in multidisciplinary groups will produce substantial design documents and business plans for new computer games. The documents are expected to be extensive and cover all aspects of game development including storylines, visual and audio components, software and hardware design, and business analyses. Many documents will also include legal, psychological and societal evaluations of the impacts of the proposed games.

Learning Objectives:

Upon completion of this course students will be able to:

(Press enter for the next bulleted item)

- Analyze the business and technical tradeoffs of producing a game
- Describe the basic components of a computer game and gaming environments.
- Discuss the psychological imperatives in game design.
- Identify and design a variety of game strategies and environments.
- Incorporate visual arts and audio in games.

- Design effective user interfaces in computer games.
- Incorporate artificial intelligence methods in game design.
- Design a variety of game components including storyline, storyboard, characters, virtual worlds, control strategies, etc.
- Describe the composition of a game development team and the roles of its members.
- Work as part of a game development team.
- Organize and express ideas clearly and convincingly in oral and written forms.
- Construct, submit and evaluate written reports on related technical topics
- Write a detailed business plans and a design document for computer games.

4. Is this a General Education Course YES ☒ NO ☐
If Yes, indicate GE category and attach GE Criteria Form:

A (English Language, Communication, Critical Thinking)

A-1 Oral Communication ☐

A-2 English Writing ☐

A-3 Critical Thinking ☐

B (Mathematics, Sciences & Technology)

B-1 Physical Sciences ☐

B-2 Life Sciences – Biology ☐

B-3 Mathematics – Mathematics and Applications ☐

B-4 Computers and Information Technology ☒

C (Fine Arts, Literature, Languages & Cultures)

C-1 Art ☐

C-2 Literature Courses ☐

C-3a Language ☐

C-3b Multicultural ☐

D (Social Perspectives)

E (Human Psychological and Physiological Perspectives) ☐

UD Interdisciplinary ☒

5. Course Content in Outline Form. [Be as brief as possible, but use as much space as necessary]
(Press enter for the next bulleted item)

- Business and technical tradeoffs in game development
- Multidisciplinary team requirement.
- Computer game uses (beyond entertainment)
- Components of a Computer Gaming system.
- The "idea" and storyline for a computer game.
- How to write an effective game design document.
- Roles played in a computer game.
- The top-down structure of a computer game.
- Probability and Statistics in a computer game.
- Computer Graphics of a computer game.
- Matematics and Physics of a computer game.
- The psychology of playing games.
- The human-computer interaction design in a computer game.
- The use of networks and distributed computing in computer games.

Does this course overlap a course offered in your academic program? YES ☐ NO ☒

If YES, what course(s) and provide a justification of the overlap?

Does this course overlap a course offered in another academic area? YES ☐ NO ☒

If YES, what course(s) and provide a justification of the overlap?

Signature of Academic Chair of the other academic area is required on the consultation sheet below.

6. Cross-listed Courses (Please fill out separate form for each PREFIX)

List Cross-listed Courses

Signature of Academic Chair(s) of the other academic area(s) is required on the consultation sheet below

Department responsible for staffing:

7. References. *[Provide 3 - 5 references on which this course is based and/or support it.]*
(Press enter for the next number)

1. Introduction to Game Development, Steve Rabin, Ed., Charles River Media Publishing, 2005.
2. Game Development and Production, Eric Bethke, Wordware Publishing, 2003
3. Rules of Play : Game Design Fundamentals, Katie Salen, Eric Zimmerman, The MIT Press, 2003.

8. List Faculty Qualified to Teach This Course.

Computer Science, Mathematics, Physics, Business, English, Psychology Faculty

9. Frequency.

a. Projected semesters to be offered: Fall ☒ Spring ☒ Summer ☐

10. New Resources Required. YES ☐ NO ☒

If YES, list the resources needed and obtain signatures from the appropriate programs/units on the consultation sheet below.

- a. Computer (data processing), audio visual, broadcasting needs, other equipment)
- b. Library needs
- c. Facility/space needs

11. Will this new course alter any degree, credential, certificate, or minor in your program? YES ☐ NO ☒

If, YES attach a program modification form for all programs affected.

AJ Bieszczad, Ron Rygier

Proposer of Course

9/12/2005

Date

Approvals

Program Chair

Date

General Education Committee Chair

Date

Curriculum Committee Chair

Date

Dean

Date