

I. CATALOG INFORMATIONA. Discipline: GAME DESIGNB. Subject Code and Number: GAME M202C. Course Title: Game Design Technologies II

D. Credit Course units:

Units: 3Lecture Hours per week: 2Lab Hours per week : 3Variable Units : No

E. Student Learning Hours:

Lecture Hours:

Classroom hours: 35 - 35

Laboratory/Activity Hours:

Laboratory/Activity Hours 52.5 - 52.5**Total Combined Hours** in a 17.5 week term: 87.5 - 87.5

F. Non-Credit Course hours per week _____

G. May be taken a total of: 1 2 3 4 time(s) for creditH. Is the course co-designated (same as) another course: No Yes

If YES, designate course Subject Code & Number: _____

I. Course Description:

Provides an in-depth introduction to technologies and techniques used to create virtual reality and mobile games. Introduces looping, decision-making, objects, and events. Explores music, sound, utilities, and graphics implementation. Covers revision control environments and the workflow of packaging computer game-oriented apps for software publishing marketplaces. Exercises industry best practices for creating intuitive player controls, meaningful gameplay cues, visual consistency, and techniques for facilitating the suspension of disbelief.

J. Entrance Skills

*Prerequisite: No Yes Course(s)GAME M102*Corequisite: No Yes Course(s)

Limitation on Enrollment: No Yes

Recommended Preparation: No Yes Course(s)GAME M110 and GAME M115

□ □

Other:

No Yes

K. Other Catalog Information:

Formerly MM M75 and GAME M201.

II. COURSE OBJECTIVES

Upon successful completion of the course, a student will be able to:

		Methods of evaluation will be consistent with, but not limited by, the following types or examples.
1	review current trends for mobile, virtual reality (VR), and augmented reality (AR) games.	Essays Quizzes Critique using project specific rubric
2	define and apply fundamental computer game elements such as sprites, basic animation, collision detection, event-response.	Essays Quizzes Critique using project specific rubric
3	compare the foundations of user interface (UI) and heads-up display (HUD) design, addressing aesthetic and technical concerns.	Essays Quizzes Critique using project specific rubric
4	identify game development software and demonstrate the creation of mobile games.	Essays Quizzes Critique using project specific rubric
5	develop an understanding of mobile input, mobile game design, tiled systems, physics, artificial intelligence (AI).	Essays Quizzes Critique using project specific rubric
6	employ fundamental computer programming concepts used within game development.	Essays Quizzes Critique using project specific rubric
7	create working game prototypes using current industry standard hardware and software development tools.	Essays Quizzes Critique using project specific rubric

8	apply contemporary techniques to deploy computer game-oriented apps to a software publishing marketplace.	Essays Quizzes Critique using project specific rubric
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III. COURSE CONTENT

Estimated %	Topic	Learning Outcomes
Lecture (must total 100%)		
10.00%	Computer Programming Review and Basics	1, 2, 3, 4, 5, 6, 7, 8
5.00%	Mobile and VR Game Input Basic touch and multi-touch gestures Accelerometer Virtual D-pads	1, 2, 3, 4, 5, 7
10.00%	Math and Physics Vector math Physics principles Collision detection	4, 6, 7
10.00%	Publishing Packaging apps Deploying to software publishing marketplaces Success vs. failure in mobile app development Future of mobile games	1, 2, 4, 7, 8
10.00%	Advanced 2D/3D Graphics Texture atlases Animation Scrolling	1, 2, 4, 5, 6, 7
10.00%	Designing for Mobile and VR Usability Mobile game interfaces VR game interfaces Casual game design	1, 2, 3, 4, 7
10.00%	Artificial Intelligence AI behavior Pathfinding	1, 2, 3, 4, 5, 6, 7
10.00%	Advanced Graphics and Audio Effects Particle systems	1, 2, 3, 4, 5, 6, 7

	Audio effects	
5.00%	Social Game Concepts Multiplayer principles Push notifications Monetization Promotion	1, 2, 3, 4, 5, 6, 7
5.00%	Augmented Reality Concepts AR case studies Design principles	1, 2, 5
5.00%	Virtual Reality Concepts VR case studies Design principles	1, 2, 3, 4, 5, 6, 7
5.00%	Project Management Project management methodologies Scheduling Tracking	2, 7
5.00%	Revision Control	1, 4, 6
Lab (must total 100%)		
20.00%	Integrating computer programming and game design concepts	1, 2, 3, 4, 5, 6, 7, 8
30.00%	Hands-on use of video game production software	1, 2, 3, 4, 5, 6, 7, 8
20.00%	Exercises related to course content	1, 2, 3, 4, 5, 6, 7, 8
20.00%	Critiques related to projects	1, 2, 3, 4, 5, 6, 7, 8
10.00%	Exploring mobile and VR app Application Programming Interface (API) implementations	1, 4, 5, 7

IV. TYPICAL ASSIGNMENTS

A. Writing assignments

Writing assignments are required. Possible assignments may include, but are not limited to:	
1	post-mortems that will accompany game prototyping projects.
2	essays addressing mobile game design, including societal and cultural concerns, and theory.
3	game design briefs.

B. Appropriate outside assignments

Appropriate outside assignments are required. Possible assignments may include, but are not limited to:	
1	complete exercises in game production and design.
2	research of current mobile game design trends.
3	write evaluations of optional field trips.
4	produce at least one project towards a portfolio during the course of the semester.

C. Critical thinking assignments

Critical thinking assignments are required. Possible assignments may include, but are not limited to:	
1	create gameplay critiques.
2	answer crucial questions pertaining to VR, AR, and mobile game design trends.
3	analyze student work in the context of societal and cultural concerns.

V. METHODS OF INSTRUCTION

Methods of instruction may include, but are not limited to:

- Distance Education – When any portion of class contact hours is replaced by distance education delivery mode (Complete DE Addendum, Section XV)
- Lecture/Discussion
- Laboratory/Activity
- Other (Specify) Course content
Group work
One-on-one instruction
Handouts and written tutorials
Step-by-step project guidelines
- Optional Field Trips
- Required Field Trips

VI. METHODS OF EVALUATION

Methods of evaluation may include, but are not limited to:

- | | | |
|--|---|---|
| <input checked="" type="checkbox"/> Essay Exam | <input checked="" type="checkbox"/> Classroom Discussion | <input checked="" type="checkbox"/> Skill Demonstration |
| <input checked="" type="checkbox"/> Problem Solving Exam | <input checked="" type="checkbox"/> Reports/Papers/Journals | <input checked="" type="checkbox"/> Participation |
| <input checked="" type="checkbox"/> Objective Exams | <input checked="" type="checkbox"/> Projects | <input checked="" type="checkbox"/> Other (specify) |

[Detailed project guidelines](#)
[Game Design Program rubric](#)

VII. REPRESENTATIVE TEXTS AND OTHER COURSE MATERIALS

de Byl, Penny. Holistic Mobile Game Development with Unity. Focal, 2014.

Tristem, Ben, and Mike Geig. Unity Game Development in 24 Hours. 2nd ed. Sams, 2015.

Farman, Jason. Mobile Interface Theory: Embodied Space and Locative Media. Routledge, 2011.

Finnegan, Thomas. Learning Unity Android Game Development. Packt Publishing, 2015.

Manning, Jon, and Paris Buttfield-Addison. Mobile Game Development with Unity: Build Once, Deploy Anywhere. O'Reilly Media, 2017.

Parisi, Tony. Learning Virtual Reality: Developing Immersive Experiences and Applications for Desktop, Web, and Mobile. O'Reilly Media, 2015.

Thakur, Ankita. Learning Path: Unity: Virtual Reality Development with Unity 5. Packt Publishing, 2017.

Lanham, Michael. Augmented Reality Game Development. Packt Publishing, 2017.

Linowes, Jonathan. Unity Virtual Reality Projects. Packt Publishing, 2015.

Cogut, Valera. Unity 5 for Android Essentials. Packt Publishing, 2015.

Unity. Unity, current ed.
<https://store.unity.com>

Android Studio. Google, current ed.
<https://developer.android.com>

VIII. STUDENT MATERIALS FEES

No Yes

IX. PARALLEL COURSES

<i>College</i>	<i>Course Number</i>	<i>Course Title</i>	<i>Units</i>
Santa Monica College	ET 17	Advanced 3D Level Design	3
Santa Barbara CC	MAT 168	Serious Game Prototyping	3
Norco College	GAM 35	Introduction to Simulation and Game Development	3

X. MINIMUM QUALIFICATIONS

Courses in Disciplines in which Masters Degrees are not expected:
 Any bachelor's degree and two years of experience in game design, or any associate degree and six years of experience in game design.

XI. ARTICULATION INFORMATION

A. Title V Course Classification:

1. This course is designed to be taken either:

- Pass/No Pass only (no letter grade possible); or
 Letter grade (P/NP possible at student option)

2. Degree status:

Either Associate Degree Applicable; or Non-associate Degree Applicable

B. Moorpark College General Education:

1. Do you recommend this course for inclusion on the Associate Degree General Education list?

Yes: No: If YES, what section(s)?

- A1 - Natural Sciences - Biological Science
 A2 - Natural Sciences - Physical Science
 B1 - Social and Behavioral Sciences - American History/Institutions
 B2 - Social and Behavioral Sciences - Other Social Behavioral Science
 C1 - Humanities - Fine or Performing Arts
 C2 - Humanities - Other Humanities
 D1 - Language and Rationality - English Composition
 D2 - Language and Rationality - Communication and Analytical Thinking
 E1 - Health/Physical Education
 E2 - PE or Dance
 F - Ethnic/Gender Studies

C. California State University(CSU) Articulation:

1. Do you recommend this course for transfer credit to CSU? Yes: No:

2. If YES do you recommend this course for inclusion on the CSU General Education list?

Yes: No: If YES, which area(s)?

- A1 A2 A3 B1 B2 B3 B4
 C1 C2 D1 D2 D3 D4 D5

 D6 D7 D8 D9 D10 E

D. University of California (UC) Articulation:

1. Do you recommend this course for transfer to the UC? Yes: No:

2. If YES do you recommend this course for the Intersegmental General Education Transfer Curriculum (IGETC)? Yes: No:

IGETC Area 1: English Communication

- English Composition
- Critical Thinking-English Composition
- Oral Communication

IGETC Area 2: Mathematical Concepts and Quantitative Reasoning

- Mathematical Concepts

IGETC Area 3: Arts and Humanities

- Arts
- Humanities

IGETC Area 4: Social and Behavioral Sciences

- Anthropology and Archaeology
- Economics
- Ethnic Studies
- Gender Studies
- Geography
- History
- Interdisciplinary, Social & Behavioral Sciences
- Political Science, Government & Legal Institutions
- Psychology
- Sociology & Criminology

IGETC Area 5: Physical and Biological Sciences (mark all that apply)

- Physical Science Lab or Physical Science Lab only (non-sequence)
- Physical Science Lecture only (non-sequence)
- Biological Science
- Physical Science Courses
- Physical Science Lab or Biological Science Lab Only (non-sequence)
- Biological Science Courses
- Biological Science Lab course
- First Science course in a Special sequence
- Second Science course in a Special Sequence
- Laboratory Activity
- Physical Sciences

IGETC Area 6: Language other than English

- Languages other than English (UC Requirement Only)
- U.S. History, Constitution, and American Ideals (CSU Requirement ONLY)
- U.S. History, Constitution, and American Ideals (CSU

Requirement ONLY)

XII. REVIEW OF LIBRARY RESOURCES

- A. What planned assignment(s) will require library resources and use?

The following assignments require library resources:

Research, using the Library's print and online resources, on such topics as current video games industry trends, techniques, and best practices.

- B. Are the currently held library resources sufficient to support the course assignment?

YES: NO:

If NO, please list additional library resources needed to support this course.

XIII. PREREQUISITE AND/OR COREQUISITE JUSTIFICATION

Requisite Justification for GAME M102

- A. Sequential course within a discipline.
1. demonstrate the concept of game "flow" and how to design levels to keep the user in a game flow state.
 2. apply terrain, environment and lighting effects to add interest and challenges to level design.
 3. analyze and apply the principles of theoretically sound game level design including placing challenges, moving objects, game balancing.
 4. examine, discuss and apply genre specific strategies to level design.
 5. apply scripting tools to level design.
 6. develop analytical skills which can be applied to the multiple uses of both computer hardware and software products for simulation gaming.
 7. identify and critically discuss the basics of game level design.
 8. examine and illustrate various aspects that make a game fun and compelling.
- B. Standard Prerequisite or Corequisite required by universities.
- C. Corequisite is linked to companion lecture course.
- D. Prerequisite or Corequisite is authorized by legal statute or regulation.
Code Section: _____
- E. Prerequisite or Corequisite is necessary to protect the students' health and safety.

F. Computation or communication skill is needed.

G. Performance courses: Audition, portfolio, tryouts, etc. needed.

XIV. WORKPLACE PREPARATION

Required for career technical courses only. A career technical course/program is one with the primary goal to prepare students for employment immediately upon course/program completion, and/or upgrading employment skills.

Detail how the course meets the Secretary of Labors Commission on the Achievement of Necessary Skills (SCANS) areas. (For a description of the competencies and skills with a listing of what students should be able to do, go to:

<http://www.ncrel.org/sdrs/areas/issues/methods/assment/as7scans.htm>)

The course will address the SCANS competency areas:

1. Resources: the students will learn to set goals and time manage those goals to completion; learn what is required in game design so that they can plan to allocate resources.
2. Interpersonal: the students will instruct each other about those areas in which they are proficient and assess each other's skills in order to collaborate.
3. Information: the students will organize, interpret and communicate information acquired about game design technologies.
4. Systems: the students will understand the systems, and monitor and correct performance.
5. Technology: the students will choose visual technologies and perform proper procedures in the game design process.

The course also addresses the SCANS skills and personal qualities:

1. Basic Skills: the students will read and write documents, read textbooks, and listen and speak clearly.
2. Thinking Skills: the students will generate creative ideas, make decisions, and reason through and solve problems.
3. Personal Qualities: the students will be responsible, sociable, self-disciplined, honest, and maintain integrity.

XV. DISTANCE LEARNING COURSE OUTLINE ADDENDUM

1. Mode of Delivery

Online (course will be delivered 100% online)

Online with onsite examinations (100% of the instruction will occur online, but examinations and an orientation will be scheduled onsite)

Online/Hybrid (a percentage of instruction will be held online and the remaining percentage of instruction will be held onsite)

Lab activities will be conducted onsite

Televideo (Examinations and an orientation will be held onsite)

Teleconference

Other

2. Need/Justification

Improve general student access.

3. Describe how instructors teaching this course will ensure regular, effective contact with and among students.

The instructor will communicate with students through the course management system, using both synchronous tools (such as chat) and asynchronous tools (such as email and discussions).

Email is a tool primarily used for course-wide updates and individual student contact. Students and the instructor can privately contact each other with questions, concerns, etc. Discussion Forums will be used to disseminate course-wide information and facilitate ongoing collaborative course work. Students may also use the Discussion Forums to solicit help from the instructor and other students. Discussions may also be graded encouraging students to participate in the class. The Calendar and Announcement tools will be used to keep students informed of important events, deadlines, etc. Additional collaborative learning involves using software that allows students and the instructor to collaborate in real-time. These sessions may also be recorded and archived so that students who were not able to participate can also benefit from them. The instructor may talk with individual students or with student groups. Students may also collaborate with each other without the instructor.

4. Describe how instructors teaching this course will involve students in active learning.

All course materials will be available online. Students will be able to download files and view them offline. Instructor may also provide course content within the course management system as well as provide links to supplemental publications, articles, and websites.

Quizzes may be issued (using a course-specific timeline) in which students will be tested on their knowledge of the material. Assignments may include exercises through which students explore course concepts using a textbook and/or additional research. Students can submit their assignments online and get feedback from the instructor and/or other students as determined per assignment. This can be an iterative process in that students can receive feedback and then be able to improve their submittal if necessary. Email is a tool primarily used for course-wide updates and individual student contact. Students and the instructor can privately contact each other with questions, concerns, etc. Discussion Forums will be used to disseminate course-wide information and facilitate ongoing collaborative course work. Students may also use the Discussion Forums to solicit help from the instructor and other students. Discussions may also be graded encouraging students to participate in the class. Additional collaborative learning involves using software that allows students and the instructor to collaborate in real-time. These sessions may also be recorded

and archived so that students who were not able to participate can also benefit from them. The instructor may talk with individual students or with student groups. Students may also collaborate with each other without the instructor.

5. Explain how instructors teaching this course will provide multiple methods of content representation.

The instructor can provide text, presentation slides, audio/visual material, assignment examples, tutorials (which may be live or recorded), and links to supplemental publications, articles, and websites.

6. Describe how instructors teaching this course will evaluate student performance.

Student evaluation will occur via standard techniques such as exercises, projects, quizzes, and a program rubric. The online environment will allow the exercises and projects to be iterative so that students may submit their work online and receive feedback from the instructor. The instructor can then communicate critique and/or solutions to students by posting them online. Additionally, graded discussions can be used to provide additional means of assessment.

XVI. GENERAL EDUCATION COURSE OUTLINE ADDENDUM

GAME M202: Not Applicable

XVII. STUDENT MATERIALS FEE ADDENDUM

GAME M202: Not Applicable

XVIII. REPEATABILITY JUSTIFICATION TITLE 5, SECTION 55041

GAME M202: Not Applicable

XIX. CURRICULUM APPROVAL

Course Information:

Discipline: GAME DESIGN

Discipline Code and Number: GAME M202

Course Revision Category: Substantial Course Revision

Course Proposed By:

Originating Faculty Tim Samoff 08/22/2017

Faculty Peer: Candice Larson 08/23/2017

Curriculum Rep: Tim Samoff 09/13/2017

Department Chair: Rolland Petrello 09/05/2017

Division Dean: Jennifer Goetz 09/05/2017

Approved By:

Curriculum Chair: Jerry Mansfield 11/10/2017

Executive Vice President: Julius Sokenu 10/15/2017

Articulation Officer: Letrisha Mai 10/05/2017

Librarian: Mary LaBarge 10/02/2017

Implementation Term and Year: Fall 2018

Approval Dates:

Approved by Moorpark College Curriculum Committee: 10/17/2017

Approved by Board of Trustees (if applicable): _____

Approved by State (if applicable): 01/09/2018