EDTECH 536 – Digital Game Design for K-12 Classrooms

3 Credit Online Course

Instructor Information

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Availability: By appointment, open to email (youngkyunbaek@boisestate.edu) or Skype (youngkbaek) etc.

Website: http://edtech.boisestate.edu/

Course Description

In this course, students will learn to design and develop educational games for K-12 classrooms using a software that students select. Students will gain an in-depth understanding of game-based learning and acquire programming skills using the selected software. By creating guides for the selected software, students will be able to design their own short and simple game for players to play and learn. The steps for designing an educational game will provide novice students with a valuable programming experience for future design and applications of educational games for teaching and learning. The options for software selection include Minecraft, GameSalad, and Corona SDK. But the course materials will be focused on Minecraft.

PREREQ: None

Course Outcomes

Students read course-related articles and the textbook to get a basic understanding of game creation in view of teaching and learning. At the end of this course, students will own and manage a basic game for teaching and learning. In this course, students will:

- Install the selected software for developing games on either Mac OSX or Windows operating systems;
- Acquire the basics of the software selected;
- Understand functions of educational games;
- Understand game mechanics, elements, and structures of educational games;
- Create a design sheet for your target game;
- Create sub-components of educational games;
- Integrate sub-components into your target game and
- Create a video of the developed game play.

Course Location and Login Information

This is an online course delivered in Moodle (http://edtech.mrooms.org/). Moodle login page explains how to login to Moodle. Contact Moodle Support at moodlesupport@boisestate.edu if you have problems accessing Moodle. If you have forgotten your password, click the link below the login box, "lost password?" and you will be able to reset it.

Course Materials

Books: (1) Whitton, N. (2014). Digital Games and Learning: Research and Theory. New York, NY: Routledge, (2) Zichermann, G. & Cunningham, C. (2011). Gamification by Design. Oreilly Media, Inc, CA.
One from (1) O'Brien, Stephen (2016). The Ultimate Player's Guide to Minecraft (3rd edition), Que Publishing. (recommended, not required), (2) Novak, J. (2014). The official GameSalad guide to Game Development. Delmar, Cengage Learning, Clifton Park, NY., or (3) Burton, B. G. (2011). Beginning Mobile App Development with Corona, Burtons Media Group. Abilene, Texas.

Resources: (1) http://minecraft.gamepedia.com/Minecraft_Wiki (2) http://www.gamesalad.com/ (3) https://coronalabs.com/

Software: One from Minecraft, GameSalad, or Corona DSK. Mac OSX or Windows, Camtasia or equivalents.

Internet Connectivity

You need an up-to-date computer with an Internet connection in this course.

Course Assignments and Final Project

Students are expected to spend 9-12 hours each week. Detailed information about each assignment is posted in Moodle. Check Moodle and your Boise State email regularly each week; announcements and course updates can be posted at any time.

The assignments in the course are:

- Summaries and reflections on theories & games (3)
- Analysis of games written in your selected software (1)
- Design sheet of the final project game (1)
- Sub-components of games written in your selected software (3)
- The final project is to develop a game in group, synthesized and integrated with small sub-components and outcomes of programming practices during the course. The final project should be based on the design sheet and created in the student selected software. More detailed instructions will be delivered in the class. (1)
- A video clip showing the gameplay of the student users (1)

Week	Assignments: Check Moodle for Details	Points	Due Date

1	- Introduce Yourself - Assignment 1: Reflection on articles about Minecraft (Individual)	10 30	Aug 24 Aug 27
3	- Assignment 2: Analysis of two selected Worlds from Minecraft templates (Individual)	30	Sep 10
4	- Assignment 3: Reflection on game modes (Individual)	30	Sep 17
5	- Assignment 4: Creation of objects in Minecraft, Placement of Common In-Game Tasks (Individual)	50	Sep 24
6	- Assignment 5: Create your game design sheet (Individual)	50	Oct 1
7	- Assignment 6: Complete group game sheet (Group)	100	Oct 8
8-10	- Assignment 7: Complete group game structure in Minecraft (Group)	100	Oct 29
11-13	- Assignment 8: Review other groups' game (Individual)	50	Nov 19
15	- Assignment 9: Submit your group game (Group) - Assignment 10: Submit your group's reaction (Group)	150 50	Dec 3 Dec 3
16	- Assignment 11: Create video for gameplay (Individual)	50	Dec 8
	Total	700	

AECT Standards

Course assignments are aligned to the Association for Educational Communications and Technology (AECT) Standards, 2012 version.

Assignments are listed by number (based on the assignments list above) in the following table under the standards they are aligned to.

	Standard 1 Content Knowledge	Standard 2 Content Pedagogy	Standard 3 Learning Environments	Standard 4 Professional Knowledge & Skills	Standard 5 Research
Creating	1	14		4,5,6	
Using	11,12,13,15			4,5,6,8,9,10,11	
Assessing/ Evaluating		7,11	2		

Managing	12	11	2,3	4,5,6,8,9,10,11	
Ethics					
Diversity of Learners					
Collaborative Practice					
Leadership					
Reflection on Practice			2,3		
Theoretical Foundations	1			15	
Method					

Grade Scale

Final grades are based on the following scale.

Grade	Points Required
A+	97% ~ 100%
A	93% ~ 96%
A-	90% ~ 92%
B+	87% ~ 89%
B	83% ~ 86%
B-	80% ~ 82%
C+	77% ~ 79%
C	73% ~ 76%
C-	70% ~72%
D+	67% ~ 66%
D	63% ~ 66%

D-	60% ~ 62%
F	69% and below

Grading Cycle

For each assignment, a rubric will be provided. Based on the rubric, the feedback will be given by the week after each assignment's due date.

Technical Difficulties

On occasion, you may experience problems accessing Moodle or class files located within Moodle, Internet service connection problems, and/or other computer related problems. Make the instructor aware if a technical problem prevents you from completing coursework. If a problem occurs on our end, such as Moodle or EDTECH2 server failure, then an automatic due date extension is granted.

Reasonable Accommodations

Students with disabilities needing accommodations to fully participate in this class should contact the Educational Access Center (EAC). All accommodations must be approved through the EAC prior to being implemented. To learn more about the accommodation process, visit the EAC's website at https://eac.boisestate.edu/new-eac-students/

Privacy Information

EDTECH courses involves online delivery and for some courses public display of assignments on websites or social media spaces. In the online course, your name, email address, and Moodle profile may be visible to others who have logged into Moodle. You are advised to familiarize yourself with privacy settings on Moodle or social media sites associated with the course. Privacy settings can sometimes be adjusted to restrict certain types of information. Please contact your instructor if you have questions or concerns.

Academic Honesty

Students are expected to create original work for each assignment. Students must follow the Boise State Student Code of Conduct as well as observe U.S. copyright laws in this course.

In the event of academic dishonesty, a complaint is filed with the Boise State Student Conduct Office with supporting documentation. This complaint remains on file and actions may be taken against the student (e.g., loss or credit, grade reduction, expulsion, etc.).

Note: Instructors may append additional course-specific policies as needed.

Policy for Incompletes

Incompletes are not guaranteed. However, when they are given incompletes adhere to Boise State University guidelines as follows:

Instructors can enter a grade of I—for incomplete—if both of the following conditions are present:

- Your work has been satisfactory up to the last three weeks of the semester.
- Extenuating circumstances make it impossible for you to complete the course before the end of the semester.

In order to receive an incomplete, you and your instructor must agree to a contract stipulating the work you must do and the time in which it must be completed for you to receive a grade in the class. The terms of this contract are viewable on myBoiseState under your Student Center To Do List. The contract time varies as set by the instructor but may not exceed one year. If no grade other than incomplete has been assigned one year after the original incomplete, the grade of F will automatically be assigned. The grade of F may not be changed without approval of the University Academic Appeals Committee. As long as you have an incomplete in a class, you may not re-enroll in the class during another semester. A grade of incomplete is excluded from GPA calculations until you receive a final grade in the course. You cannot graduate with a grade of I(incomplete) on your record.

Course Schedule

Please note that students are expected to spend 9-12 hours *each* week on *each* EDTECH course during a regular academic session.

The instructor reserves the right to make changes to the schedule as needed.

Week	Start Date	Due Date	Major Activities: Check Moodle for Details
Module 1: Getting Started			
1	Aug 21	Aug 27	• Read the course syllabus • Get an overview of the course • Introduce yourself • Install M:EE (Minecraft: Education Edition) and Create ID • Learning the interface of M:EE • Read articles on M:EE and student achievements (Assign. 1)
2	Aug 28	Sep 03	• Play with the Tutorial Volume II
Module 2: Understanding Game Structure by Exploring M:EE (Modes & Crafting)			
3	Sep 04	Sep 10	• Play with two worlds from M:EE templates • Analyze the two Worlds (Assign. 2)

4	Sep 11	Sep 17	• Play Minecraft different Modes (Survival &Creative) • Reflect on different game modes (Assign. 3) • Summarize and reflect on game mechanics and elements
5	Sep 18	Sep 24	• Create your crafts • Create objects for use in classrooms (Assign. 4)
Module 3: Structuring Gaming Environment based on Learning Theories			
6	Sep 25	Oct 01	• Create your game design sheet (Assign. 5) • Read learning theories (collaboration, cooperation, and competition)
7	Oct 02	Oct 08	• Read learning theories provided • Create your group (Maximum 4 members) • Review your group member's game design sheets • Choose a game sheet for your group • Revise the selected game design sheet (Assign. 6)
8	Oct 09	Oct 15	• Read and reflect on engagement theories • Create your group's game structure in M:EE
9	Oct 16	Oct 22	• Read and reflect on motivation theories • Place the objects into the gaming environment
10	Oct 23	Oct 29	• Complete gaming environment/structure (Assign. 7) • Review gaming environment/structure of other groups'
Module 4: Completing your educational game			
11	Oct 30	Nov 05	• Create at least 4 minigames in the gaming environment • Integrate learning in gaming environment & minigames
12	Nov 06	Nov 11	• Continue group work on integrating learning with gaming • Begin review of 4 other groups' game (Individually)
13	Nov 13	Nov 19	• Complete review of 4 other groups' game. (Assign. 8) (Individually) • Beta test of the game & implementation • Polish your group game
14	Nov 20	Nov 26	Thanksgiving Holiday
15	Nov 27	Dec 03	• Submit your group game (Assign. 9_Final project) • Post your reaction to peer & instructor's reviews of your game (Assign. 10)
16	Dec 04	Dec 08	• Create video for your gameplay (Assign.11)

Boise State University Academic Calendar

Please refer to the Boise State University Academic Calendar for University dates and deadlines: http://registrar.boisestate.edu/academic-calendar.shtml

Graduate Catalog

Graduate Catalogs for present and prior academic years can be found online at: http://graduatecatalog.boisestate.edu/

College of Education - The Professional Educator

Boise State University strives to develop knowledgeable educators who integrate complex roles and dispositions in the service of diverse communities of learners. Believing that all children, adolescents, and adults can learn, educators dedicate themselves to supporting that learning. Using effective approaches that promote high levels of student achievement, educators create environments that prepare learners to be citizens who contribute to a complex world. Educators serve learners as reflective practitioners, scholars and artists, problem solvers, and partners.

Department of Educational Technology Mission

The Department of Educational Technology is a diverse and international network of scholars, professional educators and candidates who:

- Lead research and innovations in online teaching and learning
- Model, promote, manage, and evaluate digital-age work and learning resources in educational environments
- Inspire creativity and expertise in digital media literacies
- Design and develop imaginative learning environments
- Empower learners to be evolving digital citizens who advocate cultural understanding and global responsibility
- Promote and pattern participatory culture, professional practice, and lifelong learning
- Forge connections between research, policy, and practice in educational technology