

# EDTECH 565 – Advanced Educational Game Design

3 Credit Online Course

## Instructor Information

Name: Youngkyun Baek

Contact Information: 426-1023

Office Hours: Mon, Wed, Thu 10:00 – 14:00

Availability: By appointment, open to email or Skype etc.

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

## Course Description

Digital games are fast becoming an integral part of professional education and training in education, medicine, business, and entertainment. Programming with a focus specifically on learning meets the demands and interests of many students in the educational technology field. In this course, focus is placed on developing digital games as opportunities for learning inside or outside of classroom environments. Students develop an advanced, fully playable and finished game for K-12 or training implementations, based on the knowledge and skills acquired in EDTECH 536 Digital Game Design for K-12 Classrooms.

PREREQ: EDTECH 531, EDTECH 536 or Instructor's consent.

## 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 their games (villages) for teaching and learning in their subject area. In this course, students will:

- Design & Create a game-based environment for computational thinking exercises
- Create a design sheet for your game;
- Create your game in multiplayer mode;
- Implement your developed game for your students;
- Create a video of the game play.

## Course Location and Login Information

This is an online course delivered in Moodle (<http://edtech.mrooms.org/>). The Moodle login page explains how to login to Moodle. Contact Moodle Support at [moodlesupport@boisestate.edu](mailto: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) Curzon, P. & McOwan, P. W. (2017). The power of computational thinking: Games, magic and puzzles to help you become a computational thinker, World Scientific Publishing Europe Ltd., London. (2) Richardson, Craig (2015). Learn to program with Minecraft, No Starch Press, Inc. CA. (3) O'Brien, Stephen (2016). The Advanced Strategy Guide to Minecraft (2<sup>nd</sup> edition), Que Publishing. (recommended, not required).

Resources: (1) <http://education.minecraft.net> (2) [http://minecraft.gamepedia.com/Minecraft\\_Wiki](http://minecraft.gamepedia.com/Minecraft_Wiki) (3) <http://www.minecraftguides.org/mini-games/> (4) <http://www.minecraftforum.net> (5) [http://services.minecraftedu.com/wiki/Main\\_Page](http://services.minecraftedu.com/wiki/Main_Page)

Software: A tool of student's choice, including Minecraft, Scratch, Corona DSK, and GameSalad, 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 major assignments in the course are:

- Summaries and reflections on theories (2)
- Analysis of games written in your selected software (1)
- Task analysis of the chosen topic (1)
- Project 1 is to write a design sheet of the final project game (1)
- Programming assignments: basic interface and interactions (2)
- Project 2 is to develop interactions using the selected software (1)
- The final project 3 is to develop an advanced big game in group, integrated with programmed components during the course. The final project should be based on the selected design sheet by group members and created in their selected software. More detailed instruction will be delivered in the class.
- 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 your software (tool) related to students' achievements	10 30	Jan 11 Jan 14
2	- Assignment 2: Analysis of two games / Analysis of learning in the two games (Objective: to get an idea for task analysis and understand learning through games)	30	Jan 21

3	- Assignment 3: Assignment 3: Task analysis of your topic selected and sketch of your final game	70	Jan 28
4	- Assignment 4: Reflection on computation thinking in your subject	70	Feb 4
5	- Assignment 5: Connecting your analyzed tasks to computational thinking	70	Feb 11
6	- Project 1 (Assignment 6): Creating a design sheet for your target game (a village in Minecraft of an adventure game) integrated with learning tasks and computational thinking	70	Feb 18
7	- Assignment 7: Analyze interactions, sketch the structure of the adventure, and map it into your target game	60	Feb 25
8	- Assignment 8: Programming basic interface (1)	60	Mar 4
9	- Assignment 9: Programming navigation & interactions (2)	60	Mar 11
10	- Project 2 (Assignment 10): Completion of proposed interactions into the target game	60	Mar 18
11	- Assignment 11: Completion of learning materials integration into the game - Assignment 12: Review of two peers' games	60 40	Mar 25 Mar 25
12	Spring Break		
13	- Assignment 13: Beta test of the game	60	Apr 8
14	- Assignment 14 (Final project): Polishing and implementation the game	200	Apr 29
16	-Assignment 15: Submission of the final project with video recording of the gameplay	50	May 6
	Total	1000	

## **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			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	13		13	6,7,8,9,10,11, 12,13,14,15	
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% (970 ~ 1000)
A	93% ~ 96% (930 ~ 969)
A-	90% ~ 92% (900 ~ 929)
B+	87% ~ 89% (870 ~ 899)

B	83% ~ 86% (830 ~ 869)
B-	80% ~ 82% (800 ~ 829)
C+	77% ~ 79% (770 ~ 799)
C	73% ~ 76% (730 ~ 769)
C-	70% ~ 72% (700 ~ 729)
D+	67% ~ 66% (670 ~ 699)
D	63% ~ 66% (630 ~ 669)
D-	60% ~ 62% (600 ~ 629)
F	599 and below

## Grading Cycle

For each assignment, a rubric will be provided. Based on the rubric, 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	Jan 8	Jan 14	<ul style="list-style-type: none"><li>• Read the course syllabus</li><li>• Get an overview of the course</li></ul>

			<ul style="list-style-type: none"> <li>• Introduce yourself</li> <li>• Install your software</li> <li>• Read 3 articles about your software related to teaching and learning (Assignment 1)</li> </ul>
2	Jan 15	Jan 21	<ul style="list-style-type: none"> <li>• Play with two games</li> <li>• Define computational thinking based on the readings</li> <li>• Analyze tasks &amp; learning and reflect on the two worlds (Assignment 2)</li> </ul>
Module 2 Task analysis connected with computational thinking			
3	Jan 22	Jan 28	<ul style="list-style-type: none"> <li>• Perform tasks analysis in your selected topic (Assignment 3)</li> <li>• Reading on computational thinking and games</li> <li>• Sketch your target game</li> <li>• Start your game programming</li> </ul>
4	Jan 29	Feb 4	<ul style="list-style-type: none"> <li>• Summary and Reflection on computational thinking (Assignment 4)</li> <li>• Integrate magic, algorithms, &amp; computational thinking into your target game</li> <li>• Create objects using your software</li> </ul>
5	Feb 5	Feb 11	<ul style="list-style-type: none"> <li>• Connecting analyzed tasks to computational thinking (Assignment 5)</li> <li>• Integrate puzzles, logic, patterns, &amp; puzzling tours into your target game</li> <li>• Create structure and flow of adventure using your software</li> </ul>
Module 3 Designing & building your own adventure in groups			
6	Feb 12	Feb 18	<ul style="list-style-type: none"> <li>• Form a group of three peers</li> <li>• Apply instructional design model (ADDIE) to your game design process</li> <li>• Project 1: Create your design sheet for a village in Minecraft of an adventure game with learning tasks and computational thinking (Assignment 6)</li> </ul>
7	Feb 19	Feb 25	<ul style="list-style-type: none"> <li>• Create interactions using your software</li> <li>• Sketch &amp; substructure your world of adventure (Assignment 7)</li> </ul>
8	Feb 26	Mar 4	<ul style="list-style-type: none"> <li>• Programming basic interface using your software (Assignment 8)</li> </ul>
9	Mar 5	Mar 11	<ul style="list-style-type: none"> <li>• Programming navigation and interactions (Assignment 9)</li> </ul>

10	Mar 12	Mar 18	<ul style="list-style-type: none"> <li>• Project 2: Completion of proposed interactions into the target game (Assignment 10)</li> </ul>
11	Mar 19	Mar 25	<ul style="list-style-type: none"> <li>• Completion of learning materials integration into the game (Assignment 11)</li> <li>• Review your two other groups' worlds (Assignment 12)</li> </ul>
12	Mar 26	Apr 1	<ul style="list-style-type: none"> <li>• Spring Break</li> </ul>
13	Apr 2	Apr 8	<ul style="list-style-type: none"> <li>• Revision of the game (Assignment 13)</li> </ul>
14	Apr 9	Apr 15	<ul style="list-style-type: none"> <li>• Final project (3): Completion of the game (Assignment 14)</li> <li>• Peer review of the game</li> </ul>
Module 4 Implementing your game of adventure			
15	Apr 16	Apr 29	<ul style="list-style-type: none"> <li>• Polishing and implement your final game with your students</li> </ul>
16	Apr 30	May 6	<ul style="list-style-type: none"> <li>• Submission and creation of video for gameplay (Assignment 15)</li> </ul>

## 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