

NEWM N434 - NEWM N534

Serious Games

Department of Human-Centered Computing
Indiana University School of Informatics and Computing,
Indianapolis Spring or Summer XXXX

Section No.: Credit Hours: 3
Time: Web-class – online using Zoom
Location: Online
First Class:
Website: <https://iu.instructure.com/courses/2071917>
Instructor: Prof. Joseph Defazio, Ph.D.
Office Hours: by Appointment
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Course Description:

Serious games and simulations have found their niche' in education, healthcare, health education and the military. This course examines several aspects and comparisons of the use of serious games including simulations and virtual worlds in multiple domains. This course explores the work of notable authors and serious game and simulation developers. In this course, students will analyze, design, and develop a mini serious game or simulation.

Extended Course Description:

We will adopt a reflective practice and creative process for this course. This course is intended to be a fast-paced, building a serious game or simulation from the ground-up focusing on interactive and integrated media design.

Class Structure – Topics

- Course Overview – Class Management, SOIC Resources
- Expectations
- Theories and Concepts in Serious Game Design and Development
- Creativity – Behavior and Motivation
- Game Staging and Management
- Game Production Assessment and Evaluation

Course Objectives:

- Demonstrate effective planning for a serious game or simulation
- Deconstruct an existing serious game or simulation
- Define specific metrics required to ensure an error-free serious game or simulation
- Develop a sound implementation strategy
- Produce a working serious game or simulation

Video Courses from LinkedIn.com/learning (Lynda.com):

The following video courses are a good supplement to the materials we will be studying in class. Based on your background and needs, please choose the courses and topics to watch. Please search the links to the courses at <https://www.linkedin.com/learning>.

JavaScript Essential Training:
<https://tinyurl.com/y56xcl5j>

Equipment Needed:

- A reliable laptop computer running Windows, Mac OS, or Linux operating system. Please visit <http://informatics.iupui.edu/technology/laptop> for information on the Laptop Initiative for MAS, HCI, or Informatics majors.
- Webcam for online class. (required) \$11.99

Software used:

- Unity 3d or any comparable game development application.
- Microsoft Word

Teaching and Learning Methods:

The course structure is composed of these parts:

Lectures / Lab:

- This activity will be the majority of class time. Use of software packages to implement concepts and designs are key to understanding the principles that are taught in the lecture.
 - Quizzes will be administered to assure you are grasping the concepts needed to complete the course and understand the learning outcomes for the class.
 - Projects:
 - Weekly homework assignments will be assigned, these could be individual assignments.
 - Students **MUST** have their work completed weekly for credit in this class.
 - Communication through Canvas is a requirement and peer to peer communication is key for success.
 - Student must have a working laptop or have access to a working computer.

IUPUI Principles of Undergraduate Learning:

The learning outcomes of this course are in alignment with the IUPUI principles of undergraduate learning:

- **Critical thinking:** This will be engaged through assignments that ask you to apply your understanding of the readings in new contexts, such as a wiki project, and through critical analysis exercises.
- **Integration and application of knowledge:** We will look at new media from a variety of contexts, and seek to understand how new media has developed in the integration of technology, culture and communication. We will then take that integrated understanding of new media and examine how it is applied by new media practitioners.

Learning Outcomes:

Upon completion of this course, the student will	*RBT	IUPUI+	PLO's	Assessment
<i>1. Understand pedagogy as it applies to serious game design.</i>	<i>1, 2</i>	<i>P1.1,</i>	<i>1, 5</i>	<i>Quiz</i>
<i>2. Demonstrate the serious game design process.</i>	<i>2, 3</i>	<i>P1.1, P1.2, P2.3</i>	<i>2, 4</i>	<i>Assignment</i>
<i>3. Deconstruct a published serious game.</i>	<i>4</i>	<i>P1.1, P2.1;</i>	<i>6, 7</i>	<i>Assignment</i>
<i>4. Develop a functional serious game</i>	<i>6</i>	<i>P1.1; P3.2, P3.3</i>	<i>6, 7, 10</i>	<i>Assignment</i>

*RBT: Revised Bloom's Taxonomy: 1. Remembering, 2. Understanding, 3. Applying, 4. Analyzing, 5. Evaluating, 6. Creating

<i>Media Arts and Science B.S. Program-level Learning Outcomes (PLOs)</i>	<i>†Profiles of Learning for Undergraduate Success (PLUS, IUPUI+)</i>
1. Understand digital media and its effective use as a form of communication.	P1.1 Communicator – Evaluates Information
2. Communicate ideas effectively in written, oral, and visual form to a range of audiences.	P1.4 Communicator – Conveys Ideas Effectively P1.2 Communicator – Listen Actively* P3.2 Innovator – Creates/Designs**

3. Work effectively as a member of a team to achieve a common goal.	P2.2 Problem Solver – Collaborates P1.3 Communicator – Builds Relationships*
4. Analyze a problem, identify and evaluate alternatives, and plan an appropriate solution.	P2.1 Problem Solver – Thinks Critically P3.1 Innovator – Investigates*
5. Evaluate media from multiple perspectives using the theories, concepts, and language of digital media with an appreciation for the history, theory, and traditions of digital media.	P2.3 Problem Solver – Analyzes, Synthesizes, and Evaluates
6. Demonstrate mastery of the concepts, techniques, and tools in one or more digital media specialties.	P2.4 Problem Solver – Perseveres P3.2 Innovator – Creates/Designs*
7. Develop professional quality digital media productions by promptly applying knowledge and skills including best practices and standards.	P3.2 Innovator – Creates/Designs P3.3 Innovator – Confronts Challenges*
8. Explain the impact of digital media on individuals, organizations, and society.	P4.4 Community Contributor – Anticipates Consequences P4.1 Community Contributor – Builds Community*
9. Acknowledge diverse opinions regarding professional, ethical, legal, and social issues with a global perspective.	P4.3 Community Contributor – Behaves Ethically P4.2 Community Contributor – Respectfully Engages Own and Other Cultures*
10. Plan for continuing professional development with an appreciation of the need for lifelong learning.	P3.4 Innovator – Makes Decisions

Grading Information:

- Requirements (homework/reading assignments, quizzes, final project and team project presentations and attendance)
Failure to complete any of these requirements could result in a failing grade.
- The solo serious game project grade will be based on quality, execution, production, peer review, and instructor evaluation.

Undergraduate Grading Scale

Assignment #1 – The Serious Game Design Process	100 points
Assignment #2 - Serious Game Deconstruction	100 points
Assignment #3: Serious Game	200 points
Quiz #1	50 points

Total Possible Points = 450 points
Grading scale [points]

450 – 420 = A, 419 - 375 = B, 374 – 330 = C, 329 – 290 = D, 289 – 0 = F

Graduate Grading Scale

Assignment #1 – The Serious Game Design Process	100 points
Assignment #2 - Serious Game Deconstruction	100 points
Assignment #3: Serious Game	200 points
Quiz #1	50 points
Assignment #4: Serious Game Annotated Bibliography	100 points

Total Possible Points = 550 points
Grading scale [points]

495 – 550 = A
 440 - 494 = B
 0 – 439 = F

Weekly Schedule:

The Weekly Schedule is available on Canvas and is subject to change. The instructor will notify students in the event changes are made.

Course Deliverables – Expectations/Guidelines/Policies:

- This class meets (1) time per week. You are expected to attend every class. Attendance is required. Failure to attend class could result in a reduction or failing grade. At each class session, an attendance roster will be passed around the class. Your initials are confirmation that you will receive credit for that day's attendance. (10 points if you attend, 0 points if you miss). At the end of the semester, your attendance score will be calculated and scored into your final grade for this course.
- Readings: There will be several reading assignments required as part of this class. Students will be expected to engage in class discussion on issues related to each chapter readings from the textbook and several articles selected for discussion. Articles will be posted in the Resource Section of Oncourse
- Quizzes: There is 1 Quiz scheduled for this course. The Quiz will cover content from the lectures and reading assignments.
- Assignments: Game design assignments are a critical part of this course. Game design includes, developing a story, creating storyboards, developing assets, flowcharts, setting goals, etc. Each student will complete assignments that will be used toward developing a serious game as a requirement for this course.
- Presentations – Each student will design, develop and present a series of presentations in the area of serious game design and development. Presentations will consist of solo and/or team based formats. Presentations will be graded on clarity, structure, grammar, spelling, and peer review.

Expectations, Guidelines, and Policies

Attendance: (TopHat)

A basic requirement of this course is that you will participate in all class meetings, whether online or face-to-face, and conscientiously complete all required course activities and assignments. Class attendance is required for classroom-based courses. It entails being present and attentive for the entire class period. Attendance shall be taken in every class. If you do not sign the attendance sheet while in class, you shall be marked absent. Signing the attendance sheet for another student is prohibited. The instructor is required to submit to the Registrar a record of student attendance, and action shall be taken if the record conveys a trend of absenteeism.

Only the following are acceptable excuses for absences: death in the immediate family (e.g., mother, father, spouse, child, or sibling), hospitalization or serious illness; jury duty; court ordered summons; religious holiday; university/school coordinated athletic or scholastic activities; an unanticipated event that would cause attendance to result in substantial hardship to one's self or immediate family. Absences must be explained with the submission of appropriate documentation to the satisfaction of the instructor, who will decide whether missed work may be made up. Absences that do not satisfy the above criteria are considered unexcused. To protect your privacy, doctor's excuses should exclude the nature of the condition and focus instead on how the condition impacts your attendance and academic performance.

Missing class reduces your grade through the following grade reduction policy: You are allowed two excused or unexcused absences. Each additional absence, unless excused, results in a 5% reduction in your final course grade. More than six absences result in an F in the course. Missing class may also reduce your grade by eliminating opportunities for class participation. For all absences, the student is responsible for all covered materials and

assignments.

Incomplete:

The instructor may assign an Incomplete (I) grade only if at least 75% of the required coursework has been completed at passing quality and holding you to previously established time limits would result in unjust hardship to you. All unfinished work must be completed by the date set by the instructor. Left unchanged, an Incomplete automatically becomes an F after one year. <http://registrar.iupui.edu/incomp.html>.

Deliverables:

You are responsible for completing each deliverable (e.g., assignment, quizzes) by its deadline and submitting it by the specified method. Deadlines are outlined in the syllabus or in supplementary documents accessible through Canvas. Should you miss a class, you are still responsible for completing the deliverable and for finding out what was covered in class, including any new or modified deliverable. In fairness to the instructor and students who completed their work on time, a grade on a deliverable that is submitted late shall be given the grade of a 0. No late submissions are accepted unless you have an excused absence which is outlined in the Attendance section or on a case-by-case basis.

NOTE: The outcomes and artifacts developed for any one class in the SoIC at IUPUI cannot be the same or overly similar between semesters or in the same semester for one student or group of students or one faculty or group of faculty. The project must be differentiated, the expectations for the project outlined, and the faculty involved, notified, and in agreement prior to the semester beginning.

CODE OF CONDUCT

All students should aspire to the highest standards of academic integrity. Using another student's work on an assignment, cheating on a test, not quoting or citing references correctly, or any other form of dishonesty or plagiarism shall result in a grade of zero on the item and possibly an F in the course. Incidences of academic misconduct shall be referred to the Department Chair and repeated violations shall result in dismissal from the program.

All students are responsible for reading, understanding, and applying the *Code of Student Rights, Responsibilities and Conduct* and in particular the section on academic misconduct. Refer to *The Code > Responsibilities > Academic Misconduct* at <http://www.indiana.edu/~code/>. All students must also successfully complete the Indiana University Department of Education "How to Recognize Plagiarism" Tutorial and Test. <https://www.indiana.edu/~istd> You must document the difference between your writing and that of others. Use quotation marks in addition to a citation, page number, and reference whenever writing someone else's words (e.g., following the *Publication Manual of the American Psychological Association*). To detect plagiarism instructors apply a range of methods, including Turnitin.com. <http://www.ulib.iupui.edu/libinfo/turnitin>

Academic Misconduct:

1. **Cheating:** ^[1]_{SEP} Cheating is considered to be an attempt to use or provide unauthorized assistance, materials, information, or study aids in any form and in any academic exercise or environment.
 - a. A student must not use external assistance on any "in-class" or "take-home" examination, unless the instructor specifically has authorized external assistance. This prohibition includes, but is not limited to, the use of tutors, books, notes,

calculators, computers, and wireless communication devices.

- b. A student must not use another person as a substitute in the taking of an examination or quiz, nor allow other persons to conduct research or to prepare work, without advanced authorization from the instructor to whom the work is being submitted.
 - c. A student must not use materials from a commercial term paper company, files of papers prepared by other persons, or submit documents found on the Internet.
 - d. A student must not collaborate with other persons on a particular project and submit a copy of a written report that is represented explicitly or implicitly as the student's individual work.
 - e. A student must not use any unauthorized assistance in a laboratory, at a computer terminal, or on fieldwork.
 - f. A student must not steal examinations or other course materials, including but not limited to, physical copies and photographic or electronic images.
 - g. A student must not submit substantial portions of the same academic work for credit or honors more than once without permission of the instructor or program to whom the work is being submitted.
 - h. A student must not, without authorization, alter a grade or score in any way, nor alter answers on a returned exam or assignment for credit.
2. **Fabrication:** A student must not falsify or invent any information or data in an academic exercise including, but not limited to, records or reports, laboratory results, and citation to the sources of information.
 3. **Plagiarism:** Plagiarism is defined as presenting someone else's work, including the work of other students, as one's own. Any ideas or materials taken from another source for either written or oral use must be fully acknowledged, unless the information is common knowledge. What is considered "common knowledge" may differ from course to course.
 - a. A student must not adopt or reproduce ideas, opinions, theories, formulas, graphics, or pictures of another person without acknowledgment.
 - b. A student must give credit to the originality of others and acknowledge indebtedness whenever:
 1. directly quoting another person's actual words, whether oral or written;
 2. using another person's ideas, opinions, or theories;
 3. paraphrasing the words, ideas, opinions, or theories of others, whether oral or written;
 4. borrowing facts, statistics, or illustrative material; or
 5. offering materials assembled or collected by others in the form of projects or collections without acknowledgment
 4. **Interference:** A student must not steal, change, destroy, or impede another student's work, nor should the student unjustly attempt, through a bribe, a promise of favors or threats, to affect any student's grade or the evaluation of academic performance. Impeding another student's work includes, but is not limited to, the theft, defacement, or mutilation of resources so as to deprive others of the information they contain.
 5. **Violation of Course Rules:** A student must not violate course rules established by a department, the course syllabus, verbal or written instructions, or the course materials that are rationally related to the content of the course or to the enhancement of the learning process in the course.
 6. **Facilitating Academic Dishonesty:** A student must not intentionally or knowingly help or attempt to help another student to commit an act of academic misconduct, nor

allow another student to use his or her work or resources to commit an act of misconduct.

OTHER POLICIES

1. **Administrative withdrawal:** Students must participate in all class discussions and conscientiously complete all required course activities and/or assignments. If a student is unable to attend, participate in, or complete an assignment on time, the student must inform the instructor. If a student misses more than half of the required activities within the first 25% of the course without contacting the instructor, the student may be administratively withdrawn from this course. Administrative withdrawal may have academic, financial, and financial aid implications. Administrative withdrawal occurs after the full refund period, and a student who has been administratively withdrawn is ineligible for a tuition refund.
2. **Civility:** To maintain an effective and inclusive learning environment, it is important to be an attentive and respectful participant in lectures, discussions, group work, and other classroom exercises. Thus, unnecessary disruptions should be avoided, such as ringing cell phones, engagement in private conversations, and other unrelated activities. Cell phones, media players, or any noisy devices should be turned off during a class. Texting, web surfing, and posting to social media are generally not permitted. Laptop use may be permitted if it is used for taking notes or conducting class activities. Students should check with the instructor about permissible devices in class. IUPUI nurtures and promotes “a campus climate that seeks, values, and cultivates diversity in all of its forms and that provides conditions necessary for all campus community members to feel welcomed, supported, included, and valued” (IUPUI Strategic Initiative 9). IUPUI prohibits “discrimination against anyone for reasons of race, color, religion, national origin, sex, sexual orientation, marital status, age, disability, or veteran status” (Office of Equal Opportunity). Profanity or derogatory comments about the instructor, fellow students, invited speakers or other classroom visitors, or any members of the campus community shall not be tolerated. A violation of this rule shall result in a warning and, if the offense continues, possible disciplinary action.
3. **Communication:** For classroom-based courses, the instructor or teaching assistant should respond to emails by the end of the next class or, for online courses, within two Indiana University working days, which excludes weekends and holidays. The instructor should provide weekly office hours or accept appointments for face-to-face, telephone, or teleconferenced meetings, and announce periods of extended absence in advance.
4. **Counseling and Psychological Services (CAPS):** Students seeking counseling or other psychological services should contact the CAPS office at 274-2548 or capsindy@iupui.edu. For more information visit <http://life.iupui.edu/caps/>.
5. **Course evaluations:** Course evaluations provide vital information for improving the quality of courses and programs. Students are urged to complete one course and instructor evaluation for each section in which they are enrolled at the School of Informatics and Computing with the following exceptions: (a) The student has withdrawn from the course; (b) fewer than five students are enrolled in the section (in which case maintaining anonymity is difficult); and (c) the section is a laboratory that must be taken with a course having a different section number. Course evaluations are completed at <https://soic.iupui.edu/app/course-eval/>. Course evaluations are typically

open from the eleventh week. Course evaluations are anonymous, which means that no one can view the name of the student completing the evaluation. In addition, no one can view the evaluation itself until after the instructor has submitted the final grades. In small sections, demographic information should be left blank, if it could be used to identify the student.

6. **Disabilities policy:** All qualified students enrolled in this course are entitled to reasonable accommodations for a disability. Notify the instructor during the first week of class of accommodations needed. Students requiring accommodations register with Adaptive Educational Services (AES) and complete the appropriate AES-issued before receiving accommodations. The AES office is located at UC 100, Taylor Hall (Email: aes@iupui.edu, Tel. 317 274-3241). For more information visit <http://aes.iupui.edu>.
7. **Email:** Indiana University uses your IU email account as an official means of communication, and students should check it daily. Although you may have your IU email forwarded to an outside email account, please email faculty and staff from your IU email account.
8. **Emergency preparedness:** Know what to do in an emergency so that you can protect yourself and others. For more information, visit the emergency management website at <http://protect.iu.edu/emergency>.
9. **IUPUI course policies:** A number of campus policies governing IUPUI courses may be found at the following link: http://registrar.iupui.edu/course_policies.html
10. **No class attendance without enrollment.** Only those who are officially enrolled in this course may attend class unless enrolled as an auditor or making up an Incomplete by prior arrangement with the instructor. This policy does not apply to those assisting a student with a documented disability, serving in an instructional role, or administrative personnel. <http://registrar.iupui.edu/official-enrollment-class-attendance.html> Children may *not* attend class with their parents, guardians, or childcare providers.
11. **Religious holidays:** Students seeking accommodation for religious observances must submit a request form to the course instructor by the end of the second week of the semester. For information visit <http://registrar.iupui.edu/religious.html>.
12. **Right to revise:** The instructor reserves the right to make changes to this syllabus as necessary and, in such an event, will notify students of the changes immediately.
13. **Sexual misconduct:** IU does not tolerate sexual harassment or violence. For more information and resources, visit <http://stopsexualviolence.iu.edu/>.
14. **Student advocate:** The Student Advocate assists students with personal, financial, and academic issues. The Student Advocate is in the Campus Center, Suite 350, and may also be contacted at 317 274-4431 or studvoc@iupui.edu. For more information visit <http://studentaffairs.iupui.edu/advocate>.

MISSION STATEMENT

The Mission of IUPUI is to provide for its constituents excellence in

- Teaching and Learning;
- Research, Scholarship, and Creative Activity; and

- Civic Engagement.

With each of these core activities characterized by

- Collaboration within and across disciplines and with the community;
- A commitment to ensuring diversity; and
- Pursuit of best practices.

IUPUI's mission is derived from and aligned with the principal components—Communities of Learning, Responsibilities of Excellence, Accountability and Best Practices—of Indiana University's Strategic Directions Charter.

STATEMENT OF VALUES

IUPUI values the commitment of students to learning; of faculty to the highest standards of teaching, scholarship, and service; and of staff to the highest standards of service. IUPUI recognizes students as partners in learning. IUPUI values the opportunities afforded by its location in Indiana's capital city and is committed to serving the needs of its community. Thus, IUPUI students, faculty, and staff are involved in the community, both to provide educational programs and patient care and to apply learning to community needs through service. As a leader in fostering collaborative relationships, IUPUI values collegiality, cooperation, creativity, innovation, and entrepreneurship as well as honesty, integrity, and support for open inquiry and dissemination of findings. IUPUI is committed to the personal and professional development of its students, faculty, and staff and to continuous improvement of its programs and services.