Add Course Request

Submitted on: 2012-12-03 15:42:35

1. **COURSE SUBJECT**	DMD
2. **COURSE NUMBER** (OR PROPOSED NUMBER)	2530
3. **COURSE TITLE**	3D Virtual World and Simulations
4. **INITIATING DEPARTMENT or UNIT**	Digital Media & Design
5. **NAME OF SUBMITTER**	Eva Gorbants
6. **PHONE of SUBMITTER**	Phone: +1 860 486 3016
7. **EMAIL of SUBMITTER**	Email: eva.gorbants@uconn.edu
8. **CONTACT PERSON**	Tim Hunter
9.**UNIT NUMBER of CONTACT PERSON** (U-BOX)	1041
10. **PHONE of contact person**	Phone: 6-2281/6-6765
11. **EMAIL of of contact person**	Email: tim.hunter@uconn.edu
12. Departmental Approval Date	11/05/2012
13. School/College Approval Date	12/03/2012
14. Names and Dates of additional Department and School/College approvals	
15. Proposed Implementation Date	Term: Fall, Year: 2013
16.Offered before next printed catalog is distributed?	No
17. **General Education Content Area**	
18. **General Education Skill Code (W/Q).** Any non-W section?	None
19. Terms Offered	Semester: Fall Spring Year: Every_Year
20. Sections	Sections Taught: 1-2
21. Student Number	Students/Sections: 16/section
22. Clarification: 1-2 sections , 16 student/section	
23. **Number of Credits**	03 if VAR Min: Max: credits each term
24. **INSTRUCTIONAL PATTERN** Two 3 hour studio/lab classes per week	
25. Will this course be taught in a language other than English?	No If yes, then name the language:

26. Please list any prerequisites, recommended preparation or suggested preparation: Prerequisites: DMD1000 Digital Foundation DMD1030 Animation Lab	
27. Is Instructor, Dept. Head or Unit **Consent Required**?	No

28. Permissions and Exclusions: Students should take this course in the in their 4th or 5th semester term	

29. Is this course **repeatable for credit**?	No If yes, total credits allowed: Allow multiple enrollments in same term?
30. **Grading Basis**	Graded

31. If satisfactory/unsatisfactory grading is proposed, please provide **rationale**:	
32. Will the course or any sections of the course be taught as Honors? AsHonors	
33. Additional Details: Other (specify): offered at the Storrs Campus	
34. Special Attributes:	

35. **REGIONAL CAMPUS AVAILABILITY**: The Storrs Campus currently has the digital media faculty and studio/lab facilities available to offer this course. Expansion to Stamford is possible.	

36. PROVIDE THE PROPOSED TITLE AND COMPLETE CATALOG COPY: 2530. Virtual World & Simulations Three credits. Two 3-hour studio sessions. Prerequisites: DMD1000 & DMD1030. Application of the fundamentals of game mechanics. Exploration of current virtual worlds, basic scripting and modeling techniques, and the principles of role-playing video games.

37. **RATIONALE** FOR ACTION REQUESTED This course is being added as part of the new curriculum for the Digital Media & Design Department's Digital Game Design & Development track. This course is also central to the curriculum of the new Department of Digital Media and Design and essential to creating the major and minor in this filed why the course is appropriate for the 1000 or 2000 level This is an introductory course in the Game Design & Development track applying basic principles of gaming and how game engines can be used to develop three dimensional computer-based environments. justification for enrollment restrictions the enrollment CAP of 16 is based on available studio/lab space. effects on the regional campuses – Currently not offered at the regional campuses. Expansion to the Stamford Campus is planned for the near future.

38. **SYLLABUS:** Online URL: (https://web2.uconn.edu/senateform/request/course_uploads/evg02003-1354312864-Syllabus DMD 2530 3D Virtual World Simulation.docx)
39. **Course Information: ALL General Education courses, including W and Q courses, MUST answer this question**
40. **Goals of General Education: All Courses Proposed for a Gen Ed Content Area MUST answer this question**

41. **Content Area and/or Competency Criteria: ALL General Education courses, including W and Q courses, MUST answer this question.:** Specific Criteria
 	
  a. **Arts and Humanities:**
  b. **Social Sciences:**
  c. **Science and Technology:**
    i. **Laboratory:**
  d. **Diversity and Multiculturalism:**
    43. **International:**
  e. **Q course:**
  f. **W course:**

42. **RESOURCES:** Does the department/school/program currently have resources to offer the course as proposed YES If NO, please explain why and what resources are required to offer the course.
43. **SUPPLEMENTARY INFORMATION**:
ADMIN COMMENT: Senate approved new course 12/10/12

Instructor: Matthew Worwood

Office Hours: xxxxxx

Office Location: xxxx

Matthew.worwood@uconn.edu

Pre-requisites: DMD1000 & DMD1030

Course#: 2530
Type: Studio

3D Virtual World and Simulations

Students in this course will be challenged to design and develop a virtual simulation that will train, educate or replicate a historical, military or scientific event. Participants will investigate a selection of different virtual environments, simulations and serious games, explore some of the basic principles of 3D modeling, and examine how game engines can be used to generate a three-dimensional computer-based environment.

Class Objectives: The student will be able...

- To create a design document that illustrates an idea for a 3D virtual simulation.
- To perform an analysis of a selection of 3D virtual worlds and simulations.
- To explain the difference between a video game and virtual simulation.
- To examine MMO video games and their impact on the immersive experience.
- To produce a prototype for a 3D virtual simulation.
- To examine the social interaction that occurs in a 3D virtual world and online community.
- To research a historical, military or scientific event that can be replicated as a 3D virtual simulation.
- To prepare an elevator pitch that provides a short overview of a 3D virtual simulation.
- To perform regular evaluations of ideas and prototypes, giving productive feedback that improves moves a project forward.
- To present an idea for a 3D virtual simulation to a panel of imaginary investors.
- To explore the difference between a virtual world designed as an educational experience and one designed for entertainment.
- To examine what elements contribute to a video game as opposed to a virtual simulation.
- To examine a selection of Role-Playing Games in an effort to identify what elements can be integrated into a virtual simulation.
- To consider the impact free-play has in the design of a virtual simulation.
- To provide peer-assessments and constructive feedback to follow students.
- To generate a story as a backdrop for a 3D virtual simulation.
- To create a skybox and virtual terrain that simulates the environment of a historical, military or scientific event.
- To consider how level design in video games can inform how a user navigates through a virtual simulation.
- To apply ideation skills and problem-solving techniques to the development of a 3D virtual simulation.

Suggested Course Reading

Aldrich, C. (2009) <u>Learning Online with Games, Simulations, and Virtual Worlds: Strategies for Online Instruction</u>. San Francisco, CA: Jossey-Bass

Course Challenge

Students in this course will respond to an imaginary RFP issued by the University of Connecticut. They will work in small groups to design and develop a three-dimensional virtual simulation that will train, educate or replicate a historical, military or scientific event.

(See Appendix A)

Course Outline

1. An Introduction to 3D Computer-Based Environments
2. Virtual Worlds and Simulations
3. Serious Gaming and Game Learning
4. Avatar and Player Interaction
5. Research and Development

Participation:
All classes will have interactive and participatory components. Your participation and contribution is essential to your success in the course. You will be expected to complete all assignments, meet deadlines, and respond to problems as they arise.

You will all start with a maximum participation grade. Points will be deducted when you miss a deadline, are absent from class without an explanation or do not fulfill one of the elements listed as participation (see appendix B).

Evaluation:

Evaluation in the course involves both formative and summative assessments. Formative assessments will be conducted through self and peer evaluations. Summative assessments will be applied to each element of the challenge project, and a final grade will be awarded based on the total number of points from each element.

Grading:
Grades are calculated based on the percentage of total points earned from participation and challenge project. For example, with a maximum of 148 points, a student scores 110 points for

their participation grade, and 20 points on their challenge project. The total is 130 points from an available 148.

130 divided into 148 = 0.88 or 88%. This would classify as an overall B based on the table below.

89-100% = A	88- 79% = B	78-69% = C	68-59% = D	58-49% = E

Scope and Sequence

Lesson	In Session (Class)	Assignment
Week 1	• **Course Orientation** Review course syllabus Discuss Request for Proposal • **Activity** What is the difference between a video game and simulation? • **Activity** Create an Avatar and Visit Second Life • **Marshmallow Challenge** • **3D Modeling Workshop**	<u>Assignment:</u> Prepare a detailed overview of an estate in Second Life. **Read:** Aldrich, C. (2009) Ch. 1: Understanding Highly Interactive Virtual Environments & Ch.2: Embracing Interactivity
Week 2	• **Discuss Class Reading** • **Student Presentations** Detailed overview of a Second Life estate. • **Simulation Use in the Real World (Training)** Examine a selection of 3D Virtual Simulations (NASA, Flight Simulators, Military) • **Course Orientation** Review Request for Proposal • **Creativity Workshop** Principles of Brainstorming • **3D Modeling Workshop** Introduction to Blender	<u>Assignment:</u> 10 Cube Challenge (adding textures) <u>Assignment:</u> Set up a Bubbl.Us account and start a Mind Map of potential ideas for your final project.
Week 3	• **Investigate Story in 3D Virtual Worlds** MMO RPG Video Games How can RPGs enhance user engagement?	<u>Assignment:</u> Model and Light a Chair **Read:** Sheldon, L. (2004) Ch. 8: Respecting the Story.

	Using story as a backdrop in a simulation
	
	 • **Simulation Use in Education**
	
	      Examine a selection of Serious Video Games
	
	 (Education)
	
	      Game for Change
	
	 Creativity Workshop
	
	      Creative Problem-Solving
	
	 • **Creativity Date**
	
	      Share Ideas and Mind Map
	
	 • **3D Modeling Workshop**
	
	      Box Modeling and Lighting Workshop	

Week 4	• **What is an Avatar?** • **Virtual World Use in the Business World?** • **Creativity Date** • Identify Creativity Buddy (in a virtual world) • **3D Modeling Workshop** • Introduction to Unity (Apply Physics to the World and Create a Skybox)	<u>Assignment:</u> Create a 3D virtual environment in Unity with Physics applied to the world. **Read:** Heiphetz, A & Woodill, A. (2010) Ch. 9: Doing it Asynchronously: Training Simulations in Second Life

Week 5	• **Discuss Class Reading**
	
	 • **What is a Free Play?**
	
	      Examine a virtual Simulation
	
	 Science Event (Space Walk)
	
	 • **Creativity Date**
	
	      Share Mind Map with Creativity Buddy
	
	 • **3D Modeling Workshop**
	
	      Introduction to Unity (Create a terrain, insert lights
		<u>Assignment:</u> Create a 3D virtual simulation of a binary sunset on a distant planet.
		
		 Read: T.B.D

	and add a first person shooter script)	
Week 6	• **Discuss Class Reading** • **What is a Design Document?** • **Player Progression** Play Portal 2 (Education Edition) Discuss 'Game Flow'. • **Workshop** Student Share Session: Unity Tutorial (or alternative game engine)	Assignment: Write a one-page overview of your simulation project
Week 7	• **Discuss Class Reading** • **Introduce Design Document (GDD)** What elements are included in a Design Document? • **Research and Development** Achieving Accurate Representation • **Discuss Class Reading** • Challenges of learning in multiplayer online environments • **Independent Study Period** • **Development Meeting with Creativity Buddy** **SUBMIT: One Pager** **SUBMIT: Mind Map**	**Read:** T.B.D
Week 8	• **Individual Pitch** • **Design Meeting** Meet with production teams for formal feedback. • **Team Selection**	

	Choose and discuss a final project.		
Week 9	• **Independent Study Period** • **Team Progress Report** **Development Meeting**		
Week 10	• **Independent Study Period** • **Team Progress Report** • **Development Meeting**		
Week 11	• **Independent Study Period** • **Team Progress Report** • **Development Meeting**		
Week 12	• **Independent Study Period** • **Alternative Forms of Simulation and Immersion** • **Team Progress Report** • **Development Meeting** **SUBMIT: Final Mind Map**		

Week 13	• **Activity**
	
	    Test Prototypes and Provide Feedback
	
	• **Team Progress Report**
	
	• **Development Meeting**
	
	    Review feedback. Proof Design Document		

Week 14	• **Final Presentation** • **Self-Reflection** **SUBMIT: Prototype** **SUBMIT: Design Document**		

REQUEST FOR PROPOSAL

Program Area: Science

Proposal: The Digital Media Center at the University of Connecticut is requesting proposals for a three-dimensional virtual simulation that is designed to train, educate or replicate a historical, military or scientific event

Program Information: The Digital Media Center at the University of Connecticut is dedicated to advancing and promoting programs of trans-disciplinary instruction and research in the areas of digital media, animation, visualization, and technology as they relate to the areas of engineering, science, business, entertainment and the arts. We are committed to facilitating collaborations and partnerships between students, faculty, industry and government leading to the creation of unique visualizations and digital communications solutions.

Submission: Proposals will be presented on T.B.D via the following components:

- An Elevator Pitch
- A Design Document
- A Prototype

All proposals will be evaluated using the rubric below.

	Above Expectations **(10– 8)**	**Expectations** **(7 – 5)**	**Below Expectations** **(4 – 1)**
Overall Idea	The overall idea for the simulation is extremely creative and would by highly valued by the target audience.	The overall idea for the simulation is worthy for development and would be useful to the target audience.	The overall idea for the simulation is weak and would unlikely be used in the real world.
Design Document	The Design Document is well organized and visually appealing. The writing is concise and creative with no obvious spelling or grammatical errors. Its front page contains a title and company logo. Detailed images and graphics help illustrate the elements that make up the simulation. All the items listed below are included in detail. • Project Overview • Intended Use by Target Audience • Evidence of Research that Supports Simulation • Mechanics of World • Control Map • Bibliography	The Design Document is well organized. The writing is concise, but includes some repetition. Its front page contains a title and company logo. Images and graphics are included. All the elements listed below are preset in the document. • Project Overview • Intended Use by Target Audience • Evidence of Research that Supports Simulation • Mechanics of World • Control Map • Bibliography	The Design Document is poorly organized. The writing is weak and includes obvious spelling and grammatical errors. A title and company logo is absent from the front page. Little or no images or graphics are used. The document lacks some of the elements listed below. • Project Overview • Intended Use by Target Audience • Evidence of Research that Supports Simulation • Mechanics of World • Control Map • Bibliography
Prototype	The prototype is in working order. A player is able to assume the control of an avatar and experience most of the mechanics that will be incorporated into the world. The controls are well mapped and provide ease of use for the player. The world is complete and content accurately represents the environment. Sound is included, the artwork is advanced for a prototype, and a menu is present.	The prototype is in working order. A player is able to experience at least some of the mechanics that will be incorporated into the world. Most of the controls are in working order. The world contains enough elements to replicate most of the environment. Sound is included, and a menu is present, even if incomplete.	The prototype includes very little mechanics that will be incorporated into the world and some controls are not functioning as designed. The world is incomplete and includes very little elements that accurately replicate the environment. The game is absent of sound, a menu and a player is unable to experience one level.
The Pitch	The student is confident and articulate. They deliver a presentation that excites the audience, identifies a target audience, and demonstrates an	The student is confident. They deliver a presentation that identifies a target audience, demonstrates an understanding for the game industry, but fails to appeal to a	The student is lacking in confidence and appears disorganized. The presentation fails to identify a target audience, and suggests a lack in understanding for the game industry.

	understanding for the game industry, and appeals to a potential publisher by including attractive comparisons to competitive products.	publisher because of a weakness, or lack of information in the comparison of competitive products.	No information is included that would appeal to a potential publisher.

Appendix B
(Participation Checklist)

Participation Checklist	Total
• Student presentation of 3D virtual world or Simulation.	10
• Student critique of the mechanics of a virtual world or simulation.	16
• Student submitted a mind map that met the assigned criteria (see mind map rubric).	16
• Student created an original Skybox in Unity.	10
• Student used a variety of lights in Unity to visualize the sunset in a binary system.	16
• Student share session with Unity (video or live presentation)	10
• Student was active in class discussions, having watched or read assigned material.	10
• Student met submission deadlines agreed prior to assignment.	10
• Student submitted a one-pager that met the assigned criteria (see one-pager rubric).	10
• Student provided informative progress updates. Sharing what they had learned and any challenges they have overcome.	20

Appendix C
(Virtual World or Simulation Technique)

Statements to Consider 1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree	Total
• The review identified the game genre and provided comparisons to similar games.	
• The review was professionally written, describing in detail the mechanics and any story.	
• The review included specifics in the strengths and weakness of the game, offering suggestions for improvement where possible.	
• The review demonstrated an understanding of design principals and applied industry terminology to describe game elements.	

Appendix D
(Mind Map/Creative Thinking)

Statements to Consider 1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree	Total
• The mind maps contained a variety of ideas that indicated the students had focused on quantity as opposed to quality during the early stages of ideation.	
• The mind map contained wild and whacky ideas that indicated the student had welcomed unusual ideas during the early stages of ideation.	
• The mind map made connections, combining and synthesizing existing ideas to produce new ones.	
• The mind map contained ideas related to the development of a simulation that meets the assigned criteria of the RFP.	

Appendix E
(One-Pager)

Statements to Consider 1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree	Total
• The one-pager was clear, concise, and contained no spelling mistakes or obvious grammatical errors.	
• The one-pager included information about the intended audience of the simulation and established a need for the project.	
• The one-pager provided information about the simulated event and how a player will experience the world.	
• The one-pager provides information about the mechanics, controls and any story used to place the simulation in context.	

Appendix F
(Individual Pitch)

Statements to Consider 1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree	Total
• The student demonstrated confidence and comfort in their project idea.	
• The student engaged the audience in their simulation project. Delivering a well-prepared performance.	
• The student provided a detailed overview of their simulation, including information about the story, mechanics, intended audience, and event.	
• The student was prepared to answer questions and responded well to feedback and suggestions from peers.	