Course Overview

Catalog Description: Analyzing and designing learning experiences using virtual worlds and virtual reality. Theories and models of social interaction, sensory perception and cognitive load in novel environments. Implications of virtual interaction.

A Longer Description: Someday soon, you’ll pull a visor over your eyes and forget where you are. You’ll use this headset to play games, explore other parts of the world, hobnob with friends, and learn new skills. While covering your eyes and ears, you’ll open yourself up to worlds that could barely be imagined by your parents. Virtual reality, augmented reality, and virtual worlds are moving from the labs and geeks to the mainstream. How will this change entertainment, news, and education? In LDT 596 you’ll explore these questions.

In this course, you’ll...
- create spherical photos to allow others to learn about a place you’ve been to;
- compare and contrast the features of Oculus Rift, Hololens, Google Cardboard and other virtual reality technologies;
- analyze the experience of interacting with others in Second Life, High Fidelity, AltspaceVR and other virtual worlds;
- design a learning environment in a virtual world.

Mode of Instruction: This class will be conducted in a mode called ‘blended synchronous’. Most students will be present in the classroom, but others will participate at a distance. Those faraway will see the same screens and hear the same discussions as those on campus. They will be encouraged to pose questions in the chat window and will sometimes appear on screen for short presentations and assignments. The goal is to blur the lines between local and distant participation so that it all feels like the same course.

Student Learning Outcomes

At the end of this course, you’ll be able to:

1. Analyze existing learning environments in multiuser, immersive worlds and in sensory-rich virtual reality applications.
2. Create an immersive experience in a particular place that could be used for education.
3. Design a learning environment that combines virtual worlds and immersive virtual reality devices.
4. Explain concepts and technologies related to this domain such as: HMD, head-tracking, interocular distance, field of view, latency, monoscopic vs. stereoscopic, OSVR, Unity3D, motion tracking, photospheres, WebVR, 360 video, Leap Motion, Oculus Rift, Google Cardboard, Samsung Gear, and Project Morpheus.
5. Explain the cultural, psychological and practical ramifications of the increasing use of virtual interactions in place of direct experience.
6. Design experiences in a virtual environment to achieve specific learning outcomes.
Enrollment Information

Course Prerequisites: Upper division standing.

Adding/Dropping Procedures are the same as for any other course. Use the SDSU WebPortal. The Spring 2016 deadline to add or drop is February 2.

Course Materials

Required Materials

These books are available at Aztec Shops and at Amazon using the links below:


*Additional online readings will be assigned as the course unfolds.*

Optional Materials

Some lectures will be based on material from the following book. Graduate students may wish to add it to their professional library.


Interacting with Me

I will respond within 24 hours to emails sent me from within Blackboard. For well-written questions with knowable answers, the turnaround time may be much shorter. If Blackboard is not working or for non-course-related communications, write to me directly at bdodge@mail.sdsu.edu and include LDT596 in the subject like. I do have a campus phone number (619.594.7401) but I don’t always check my messages. Email is much preferred. If you’d rather talk than write, drop me a note and we can set up a meeting time in my office (PSFA-311) or chat via Zoom.

Course Assessment and Grading

Your performance in LDT 596 will be assessed through a combination of assignments, activities and quizzes.

- **Project 1: Virtual World Analysis paper.** (20%) 2000 word analysis comparing two virtual world platforms in terms of their strengths and weaknesses as learning environments.
- **Project 2: Location-Based Virtual Reality Lesson and Design Document.** (25%) 1000 words for each
- **Project 3: Virtual World Learning Design Document.** (35%) 2000 word document detailing a learning experience delivered in a virtual world.
Quizzes on readings (20%)
Homework (10%)

The criteria to achieve full credit for written assignments for graduate students will include everything required for undergrads along with the following: theories and models used to describe experiences or justify design decisions; citations of relevant published research; explicit discussion of strategies to assess learner performance in virtual environments.

Course Schedule (Subject to revision)

Table 1 - Course Schedule with Date, Activity, and Assignment

<table>
<thead>
<tr>
<th>Week #</th>
<th>Date</th>
<th>Activity</th>
<th>Assignment</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Jan 20</td>
<td>Course overview&lt;br&gt;San Diego VR Meetup Meeting</td>
<td>Buy the textbooks&lt;br&gt;Read <em>Infinite Reality</em> Chapters 1-3&lt;br&gt;Homework 1: Explore <em>Second Life</em>&lt;br&gt;Email your Second Life avatar name to <a href="mailto:bdodge@mail.sdsu.edu">bdodge@mail.sdsu.edu</a></td>
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<tr>
<td>2</td>
<td>Jan 27</td>
<td>Second Life and its Successors Introduction to AltspaceVR and High Fidelity</td>
<td>Read <em>Infinite Reality</em> Chapters 4-6&lt;br&gt;Homework 2: Explore AltspaceVR</td>
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<td>3</td>
<td>Feb 3</td>
<td>Affordances for teaching and learning in a virtual world</td>
<td>Read <em>Infinite Reality</em> Chapters 7-10&lt;br&gt;Homework 3: Explore High Fidelity</td>
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<td>4</td>
<td>Feb 10</td>
<td>Class will take place online via Zoom and within a virtual world</td>
<td>Complete Project 1: Analysis of two virtual worlds</td>
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<td></td>
<td>Feb 10-11</td>
<td>Vision Summit 2016 – Hollywood CA</td>
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<td>5</td>
<td>Feb 17</td>
<td>Photospheres and 360 videos&lt;br&gt;Google Street View</td>
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<td>6</td>
<td>Feb 24</td>
<td>Teaching with Photospheres&lt;br&gt;Google Cardboard</td>
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<td>7</td>
<td>Mar 2</td>
<td>Embedding Photospheres in WordPress</td>
<td>Complete Project 2: A Place-Based Lesson</td>
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<td>8</td>
<td>Mar 9</td>
<td>Virtual Reality Overview</td>
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<td>9</td>
<td>Mar 16</td>
<td>Combining VR with Virtual Worlds</td>
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<tr>
<td>10</td>
<td>Mar 23</td>
<td>Affordances for Learning in VR Worlds</td>
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<td>11</td>
<td>Apr 6</td>
<td>Team meetings via Zoom</td>
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<td>12</td>
<td>Apr 13</td>
<td>Transactional distance in mediated environments</td>
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<td>13</td>
<td>Apr 20</td>
<td>Unity3D as a general VR toolkit</td>
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<tr>
<td>14</td>
<td>Apr 27</td>
<td>Team meetings via Zoom</td>
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<td>15</td>
<td>May 4</td>
<td>Final Showcase</td>
<td>Complete Project 3: Design for an Immersive Virtual Learning Experience</td>
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</table>

Spring Break • Mar 27 to April 2
Technologies Used in the Course

During our class sessions each week there will be short quizzes on the readings and polls to check for understanding. The platform we’ll be using for that is Socrative. You can respond to the quizzes online via your laptop or using one of their apps for iOS or Android. Set up a student account for yourself before the second class meeting.

We will also use Zoom to webcast the live sessions to participants who aren’t present and for individual and team meetings outside of lecture time. The ID for our class sessions is 192213724

During the course a number of software applications and online platforms will be demonstrated. You are not required to personally acquire all of them. Each assignment will include a range of options that will be either free or low cost to use.

Creating 360° Still images
- Google Street View (iOS)
- Cardboard Camera (Android)
- Ricoh Theta S Camera

Virtual Worlds
- High Fidelity - https://highfidelity.io
- AltspaceVR - http://altvr.com

Students with Disabilities

If you are a student with a disability and believe you will need accommodations for this class, it is your responsibility to contact Student Disability Services at (619) 594-6473. To avoid any delay in the receipt of your accommodations, you should contact Student Disability Services as soon as possible. Please note that accommodations are not retroactive, and that accommodations based upon disability cannot be provided until you have presented your instructor with an accommodation letter from Student Disability Services. Your cooperation is appreciated.

Academic Honesty

The University adheres to a strict policy regarding cheating and plagiarism. These activities will not be tolerated in this class. Become familiar with the policy (http://www.sa.sdsu.edu/srr/conduct1.html). Any cheating or plagiarism will result in failing this class and a disciplinary review by Student Affairs.

Examples of Plagiarism include but are not limited to:
- Using sources verbatim or paraphrasing without giving proper attribution (this can include phrases, sentences, paragraphs and/or pages of work)
- Copying and pasting work from an online or offline source directly and calling it your own
- Using information you find from an online or offline source without giving the author credit
- Replacing words or phrases from another source and inserting your own words or phrases
- Submitting a piece of work you did for one class to another class

If you have questions on what is plagiarism, please consult the policy (http://www.sa.sdsu.edu/srr/conduct1.html) and this helpful guide from the Library: (http://infodome.sdsu.edu/infolit/exploratorium/Standard_5/plagiarism.pdf)

Turnitin

By taking this course you are acknowledging that all required papers may be subject to submission for textual similarity review to Turnitin.com for the detection of plagiarism. You may submit your papers in such a way that no identifying information about you is included. Another option is that you may request, in writing, that your papers not be submitted to Turnitin.com. However, if you choose this option you will be required to provide documentation to substantiate that the papers are your original work and do not include any plagiarized material.