DS/CS 579 : Virtual Reality **Fall 2016**

Tuesday/Thursday 9:30AM - 10:45AM | 1109 Mcardle Building

Instructor:
Kevin Ponto
kbponto@wisc.edu

Teaching Assistant:
Hyojeong Kang
hkang74@wisc.edu

Office Hours:
T/Th 10:45-11:30PM (right after class) or by appointment

Course Objectives:

This course introduces students to the field of Virtual Reality and focuses on creating immersive, interactive virtual experiences. Survey topics include:

- Historical Perspectives on Virtual Reality Technology
- Computer Graphics and 3-D Modeling
- Human Perception and Psychology
- Human Computer Interaction in the domain of Virtual Reality
- 3D User Interface Design

Learning Objectives:

By the end of the course, students will have gained the knowledge and skills to:

- Understand the fundamental concepts relating to Virtual Reality such as presence, immersion, and engagement.
- Have the ability to participate (i.e. make intellectual contributions) to class discussions
- Be able to read and understand papers relating to Virtual Reality
- Be able to create simple computer generated environments for virtual exploration
- Be able to successfully work in a group of other individuals who may come from a variety of disciplines to create a project
- Be able to effectively communicate and present group projects
- Be able to effectively demonstrate group projects

PreReqs: This course has no official pre-requirements with the exception of sophomore standing (or instructor consent). However, the class will be technologically motivated; therefore students should be comfortable learning new software. The class will utilize publically available game design software which provides tools and services for the creation of interactive content. While not necessary, students may find it helpful to have taken classes in programming and computer graphics (such Computer Science 559: Computer Graphics) or in 3D modeling (such as Art 429: 3D Digital Studio I or DS 242: Visual Communication II).

Course Fee: There is no course fee. Students will be expected to provide their own materials.

Anticipated Audience: Students may have backgrounds in Design Studies, Computer Science, Art, Electrical / Computer Engineering, Mechanical Engineering, Industrial Engineering. This course is a mixed level course for both undergrads and graduate students. In this regard it is not considered a pure graduate-level course and does not have the graduate course attribute.

Course Format: The course will be comprised of readings, discussions, assignments and projects. All readings will be posted online and discussion will occur the following week. We will have a few assignments to get everyone up to speed. Final projects will occur in teams and will include multiple project pitches.

Course Readings: This class will not have a textbook. All course readings will be posted online. A sample of readings can be found at the end of the document

Polices:

1. Students are responsible to be aware of announcements on the course web. This will be the primary way for making announcements.

2. Class attendance is **mandatory**, and participation is an essential component. More than three absences (during the entire semester) WILL LOWER your earned final grade by one letter grade (a will become ab). If you have extenuating circumstances, contact the instructor ahead of class. Every absence after the third will lower your grade by one letter grade. (Seven absences = F). Three late arrivals equal one absence.

3. Late assignments (and work) are strongly discouraged and will result in a reduction in your grade. Deadlines are there for a reason. Please consult the instructor if a circumstance arises that requires a deadline extension.

4. Students are to use the course website in a responsible manner. You should not exploit the lack of security. For example, do not damage another person's work, or look at someone else's writing before you complete your own. Do not do anything that prevents the instructor from being able to read or edit anything.

5. Students must give proper attribution for any pieces used as part of their work.

6. Students will be expected to contribute during class discussions.

7. Students taking this course will be expected to work with teams of individuals who may or may not be associated with their major.

8. Students will be granted access to work with higher end technology. Therefore any abuse of these privileges will have severe repercussions.

9. Please notify your instructor via email in case of extended illness or any other problem that may interfere with class attendance. Send your work with another student if you are ill on the day of the critique.

10. Accommodation of any special needs (recognized disabilities, absences for athletic meets, etc.) must requested of each instructor by the end of the second week of each module. Students must also inform the instructor in advance of days they will be absent for religious holidays. Instructors will try to make reasonable accommodations in accordance with university policies.

11. If problems come up during the course of the semester, be sure to let your instructor know. This might relate to matters of health, approaches to your work, etc. We will try to help you find solutions, but will be more helpful and much more flexible if you talk to us before issues become crises. We will maintain the confidentiality of any information you share with us.

Grades: **Your final grade in this class will be calculated on the following formula:**

30% Final Project

Students will be expected to complete a final project in a group of 3 to 4 students. Projects need to be immersive, interactive, functional and well designed. Students will pitch ideas in-class and projects will be revised over the course of the semester. Projects will be judged on their effectiveness, creativity, and ability to accomplish the described goals. Additionally, students will send confidential emails describing the roles and effectiveness of each team member. Students will be graded on their ability to work as a team.

15% Project Presentations and Postings

Students will be expected to make weekly posting on the progress of their project and will be expected to present on this work on a weekly basis. Each student will be judged individually. In this regard it is important for each student to demonstrate what their contributions were on the progress of the project on a weekly basis.

25% Readings and Discussion

Readings will be posted on the course website on a weekly basis along with a set of discussion points. Students will be expected to complete these readings and post their responses before the deadline. All comments posted after in-class discussion will not receive credit.

20% Attendance and Participation

Students are expected to be in attendance and participate to group discussions. Students need to contribute in each and every class. Students will judged on a per class basis. The cumulative effort will be used to determine this section of the grade.

10% Assignments

Assignments will be used to teach students how to build virtual environments. Students will develop work outside of class and showcase their work in in-class presentations.

The percentage breakdown for final grade calculation:

93-100	=	A
90-92	=	AB
83-89	=	B
80-82	=	BC
70-79	=	C
60-69	=	D
< 60	=	F

Information on UW-Madison's grade calculation can be found at this website:
http://registrar.em.wisc.edu/students/acadrecords/grades_and_policy/grades_and_gpa.php

Classroom Climate and Incidents of Hate/Bias

This course is meant to be inclusive and welcoming so that all students feel comfortable in the classroom while also being challenged to learn and grow. If a class topic or discussion makes you feel unwelcome or unsafe please talk to the instructor about your concerns. If you are not comfortable speaking directly to the instructor, you can contact SoHE's Senior Assistant Dean, Annette McDaniel, amcdaniel@wisc.edu.

Please intervene in incidents of hate and bias when you can, and report incidents to the instructor—if you feel comfortable—and/or to the UW-Madison hate and bias reporting system: students.wisc.edu/reporthate. The University and the instructor are dedicated to addressing reports of hate and/or bias seriously, promptly, confidentially, and sensitively. Reports can include, but are not limited to, crimes such as vandalism or physical assault; non-academic misconduct such as online or verbal harassment or disruptive behavior; and/or microaggressions such as derogatory or demeaning speech from another student, TA, or faculty/staff member. A Hate and Bias Incident Team member will respond to your report and provide you with options meet your needs. You can also report anonymously.

For more information, support, and resources regarding addressing hate and bias on campus, please visit: www.students.wisc.edu/reporthate.

Student Assistance and Services:
There are many services on campus that can help students who are having difficulties. Here are a few helpful links to useful resources:

Master list of student services (including counseling, learning support, McBurney Center, safety department and SAFE nighttime services, LGBT campus center, Dean of Students office, financial aid, etc.) http://www.wisc.edu/studentLife/studentServices.php

University Health Service: http://www.uhs.wisc.edu/home.jsp?cat_id=36

GUTS (Greater University Tutoring Service) http://guts.studentorg.wisc.edu/index.asp

Tutoring help and other assistance for SoHE classes through Sohe Student Academic Affairs Office, 262-2608 acadaffairs@mail.sohe.wisc.edu

Important deadlines set by the registrar:
http://registrar.wisc.edu/deadlines.php?term=1082

Please contact your instructors via email if you should become sick. If possible, send your work with another student in the class or a friend if you have a project due.

Support your own good health with frequent hand-washing and by trying to avoid touching your eyes, nose and mouth. Influenza virus spreads through close contact with respiratory droplets, which generally means touching a contaminated surface with your hands and then touching your hands to your face. These hygiene measures are among the most powerful precautions you can take for yourself, as it will be impossible for every surface to be disinfected every time anyone touches it.