COMM 496 Special Studies

Augmented Reality for Mobile Devices

Fall 2021

McGraw 127

Mondays and Wednesdays, 9:30am to 10:45am

Instructor

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Office Hours

Mondays and Wednesdays 11:15am to 1:45pm no appointment necessary. Meetings can be schedule for alternate times, or by appointment. If you plan on scheduling a meeting for a time not during regular office hours, please email the Instructor in advance, with a requested day and time.

Office

L1217G, Andersen Library, located in the L1217 corridor (near TV Station).

Prerequisites Corequisites

MAGD 272, ARTSDIO 380

Course Overview

In this course, students will design and develop Augmented Reality projects for use on mobile devices (smart phones, tablets). Students will create 3D models and use Unity software to create and publish mobile AR applications. The design and creation of AR markers using Vuforia, a software that is integrated with Unity for recognition of 2D images and 3D objects will be learned along with methods for placing virtual content in interactive scenes. Student will learn research methods as part of the project design and development process. Demonstrations and discussions will include uses of Augmented Reality in a variety of contexts. Project work will be designed and developed by individual students and/or small teams. Subjects will be chosen by students. Experimentation with the application of Augmented Reality on mobile devices will be a part of all projects.

Course Objectives

By the end of the course, students will:

Design, develop, test, and deliver interactive Augmented Reality content in web pages created for mobile web browsers to be viewed on mobile devices.

Be able to use software tools for building 3D models, textures, and animated content.

Utilize Unity software for authoring interactive scenes containing Augmented Reality content.

Learn how to create custom Augmented Reality (AR) markers using Vuforia software with Unity, allowing for the recognition of 2D images and 3D objects for registering mobile AR content.

Utilize a design and development process that includes research and experimentation.

Understand current trends in AR design and development.

Develop and view mobile AR projects on desktop computers and mobile devices (smart phones and tablets) for Android and iPhone operating systems.

Course Format

Two class meetings per week, mixed format, lectures, discussions, and lab/studio time.

Required Readings

Readings and resources will be made available during the semester on Canvas.

Materials

Software will be available on computers in class. Any software tools used beyond what is on class computers will be free or open-source software.

Students should have access to mobile devices (smart phones and tablets) with recent Android or Apple iPhone operating systems. Although development with Unity software is done on desktop computers, the capabilities of mobile devices (camera and screen display along with ability to move and position the device in space) are key to the course content. To achieve the course goals, students will need their own smart phone or table. If you have difficulty obtaining a mobile device to work with, please contact the Instructor to explore possible solutions.

Students should have some means of saving files, a thumb drive or other external drive, or online means of saving files (dropbox.com, Google drive etc.)

Canvas will be used for exchanging files.

All relevant course information will be located on Canvas.

Software

Unity, Vuforia, other development software to be announced.

Grading Opportunities

The final course grade will be calculated from the following areas:

40% assignments

60% projects

There will be four graded assignments that will each be worth 10% of the final grade. Details for each assignment will be given in the assignment description pdf file.

There will be two graded (percentage 59 - 100) projects. The first project will be three weeks in duration and worth 25% of the overall course grade. The second project will be six to seven weeks in duration and will be worth 35% of the final grade. Details for each project will be given in the project description pdf file.

Class Mode

All classes meet in-person in McGraw 127. If there are changes to this during the semester, information will be communicated by the course instructor via campus email and/or Canvas.

Safety / COVID-19

Please follow <u>University guidelines</u> for minimizing your risk and that of others to infection. Face coverings are required in classrooms.

Attendance Policy

Class attendance is important to understanding the subject matter and successfully completing the course. If you are not able to attend a class meeting, use information posted on Canvas to keep up to date with class material.

Grading Standards

Letter Grades

- A (93 and above) Outstanding
- A- (90 92) Excellent
- B+ (87-89) High Achievement
- B (83-86) Good
- B- (80 82) Meets Requirements
- C+(77-79) Acceptable
- C (73-76) Average
- C-(70-72) Below Average
- D+ (67-69) Below Average
- D (63-66) Below Average
- D-(60-62) Below Average
- F (59 or below) Failure

Criteria for evaluation of assignments and projects:

Quality of work relating to concepts, ideas and research, as well as effective and creative use of tools for required tasks. All graded work assignments, and projects, will clearly state the objectives and areas of grading. This information will be included in the assignment, or project description. Feedback for graded work will communicate how a student performed and how the grade was calculated following the stated criteria. If there is any question during the semester as to why a grade was given or how it was determined, please see the instructor during office hours or other scheduled appointment time.

Student Conduct

The University of Wisconsin-Whitewater is dedicated to a safe, supportive and nondiscriminatory learning environment. It is the responsibility of all undergraduate and graduate students to familiarize themselves with University policies regarding Special Accommodations, Academic Misconduct, Religious Beliefs Accommodation, Discrimination and Absence for University Sponsored Events (for details please refer to the Schedule of Classes; the "Rights and Responsibilities" section of the Undergraduate Catalog; the Academic Requirements and Policies and the Facilities and Services sections of the Graduate Catalog; and the "Student Academic Disciplinary Procedures (UWS Chapter 14); and the "Student Nonacademic Disciplinary Procedures") (UWS Chapter 17).

Students with Disabilities

Learning support services for students with disabilities is provided.

Students can get more information at the Center for Students with Disabilities:

http://www.uww.edu/csd