

## CS-491 Topics in Computer Science Virtual Reality Development

### Instructor:

**Joel Castellanos**

**Office:** Room 2110 of the Farris Engineering Center (FEC)

**Office Hours:** Wed 10:00 AM - 11:00 AM and by appointment.

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**Course Web site:** [http://www.cs.unm.edu/~joel/cs491\\_VR/](http://www.cs.unm.edu/~joel/cs491_VR/)

### Course Description

In this topics course, students will become competent with developing 3D applications using the Unity game development platform. Then, students will work either individually or in small groups to complete a virtual reality project of their choosing. Requirements of each project need to be articulated by the student, presented to the class and approved. A virtual reality project may be a game, science, educational, artistic or focused on other fields. Student projects may target any virtual reality device that the student has access to and can set up for final presentations. The course has access to both an Oculus Rift and Vive devices within the studio.

### Required Textbooks and Supplies

1. Readings and videos will be internet resources with links given on the class website.
2. It will be useful, but not required, for students to bring a laptop with Unity installed and with the minimum specifications:
  - a. OS: Windows 7 SP1+, 8, 10, 64-bit versions only; macOS 10.11+
  - b. CPU: SSE2 instruction set support.
  - c. GPU: Graphics card or Integrated Graphics with DX10 (shader model 4.0) capabilities.
  - d. RAM: 8GB

### Grading

20%: Homework assignments (mini projects and peer reviews)

15%: Final project proposal (both oral and written)

15%: Written requirements document for final project

50%: Final project including both a running VR program that meets the approved requirements and an oral presentation.

### Attendance

This is largely a studio class with limited equipment. When final project work starts, most regular class time meetings will be replaced with studio time scheduled by individual students. Attendance is required at the final presentations: Wednesday December 6 from 5:30 PM to 8 PM.