

# CS 790RR

## Seminar on Simulation and Modeling

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### Textbooks

None

### Office Hours

- MTW: 11:00 a.m. - Noon, SEM 237 or SEM 203
- Or by appointment. Check [my calendar](#), find an empty slot and send me email: [sushil@cse.unr.edu](mailto:sushil@cse.unr.edu)

### Course objectives, structure, requirements, outcomes

You will do individual or group software development projects. All projects will involve simulation and modeling of some system and may involve using AI or deep learning techniques to solve problems using the developed simulation models. This semester I suggest the following project ideas..

1. Build a user-model to provide formative feedback in an intelligent tutoring system
2. Build a web-interface for a solver for the TSP, JSSP, and other combinatorial optimization problems.
3. Augment the physics models in a game simulation to reflect the physics of real-world entities and evolve maneuvering tactics for maximizing some set of performance metrics
4. Build an interactive map generator for a game simulation. This involves user modeling to interactively find properties of “fun” game maps.
5. Develop a simulation and networking bridge from Unity3D (a game engine) to a set of robots operating using the Robot Operating System.
6. Other...

You may suggest other projects and we will brainstorm to converge on a well scoped project for you in this class. To do well in this class, you will work closely with me to

1. Decide on a well scoped project within the first two weeks,
2. Prepare a weekly schedule of project deliverables
3. Deliver on schedule

Deliverables will be documents, demonstrations/code, and presentations.

Please look in <http://www.cse.unr.edu/~sushil> for pointers to papers and other information useful for this course. I would like each of you to set up a web page and keep a pointer to your work (graphical and textual) there. <https://source2.cse.unr.edu/w/cse/resources/compute/> provides access to compute nodes you can use for some of your assignments, otherwise you may use resources in the ECC

(<https://www.unr.edu/engineering/student-resources/engineering-computing-center>).

Your grade will depend on your timely delivery of project deliverables, presentations, class demonstrations, and project reports and we will use the +/- grading system. I will expect to see you after each presentation to discuss the presentation and assign you a grade.

Your grades will be computed from the following table

Item	Percentage
Project documents (description, scope, schedule,...)	20%
Project demonstrations /presentations, (initial, interim, ..., final)	40%
Project report, final deployment, submission...	40%

### **Communications**

If I need to communicate with the class as group I'll send email via canvas or mynevada. You are required to check the class website and your UNR email every day. Make sure your email information in MyNevada is up to date and implement mail forwarding if you need to. Other Internet resources can be found on the class web page.

## **Academic Success Services**

Your student fees cover usage of the Math Center (784-4433 or [www.unr.edu/mathcenter/](http://www.unr.edu/mathcenter/)), Tutoring Center (784-6801 or <https://www.unr.edu/tutoring-center>), and University Writing Center (784-6030 or [http://www.unr.edu/writing\\_center/](http://www.unr.edu/writing_center/)). These centers support your classroom learning; it is your responsibility to take advantage of their services. Keep in mind that seeking help outside of class is the sign of a responsible and successful student.

## **Statement on Academic Dishonesty**

Cheating, plagiarism or otherwise obtaining grades under false pretenses constitute academic dishonesty according to the code of this university. Academic dishonesty will not be tolerated and penalties can include canceling a student's enrollment without a grade, giving an F for the course or for the assignment. For more details, see the [University of Nevada, Reno General Catalog](#).

## **Statement of Disability Services**

Any student with a disability needing academic adjustments or accommodations is requested to speak with me or the [Disability Resource Center](#) (Thompson Building, Suite 101) as soon as possible to arrange for appropriate accommodations.

## **Statement on Audio and Video Recording**

Surreptitious or covert video-taping of class or unauthorized audio recording of class is prohibited by law and by Board of Regents policy. This class may be videotaped or audio recorded only with the written permission of the instructor. In order to accommodate students with disabilities, some students may have been given permission to record class lectures and discussions. Therefore, students should understand that their comments during class may be recorded.