SUBJECT MATERIAL
This course presents an examination of the use of artificial intelligence in computer games. Topics to be covered include general AI knowledge, path finding, movement, tactics and planning, strategy, state machines, learning, dialogue, and emotions. The course will be taught as a seminar/project class. All students will make 2-3 presentations on the various course topics and everyone will be involved in the group development of a game.

TEXTS
There are a number of recommended texts for this class. I have copies of each of these and can make copies available of any of the articles that they contain:

- *Artificial Intelligence for Games*, Ian Millington, ISBN: 978-0124977822
- *AI for Game Developers*, David Bourg, ISBN: 978-0596005559

Additional resources can be found on the Web.

SOFTWARE
Tentatively, you can use one of two software packages for developing your course project:

- Storytelling Alice or Alice 2.0 free software from [http://www.alice.org](http://www.alice.org)

Possible alternative software includes:


INSTRUCTOR
Dr. Douglas Dankel II
E301 CSE - C.I.S.E.
Box 116120
University of Florida
Gainesville, FL 32611-6120
Phone (office): (352) 392-1387
Phone (FAX): (352) 392-1220
E-mail: ddd@cise.ufl.edu
Web: [http://www.cise.ufl.edu/~ddd/](http://www.cise.ufl.edu/~ddd/)
Office Hours: tba

TA
Jonathan Ohlrich
E-Mail: johlrich@cise.ufl.edu
Office: TBA

PROJECT
Each student will be involved in the group development of a game during the semester. The domain of the project will be discussed in a later handout. The completed project will be due on the last day of class. Periodic deadlines involving the creation of some portion of the project and written reports will be specified in this later handout.
GRADING

Tentatively, the grading for this course shall be weighted:

- Presentation 1: 5%
- Presentation 2: 10%
- Presentation 3: 15%
- Project(s): 50%
- Attendance/Participation: 20%

The final percentages might vary by, at most, 5%.

LECTURE STRUCTURE

The instructor will provide ~2 weeks of general course lecture at the start of the semester. After that initial introduction, the students will make presentations on the various book chapters. All students will work in groups and be assigned chapters on which to make their presentations. These assignments will be based on the student’s preferences. Everyone is required to participate in making the group presentation. All of the other students are expected to have read the chapters before class so they can participate in a discussion of the material.

TIME TABLE

- 1/7 – 1/18: Dr. Dankel will lecture providing an overview of the course, the class project, project software, and making presentations.
- 1/23 – 2/6: First Presentations (3-4 person groups)
- 2/8: Initial Game Concept Presentations
- 2/11 – 3/3: Second Presentations (2-3 person groups)
- 3/17 – 4/7: Third Presentations (2-3 person groups)
- 4/14 – 4/23: Project Presentations

PRESENTATION TOPICS

The following are topic ideas for the class presentations (see Wisdom 2, section 1.1 and 1.2 for short description of most of these – this is also posted on the e-Learning class page): A*, Command Hierarchy, Dead Reckoning, Emergent Behavior, Flocking, Formations, Influence Mapping, Level-of-Detail AI, Manager Task Assignment, Obstacle Avoidance, Scripting, State Machines, Stack-based State Machines, Subsumption Architecture, Terrain Analysis, Trigger System, Bayesian Networks, Blackboard Architecture, Decision Tree Learning, Filtered Randomness, Fuzzy Logic, Genetic Algorithms, N-Gram Statistical Prediction, Neural Nets & Perceptions, Planning, Player Modeling, Production Systems, Reinforcement Learning, Reputation System, Smart Terrain, Weakness Modification Learning, Emotions.