Course Syllabus - Spring 2016

Course Title/Number: Game Development III:AI / IST460
Location: Weisberg Applied Engr Complex 1104
Times: TR, 2:00 pm - 3:15 pm
Instructor: Dr. Alice Lin
Office: ML 104
Phone: (304) 696-6418
E-Mail: lina@marshall.edu

Office hours: MW 12:30pm - 1:00pm, 3:45pm - 4:15pm, WAEC 1104
T 12:20 pm - 1:50 pm, PH 200
R 12:20 pm - 1:50 pm, ML 104
TR 3:15pm - 3:45pm, WAEC 1104
Other times by appointment

University Policies:
By enrolling in this course, you agree to the University Policies listed below. Please read the full text of each policy by going to www.marshall.edu/academic-affairs and clicking on "Marshall University Policies." Or, you can access the policies directly by going to www.marshall.edu/academic-affairs/policies/. Academic Dishonesty/Excused Absence Policy for Undergraduates/Computing Services Acceptable Use/Inclement Weather/Dead Week/Students with Disabilities/Academic Forgiveness/Academic Probation and Suspension/Academic Rights and Responsibilities of Students/Affirmative Action/Sexual Harassment

Course Description: From Catalog
Advanced concepts of game development with a focus on artificial intelligence. AI techniques covered include A* path finding algorithm, rule-based reasoning, reinforcement learning, neural networks, genetic algorithm, knowledge representation.

Textbook:
There will be no required textbooks for the course. Some material will be posted on blackboard and some will be handed out in class.

Credit:
The course is three (3) credit hours. It includes classroom lectures, in-class exercises, exam and project.

Course Student Learning Outcomes and Assessment Measures:

Course student learning outcomes	**How students will practice each outcome in this course**	**How student achievement of each outcome will be assessed in this course**
The student will be able to describe the fundamentals of artificial intelligence including knowledge representation, reasoning, neural networks and genetic algorithms.	In-class lectures, in-class examples, in-class exercises, presentation, project and exam	The quality of student performance on in-class exercises, project and exam
The student will be able to analyze problems that can be solved by using AI	In-class lectures, in-class examples, in-class exercises, presentation, project and exam	The quality of student performance on in-class exercises, project and exam
The student will be able to identify the boundaries of the capabilities of current AI systems	In-class lectures, in-class examples, in-class exercises, presentation, project and exam	The quality of student performance on in-class exercises, project and exam
The student will have acquired a sufficient understanding of the basic concepts and methods of artificial intelligence to make use of some elementary artificial intelligence techniques in the design of computer games.	In-class lectures, in-class examples, in-class exercises, presentation, project and exam	The quality of student performance on in-class exercises, project and exam
The student will be able to create code that incorporates elementary artificial intelligence into game coding.	In-class lectures, in-class examples, in-class exercises, presentation, project and exam	The quality of student performance on in-class exercises, project and exam

Grading Policy:
Project - 20%
In-class exercises - 50%
Final Exam - 30%

Final letter grades are determined based on the following grading scale:
90-100% A
80-89% B
70-79% C

60-69% D

Below 60 F

The instructor reserves the right to change these values depending on the overall class performance and/or extenuating circumstances.

Attendance Policy:

Attendance is strongly encouraged. Lecture material will not be reiterated for persons failing to attend a previous session. It is the student's responsibility to meet with instructor to discuss absences due to illness or other reasons. The university attendance policy will apply for excused absences.

Withdrawal Policy:

The University withdrawal policy is followed in this course. The last day to drop an individual course for the Spring Semester is March 18, 2016.

Course Schedule:

Please note this is a ***tentative*** schedule. The instructor reserves the right to make changes as appropriate based on the progress of the class.

Week	Start date	Topics, Due dates
1	1/11	Syllabus, Introduction
2	1/18	Rational Agents
3	1/25	Reasoning
4	2/1	Reasoning
5	2/8	Search
6	2/15	Search
7	2/22	AI Technique (Finite State Machines)
8	3/29	AI Technique (Random and Probability)
9	3/7	AI Technique (Flocking)
10	3/14	AI Technique (A* Pathfinding)
11	3/21	Spring Break, Classes dismissed
12	3/28	AI Technique (Path Following)
13	4/4	AI Technique (Steering Behaviors)
14	4/11	AI Technique
15	4/18	Present your projects
16	4/25	Dead Week
17	5/2	Final Exam (May 5, 12:45-2:45)