WAYNE COMMUNITY COLLEGE
Syllabus for SGD 125-60, Artificial Intelligence
Monday 5:30 PM - 8:30 PM, Spruce 202, Fall 2012

Instructor: Titus Barik

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Course Description:

Class Hours 2, Lab Hours 3, Clinical/Work Experience Hours 0; Semester Hours 3

This course introduces the artificial intelligence concepts related to simulation and game development. Emphasis is placed on expert systems. Upon completion, students should be able to describe the basic concepts and procedures related to the development of artificial intelligence systems used in simulation and games.

Prerequisite(s): None, but prior programming knowledge and a background in mathematics is strongly recommended.

Co-requisite(s): None

Required Textbook:

Millington, Ian, and Funge, John. *Artificial Intelligence for Games, Second Edition*. Morgan Kaufmann, 2009, ISBN 978-0123747310.

McGugan, George. *Beginning Game Development with Python and Pygame: From Novice to Professional Edition*. APress, 2007, ISBN 978-1590598726. Also available in eBook PDF: `http://www.apress.com/9781590598726`

Other Required Materials/Software

Personal Computer with Windows XP or higher. This semester we will be using the `Python 2.7.3` (and associated packages) as well asthe `JetBrains PyCharm IDE`.

A high-speed Internet connection is strongly recommended.

Program Learning Outcomes

Graduates of the Simulation and Game Development program will be able to:

1. Create advanced simulations and games using industry standard software applications.
2. Produce assets using techniques that reflect an understanding of the intended audience within predetermined limitations for a variety of platforms.
3. Solve programming and content creation problems through efcient use of resources.
4. Communicate simulation and game design concepts to technical and non-technical personnel.
5. Identify basic business and legal concepts applied to the games industry.

6. Discuss simulation and game design concepts including the history of games.

Course Learning Outcomes

Upon completion of this course, students will be able to:

1. Use Python and Pygame as a prototyping tool for computational problem solving.
2. Apply theoretical mathematical constructs from linear algebra, trigonometry, and probability to game algorithms.
3. Describe the model of game AI and the structure of a game engine.
4. Implement game AI techniques, including movement, decision making, and learning.

Learning/Teaching Methods

The teaching methods utilized during this course include: assigned readings, lectures, student discussions, labs, case materials, Internet assignments, collaborative projects, and presentation of supplemental information.

Course Requirements

Students find my assignments to be extremely challenging. As a result, your grade is largely determined by your ability to apply concepts in the course through programming and design projects.

Assignments	40% of grade
Pre-Lab Quizzes	20% of grade
Research Presentations	10% of grade
Midterm Exam	15% of grade
Final Exam	15% of grade

Many assignments and readings are exploratory in nature and are not assigned directly from the textbook. Please be aware that missing two consecutive weeks of assignments *may* result in the student being dropped from the course.

Grading Policy/Criteria:

Grades are assigned on a nominal seven-point scale:

A	93 - 100
B	85 - 92
C	77 - 84
D	70 - 76
F	Below 70

With the exception of officially excused absences, late assignments are not accepted. Please make sure that you have allocated adequate time to complete all assignments.

Academic Integrity Statement

See the WCC General Catalog[1]. Any student caught violating the WCC Code of Student Academic Integrity Policy, (i.e., cheating, plagiarizing, or other dishonorable acts), in academic work is subject to disciplinary action. Cheating will

[1] `http://www.waynecc.edu/pdf/catalog.pdf`

not be tolerated. Cheating will result in an automatic "F" for the course. In the Business and Computer Technology Division cheating is defined as:

1. Using another student's diskette to complete an assignment.
2. Allowing another student to use your diskette, or information from your diskette, to complete an assignment.
3. Keying or printing an assignment and giving it to another student.
4. Using unauthorized books, materials, or another person's assistance while working on any graded assignment.
5. Taking an online test for another student.

Students with Disabilities

WCC is committed to seeing that students with disabilities have equal access to and participation in all programs of study. For further explanation, please note the Students with Disabilities policy in the WCC General Catalog or in the Student Handbook[2]. Students with disabilities can contact the Disability Coordinator, in the Student Development Office, Room WLC 114, or call 919-735-5152, or via TTY 919-583-8544.

Non-Discriminatory Statement

Wayne Community College is committed to a policy of providing educational opportunities to all students regardless of economic or social status, beliefs, sexual orientation, national origin, or physical or mental disability. WCC's non-discriminatory statement may be found in the WCC Catalog.

Student Attendance Policy

The College believes students demonstrate responsibility for and commitment to their educational goals through regular attendance; therefore, students must

[2] `http://www.waynecc.edu/pdf/student-handbook.pdf`

attend 80% of the total hours of any class to receive a passing grade. Instructors will excuse no absences under this policy.

Students who miss more than 20% of the class meetings before the last date for dropping a course will receive a grade of "W". After the last date to drop, instructors will assign the grade of "WF". Instructors expect students to make up missed work, but students cannot make up absences.

WCC attendance policy allows no more than 20% of scheduled class hours as absences. Three tardies count as one unexcused absence. Students will be counted tardy if they enter class anytime after the scheduled class hour.

Phones/Pagers/Beepers

Cell phones, beepers, and walkie-talkies cause unnecessary disruption to the learning/teaching process in the classroom or lab setting. Out of courtesy to others, all systems of communication should be in quiet position during instructional or lab time.

Tobacco Policy

Wayne Community College is committed to providing students, employees and visitors with a clean, safe and healthy environment. As of August 1, 2009, the Wayne Community College campus is tobacco free.

Smoking or use of tobacco products is prohibited on the WCC campus. This includes all buildings, facilities, College vehicles, walkways, out-of-door areas, campus grounds, parking lots and the instructional areas of off-campus College programs and courses.

Violation of this policy may subject students to disciplinary action as outlined in the Student Code of Conduct.

Food and Drink Policy

Absolutely no food or drinks are permitted in the classroom at any time.

Laptop Use

Laptops are permitted in the classroom under the following conditions:

- They must be on battery power. That means no extension cords, power strips or plugging into the wall.
- They must be used only for class work. That means no surfing the web, no email, and no work for another course.
- Violations of this rule will result in an absence for that day.

Door Policy

Instructors have been advised to keep the doors to our classrooms closed and locked. Therefore, you will not be able to leave class to use the restroom or answer your cell phone. If you do, you will not be able to reenter the classroom. Only emergency situations will be exceptions to this.

Disruptive Behavior

Generally, if the students behavior obstructs or disrupts normal functioning in the class to the point that it is difficult to teach or difficult to learn then the behavior is considered disruptive. Examples include:

- Making loud and distracting noises.
- Repeatedly allowing cell phones to ring.
- Exhibiting erratic, irrational behavior.
- Persisting in speaking without being recognized.
- Repeatedly leaving and entering the classroom without authorization.
- Making physical threats or verbal insults to the faculty member or other students.

If disruptive behavior is not controlled you will be asked to leave the class and receive an absence for the day. If disruptive behavior continues, disciplinary action will be taken.

Campus Cruiser Email

You are required to use your Campus Cruiser email account for all communications with the college. You should check it at least once a day. In addition to course information, you will also receive important information from other offices on campus.

Course Outline and Calendar

For a full course outline with due dates, please view the relevant sections of the online Moodle class.