# Course Syllabus – CIS3203

Introduction to Artificial Intelligence

## Contact Information

Instructor: Jeremiah Blanchard
Email Address (preferred contact): jeremiah.blanchard@tuj.temple.edu

## Course Description

Introduction to the issues and ideas of artificial intelligence using LISP and PROLOG. Knowledge of representation, search, problem solving, learning and mathematical reasoning. NOTE: For Computer Science Majors. (4)

Pre-requisites: Minimum grade of C- in CIS 2033, CIS 2166, and CIS 2168.

## This Class / Section

In this section, we will briefly cover LISP and PROLOG. We will focus on a major sector of success fur traditional, algorithmic AI – specifically, agent AI for simulated virtual environments (such as games), which necessitates use of other languages. Topics include history and fundamentals of virtual environment design as well as common topics in AI specific to such environments. Techniques covered include problem-solving algorithms, turn-based decisions, and behavioral / decision-making techniques used to develop agents as characters. This class section will focus not just on developing intelligent systems but also those that develop user interest / engagement to enhance user experiences.

## Course Objectives

By the end of the semester, successful students should be able to…

- articulate critical elements of environment and game design and how they are applied in practice
- implement recognized problem-solving algorithms to solve a well-defined problem
- describe how problem-solving algorithms can be applied as decision-making behaviors
- combine simple steering behaviors to create fluid agent movement
- design agent decision-making behaviors using common industry frameworks
- create systems that are tailored for human rationality and expectations

## Textbooks

There are no require materials for this course; all materials will be provided by the instructor. However, you will need a computing device that can run the dotNet frameworks, Java virtual machine, and basic compilers. All of these tools are available on Mac, Windows, and Linux OSes.

## Course Topics

The following should serve as a rough topical overview of what we will examine during the course:

- History / LISP (1 Week)
- Design & Fundamentals (2 Weeks)
- Search-Based Problems (4 Weeks)
- Steering Behaviors (1 Week)
- Game-Playing (1 Week)
- Decision-Making (4 Weeks)

## Grading

The grade breakdown is as follows:

| Assignment | Percent | Overall | Pts | Grade | Percent | Grade | Pts |
|---|---|---|---|---|---|---|---|
| Exercises (2) | 14% | 93 – 100 | 4.00 | A | 73 - 76 | C | 2.00 |
| Projects (2) | 26% | 90 – 92 | 3.67 | A- | 70 – 72 | C- | 1.67 |
| Quizzes (16-drop-2) | 14% | 87 – 89 | 3.33 | B+ | 67 - 69 | D+ | 1.33 |
| Exams (2) | 26% | 83 – 86 | 3.00 | B | 63 - 66 | D | 1.00 |
| Group Work (6) | 18% | 80 – 82 | 2.67 | B- | 60 – 62 | D- | 0.67 |
| Professionalism | 2% | 77 – 79 | 2.33 | C+ | 00 – 59 | F | 0.00 |

Final grades will be rounded to the nearest whole percentage point. Grades will not be "bumped up", and no additional credit will be offered at the end of the term – so **do not ask**!

**Exercises.** Short programming assignments intended to reinforce fundamental AI programming concepts.
**Quizzes.** Taken each day on the content previously assigned content for reinforcement.
**Exams.** Summative assessments; one will be taken at the midpoint and another at the end, of the class.
**Group Work.** Deliverables completed by student groups. (***individual submission prohibited***)
**Projects.** Larger assignments, over multiple weeks, that thread together multiple concepts.

## Code Submissions

Functionality is key to success in software development and computer science, so it is **extremely important** that the guidelines are followed. Failure to follow these instructions will result in penalties.

1) Code most compile and run in debug and release mode. Debug information should not be released in the final version of a software project. **Projects that do not compile AND run will be marked zero.**

2) Include **only those files** specified by the documents (relevant source and/or header files) in your archive. Projects should have **no directory structure** except as explicitly mentioned in the documentation (i.e., relevant files and folders should be submitted in the root of the zip file.) It should be possible to open the archive, copy your files directly into the project, compile, and then run the project without further steps. If the project has naming or organization error(s), its grade will be zero.

## Expectations for the Class

Students are expected adhere to the following guidelines in this course:

**Students should act with honor and honesty in all assignments.** Sharing / copying, "borrowing" of code structure, discussing code structure, looking at code from another student or from ChatGPT (or other AI friends) or providing such code, and plagiarism, in addition to other dishonest behaviors, are all considered academic dishonesty. Absolutely no information regarding assignment solutions may be shared by students except at a conceptual level. If students implement via inspiration from other sources, they must cite those sources. Students may not copy code from the Internet or other sources under any circumstances. The instructor will report all students engaging in violations, whether a provider or receiver or unauthorized help, and w**ill recommend a grade of F** (failing) in the course and referred to the appropriate university disciplinary board. When in doubt, ask.

**Grade reviews must be requested within one week of a grade being posted.** After two weeks, no grade will be revisited. In the event of a grade review, the entire assignment will be reviewed.

**All assignments are due by the time listed on Canvas.** Projects and homework may be submitted up to five business days late for a penalty of 10% per business day. Quizzes and tests may not be submitted late for credit except with instructor approval for extenuating circumstances (see below).

**Exam and quiz make-ups will not be given except in extenuating circumstances.** For make-up consideration students will be required to submit written documentation from a reputable source as evidence. For any planned event (such as a wedding), the student is expected to contact the instructor no less than two weeks in advance for consideration. Please note that there is no guarantee that requests will be accommodated.

**Students should visit office hours for project help and grade questions.** Do not send email to, send private messages to, or "@" the instructor about project help or grades. The instructor will often try to answer questions in the chat when possible, but the way to get personalized help is to visit or make arrangements!

**Please allow 48 business hours for a response by email** and remember that we will not respond to requests for project help. The instructor has many responsibilities and will respond to messages as is practical, but it can take some time, especially during the busy parts of the term.

**Important non-project / non-grade correspondence be via email.** The chat system is helpful for simple questions and allows students to help one another, but students should not expect responses to important questions via chat.