COMP 465 — Special Topics: Artificial Intelligence
CRN 13341 — Fall 2012

Instructor: Phillip Kirlin. Office: Ohlendorf 420. Email: kirlinp@rhodes.edu. (To enable fast replies to messages, please start the subject with "CS 465.") Office phone: 901-843-3725. Office hours: Mon/Wed 12-1, Tue/Thu 11-12. I am also available immediately after class for questions. If the question is short (a minute or so), drop by my office any time. For longer questions, feel free to drop by, and if I can't talk to you at length right then, we'll set up an appointment. Don't be shy about coming by or sending me email if you can't make my regular office hours. I always set aside time each week for "unscheduled" office hours.

Class Time: Tue/Thu, 9:30-10:45, Rhodes Tower 410.

Course Overview: This course presents an overview of the fundamental techniques used in artificial intelligence today. Topics will include a subset of the following: agents, intelligent search, constraint satisfaction, game playing, utility theory, decision making under uncertainty, reinforcement learning, probabilistic reasoning, and machine learning. Other topics may be presented with student interest and as time permits.

Text: Russell and Norvig, *Artificial Intelligence: A Modern Approach*, 3rd edition, Pearson, 2010. (You may use the 2nd edition at your own risk; it has most of what is needed, though the third edition has improved pseudocode and better sections on learning.)

Prerequisites: COMP 241 (Data Structures and Algorithms) and COMP 172 (Discrete Structures) are highly suggested, but not required. Knowledge of data structures taught in 241 (such as graphs) will be assumed, as will the mathematical concepts (such as probability theory) taught in 172.

Course Work: There will be written homework assignments, programming projects, a midterm, and a comprehensive final exam. Tentative weights: written homework 20%, programming projects 30%, midterm 25%, final exam 25%. The midterm is tentatively scheduled for Thursday, October 11, during class, and the final exam for Tuesday, December 11 at 5:30pm. Final letter grades of A-, B-, C-, and D- are guaranteed with final course grades of 90%, 80%, 70%, and 60%, respectively. If your final course grade falls near a letter grade boundary, I may take into account class participation, attendance, and/or improvement during the semester.

Written homework assignments are due at the beginning of class on the assigned date. Programming projects are due on Moodle by their deadlines. In general, late work will not be accepted, nor will makeup exams be given. In exceptional circumstances (illness, death in the family, university business, religious observances) extensions may be granted. However, all extensions must be approved by me *before* the due date.

Homework assignments should be written neatly. Poorly written work will not be graded. When writing algorithms be sure not only that your solution is correct, but also that it is easy to understand why your solution is correct. Part of your grade will be based not only on correctness, but also on the clarity, simplicity, and elegance of your solution.

Programming projects may be coded in the language of your choice. If you use anything other than the versions of Python or C++ installed on the lab machines, you must (a) get approval from me before beginning to code, and (b) give me detailed instructions on how to compile and execute your code. I will generally approve any language, unless it makes the particular assignment in question trivially easy. Specific assignments may require use of a particular language.

Piazza: Piazza is an online discussion website that we will use. Piazza is great when you have questions about course material, as it will let you post questions and get answers not only from me, but from your classmates as well (you can even post anonymously if you're shy). When you have a question you

would normally send to me via email, consider posting to Piazza instead, because someone else in class may respond quicker than I can.

Sign up here: `http://piazza.com/rhodes/fall2012/comp465` or just go to piazza.com and follow the directions.

Class Conduct:

- I encourage everyone to participate in class. Raise your hand if you have a question or comment. Please don't be shy about this; if you are confused about something, it is likely that someone else is confused as well. Teaching and learning is a partnership between the instructor and the students, and asking questions not only helps you understand the material, it helps me know what I'm doing right or wrong.
- Do not use your cell phone for calls or texting while in class, and silence their ringers.
- If you cannot make it to class for whatever reason, make sure that you know what happened during the lecture that you missed. It is your responsibility, and nobody else's, to do so.
- If you have to leave a class early, inform the instructor in advance. It is rude to simply walk out in the middle of a lecture.

Makeups: If you have a valid reason for a makeup exam, inform your instructor as soon as you know. A valid reason is a medical emergency, a death in the family, religious observation, a college-sponsored off-campus activity, and, quite frankly, very little else. Generally, assignment extensions will only be granted for *unplanned* circumstances (e.g., the first two reasons above).

Students With Disabilities: If you have a documented disability and wish to receive academic accommodations, please contact the Office of Student Disability Services at x3885 as soon as possible.

Academic Integrity: Plagiarism, cheating, and similar anti-intellectual behavior are serious violations of academic ethics and will be correspondingly penalized. If you are concerned about a possible violation of this kind, please talk with me. I understand that being a student at Rhodes can be stressful sometimes and you will have many demands on your time. However, I would much rather have you turn in a partially-completed assignment or do poorly on a test than have you violate the Rhodes Honor Code. I can — and very much want to — help you if you don't understand the material, but violations of academic integrity will be dealt with harshly.

Everything you submit in this course must be your own work and represent your individual effort. These are all included in the definition of reportable Honor Code violations for this course: copying all or part of a solution to a problem, downloading a solution from the internet and submitting it as your own, having someone else provide the solution for you, or allowing someone else to copy from you. If you have any doubt about what type of behavior is acceptable, please talk with me.