CS561: FUNDAMENTALS OF ARTIFICIAL INTELLIGENCE

Syllabus – Fall 2013

Instructor: Professor Morteza Dehghani, BCI 268, mdehghan@usc.edu, Office hours: 10am-12pm Wednesdays, or by appointment

Teaching Assistant: TBA

Text: Russell, S. J. & Norvig, P. (2010). *Artificial intelligence: a modern approach* (third edition). Englewood Cliffs: Prentice hall.

Outline: The outline below is tentative and subject to change.
01. August 27: Introduction to course, artificial intelligence, and LISP. Chapter 1.
02. August 29: LISP continued.
03. September 3: Intelligent Agents. Chapter 2.
04. September 5: Problem solving as search. Chapter 3.
05. September 10: Systematic search strategies. Chapter 3.
06. September 12: Game playing. Chapter 5.
07. September 17: Propositional logic. Chapter 7.
08. September 19: First−order logic. Chapter 8.
09. September 24: Review for Midterm 1.
10. September 26: Midterm exam 1.
11. October 1: Logical inference I: clausal form, resolution. Chapter 9.
12. October 3: Logical inference II: unification, theorem provers. Chapters 9.
13. October 5: Planning. Chapter 11
14. October 10: Knowledge representation. Chapter 12
15. October 12: Reasoning under uncertainty. Chapter 13.
16. October 17: Belief networks: syntax and semantics. Chapter 14.
17. October 22: Causality. Handouts
18. October 24: Decision Making. Chapters 16.
19. October 29: Review for Midterm 2.
20. October 31: Midterm exam 2.
21. November 5: Prof. Kenji Sagae (CS/ICT): Natural Language Processing. Chapter 22.
22. November 7: Prof. Kenji Sagae (CS/ICT): Natural Language Processing. Chapter 23.
23. November 12: Learning. Chapter 18
24. November 14: Learning. Chapter 19
25. November 19: Professor Jonas Kaplan (Psychology/BCI): AI and Neuroscience
26. November 21: Prof. Jonathon Gratch (CS/ICT): Building Virtual Humans
27. November 26: Dr. Stefan Scherer (ICT): Perception. Chapter 24
28. December 3: Philosophical foundations and outlook. Chapters 26−27.
29. December 5: Review for final exam.
30. December 17: Final exam at 8:00am

Assignments: There will be 10 assignments. Assignments are assigned on Thursdays and are due the following Thursday at 10am. You will be allowed a total of five late days that can be used on the assignments. In exceptional circumstances, arrangements must be made in advance of the due date to obtain an extension. Once you have used up your five late days, one additional day late will result in a 25% reduction in the total score, two additional days late will yield a 50% reduction, and no credit will be given for three or more additional days late. Late days are in units of days, not hours, so using up part of a day uses up the whole day.

Projects: There will be four LISP programming projects. Two of the assignments need to be turned in before midterm 1, and two before midterm 2. Unlike assignments, there no late days are allowed for the projects. The same late score reduction policy applies to projects. There may be additional projects assigned for extra credit.

Grading: 35% homework, 15% projects, 20% midterm 1, 20% midterm 2, and 10% final.

Exams will be open book and notes, but no electronic devices (laptops, cell phones, PDAs, calculators, etc.) will be allowed. No make up exams will be given.

No collaboration will be allowed on any of the assignments, projects or exams. These must reflect just the work of the individual student, with no outside help (except for questions asked of the instructor or TA). On the programming projects, use of any code not produced by the individual student – whether from a friend, the Internet, or anywhere else – without explicit permission from the instructor or TA is explicitly forbidden. The standard penalty for violating this policy is an F in the course.

Statement for Students with Disabilities:
Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me (or to the TA) as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m.–5:00 p.m., Monday through Friday. The phone number for DSP is (213) 740-0776.

Statement on Academic Integrity:
USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own. All students are expected to understand and abide by these principles. Scampus, the Student Guidebook, contains the Student Conduct Code in Section 11.00, while the recommended sanctions are located in Appendix A: http://www.usc.edu/dept/publications/SCAMPUS/gov/. Students will be referred to the Office of Student Judicial Affairs and Community Standards for further review, should there be any suspicion of academic dishonesty. The Review process can be found at: http://www.usc.edu/student-affairs/SJACS/.