COURSE NUMBER: CSC529
COURSE TITLE: Artificial Intelligence
CREDITS: 3

PREREQUISITES: Grade of at least C in CSC330 and CSC350 or consent of instructor.

INSTRUCTOR INFORMATION: Dr. Nancy Green; office: 159 Petty Building; phone: 336-256-1133; office hours: by appointment; email: nlgreen@uncg.edu

COURSE OBJECTIVE: To gain an overview of the field of Artificial Intelligence with logic as a unifying thread.

STUDENT LEARNING OUTCOMES: Upon completion of the course students should be able to
1. Demonstrate knowledge of some of basic concepts, methods, and algorithms of AI.
2. Demonstrate ability to design and implement simple AI programs in the Prolog logic programming language.
3. (graduate students): Summarize and present peer-reviewed articles on theory and practice of AI.

GRADING (100 points total):

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<th>Test 1</th>
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<td>Undergraduate students: discussion, Alspace.org labs, in-class quizzes, etc.</td>
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<td>Graduate students: Presentation on AI conference or journal paper</td>
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Note that the project will build upon skills acquired by doing Homeworks 1-3. Also, graduate students are expected to demonstrate a greater depth of understanding of AI concepts, methods and algorithms than undergraduate students in their project design and implementation.

POLICIES:
- Attendance: is required. You may be dropped from the course for missing more than eight classes, including excused absences! If you are absent, whether it is excused or not, you still need to follow the policies on Due Dates and Missed Exams below.
- Due dates: Penalties for late work will be specified in the instructions for each assignment. Make arrangements with the instructor to turn in work early if you will not be in class on the due date.
- Missed exams: may be taken only if the student's absence has been excused by the instructor and if the exam is made up on the make-up exam time announced by the instructor.
• Academic Integrity: All work (including assignments and tests) is subject to the UNCG Academic Integrity Policy. When you submit your work, you are implicitly agreeing to this policy. Academic dishonesty is not acceptable and is subject to official sanctions.
• Disruptive Behavior: If you engage in non-course-related or disruptive activities (such as reading email, arriving late or leaving early, sending text messages, doing work for another class) you may be asked to leave the room and counted as absent; persistent behavior of this type may result in your being dropped from the course (see the UNCG Disruptive Behavior Policy).
• Disabilities: If you have disability-related requirements, please inform us as soon as possible.
• Copies of student work (with student’s identifying information removed) may be kept and used for curriculum assessment and in accreditation studies.
• Commercial services: Selling class notes and other class materials for commercial gain is a violation of the University’s Copyright Policy and of the Student Code of Conduct. Sharing notes for studying purposes, or borrowing notes to make up for absences, without commercial gain, are not violations.
• Emergency university closure: Closure of university facilities in response to emergencies (flu outbreak, weather, etc.) does not mean that this class is halted; check Blackboard for announcements about how the class will proceed in the event of such an emergency.


SUPPLEMENTARY READINGS: Lecture notes, slides, example problems and readings will be placed on Blackboard. You are responsible for all material covered in lecture and any materials placed on Blackboard.

OPTIONAL REFERENCE BOOKS:
• Russell and Norvig, AI: A Modern Approach, 3rd ed. This provides in-depth encyclopedic coverage of AI and is used as the AI textbook at some universities.

TOPICS: (chapters refer to Poole & Mackworth textbook unless otherwise noted)
• Introduction (ch. 1); Agent architecture (ch. 2.5)
• Logic Programming in Prolog (mainly covered in my lecture notes and Bratko)
• Search and Constraint Satisfaction (ch. 3-4)
• Logical Foundations of AI (ch. 5, ch. 12-13)
• Knowledge-based Systems (KBS) (Coppin ch. 9 – get from Blackboard)
• Reasoning and Decision-making under Uncertainty (ch. 6, 9)
• Planning (ch. 8, 14.1) – as time allows
• Other topics as time allows, e.g. Natural Language Processing (NLP), Machine Learning (ML), AI & Education (AIEd), AI & Argumentation