CS 4318: Artificial Intelligence  
Spring 2021  
Course syllabus  

Class meetings  
section 010: MWF 10:00–10:50 in MCS 112  
section 020: MWF 11:00–11:50 in MCS 112  

Instructor  
Rob LeGrand  
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office phone: 325-486-5422  
office location: MCS 205I  
office hours: online MTWRF 2:00–4:00 on demand and by appointment  

Textbook  

Catalog description  
Fundamental concepts and techniques of intelligent systems; representation and interpretation of knowledge on a computer; search strategies and control.  

Prerequisites  
CS 2336 (Data Structures and Algorithms) and senior standing are prerequisites for this course. Please see me if you haven’t taken CS 2336 or if you’re unsure about your proficiency in C++ and data structures.  

Grading breakdown  
50% homework/quizzes/projects/challenges  
25% midterm exams (three or four)  
25% final project  

Student learning outcomes  
After successful completion of this course, students will demonstrate an understanding of  
- agent-based AI architectures.  
- various searching algorithms commonly used in artificial intelligence software.  
- adversarial search and game-playing agents.  
- logic-based agents.  
- machine learning.  

Class format  
Current circumstances require a different class format than I would prefer. I’d like to use a lecture/discussion format, with homework and programming assignments done primarily outside of class, but I need to accommodate those students who won’t be coming to campus. I plan to record/stream any in-class lectures, and we may also use a “flipped classroom” style if necessary. I will post everything you need (videos, reading assignments, other materials, announcements, instructions, assignments, quizzes, exams, etc.) online. It is very important that you watch all assigned videos and do all assigned reading before coming to class.
Assuming that we have enough room in the classroom for everyone to attend every day, we will meet Mondays, Wednesdays and Fridays. (If it becomes necessary, I will divide the class in two groups: one that attends only on Mondays and one that attends only on Wednesdays.) I will take attendance, and you will need to sit in the same place all semester. Attendance is strongly encouraged but will not directly affect your grade.

Assignments may consist of homework problem sets, programming projects and “agent challenges”. In each agent challenge, you will program an agent that will compete against (and perhaps coöperate with) other students’ agents on some task. Each agent challenge may have several iterations. You will need an account on the csunix.angelo.edu server to work on all programming assignments.

You will generally be asked to work individually on assignments. Discussion and giving and receiving help are generally encouraged when working on assignments, but all work you turn in must be your own; anything you turn in you must understand thoroughly and be prepared to explain in detail. Whenever you work with anyone but me (including tutors) in any way, you must write fully detailed comments in your code describing the help: who helped, how they helped on which part(s), etc. Failure to do so is considered taking credit for work not done and thus cheating. I will be glad to help you on assignments and concepts when you need it. Exams must be completed entirely independently.

Instead of a comprehensive final exam at the end of the semester, we will have a final project.

Blackboard (angelo.blackboard.com) will be used to keep track of grades and assignments. You should check Blackboard, the course webpage and your ASU e-mail at least once a day to make sure you’re not missing anything. In particular, your ASU e-mail is the only reliable way I have of contacting you, so please don’t neglect it.

Safety

In compliance with university policy, students in this class are required to wear a mask covering both mouth and nose before, during and after class meetings. Students must also complete the required ASU Wellness Screening each day before coming to class and keep as much distance from other students as is reasonably possible. When entering the classroom, students should use provided disinfecting wipes to clean their desk area. For the safety of everyone, any student not appropriately wearing adequate facial covering will be asked to leave the classroom immediately; the student will be responsible to make up any missed class content or work. Continued noncompliance with university policy may result in disciplinary action through the Office of Student Conduct.

For safety reasons, I will hold office hours online on demand using Blackboard Collaborate. Please take advantage of class meetings to ask questions and get help, but when you need help outside of class just get in touch and I’ll do what I can to help.
You may use PCs in the computer labs, but I recommend that you have your own Windows 10 computer ready to use when you can’t get to a lab. You may need to download and install free software, such as the Respondus LockDown Browser. It is your responsibility to have and use a reliable Internet connection; for best results, use an Ethernet cable to connect to your Internet source instead of relying on Wi-Fi.

This schedule of topics should be considered approximate and tentative.

<table>
<thead>
<tr>
<th>week of</th>
<th>topic</th>
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<tbody>
<tr>
<td>January 25th</td>
<td>introduction to artificial intelligence</td>
</tr>
<tr>
<td>February 1st</td>
<td>intelligent agents</td>
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<td>February 8th</td>
<td>classical search strategies</td>
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<tr>
<td>February 15th</td>
<td>classical search strategies</td>
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<tr>
<td>February 22nd</td>
<td>beyond classical search</td>
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<tr>
<td>March 1st</td>
<td>beyond classical search</td>
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<tr>
<td>March 8th</td>
<td>adversarial search</td>
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<td>March 15th</td>
<td>adversarial search</td>
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<tr>
<td>March 22nd</td>
<td>adversarial search</td>
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<tr>
<td>March 29th</td>
<td>logical agents</td>
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<tr>
<td>April 5th</td>
<td>first-order logic</td>
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<td>April 12th</td>
<td>uncertainty</td>
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<td>April 19th</td>
<td>machine learning</td>
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<td>April 26th</td>
<td>machine learning</td>
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<tr>
<td>May 3rd</td>
<td>machine learning</td>
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The final exam for this course is scheduled for Monday, May 10th, 10:30–12:30 (section 010) and Wednesday, May 12th, 10:30–12:30 (section 020). The plan is not to have a final exam, but we may use this time for some other purpose relating to the final project.

Angelo State University expects its students to maintain complete honesty and integrity in their academic pursuits. By remaining enrolled in this course you agree not to commit academic misconduct as defined in section I.B.1 of the Student Handbook, available at www.angelo.edu/student-handbook.

You must contact Student Disability Services in order to request and to implement academic accommodations.

For ASU’s policy on absences due to religious holy days, see OP 10.19 at www.angelo.edu/opmanual.

I am obligated to report any knowledge of sexual misconduct to the Title IX office; see www.angelo.edu/services/title-ix.

This syllabus, including grade evaluation and course schedule, is subject to modification. In particular, the COVID-19 pandemic may require significant changes in course delivery and content on potentially short notice.