

CSCI 7130 ARTIFICIAL INTELLIGENCE

Spring 2023

Instructor:	Dr. Weitian Tong Assistant Professor in Computer Science
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Office:	IT 2305
Office hours:	M 8:00 am – 5:00 pm; or by appointment
Lecture class:	N/A (Online Course with Asynchronous Instruction: This course is delivered 100% through distance education technology. No visits to campus/designated instructional site are required.)
Important Dates:	Please refer to Spring 2023 University Calendar for details. <ul style="list-style-type: none">• January 9, Class begins and Attendance Verification• January 9 – 12, Drop/Add• January 16, Martin Luther King Jr. Holiday – No classes• March 6, Last day to withdraw without academic penalty• March 13 – 18, Spring break for students – No classes• May 1, Last day of classes• May 2 – 6, Final Exams
CRN and Credits:	CRN 14937, 3.0 credit hours
Prerequisite(s):	A minimum grade of “B” in CSCI 3230 and CSCI 3232 or Permission of Instructor.
Course Content:	This course will introduce basic concepts and core algorithms of artificial intelligence including agents, rationality, search, heuristic, game-playing, planning, perception, knowledge representation, logic-based reasoning, probabilistic representation and reasoning, and machine learning (neural networks, deep learning, etc.).
Textbook:	There is no required textbook. The following is a recommended book for students who want to read more. <ul style="list-style-type: none">• Stuart Russell and Peter Norvig. Artificial Intelligence, a Modern Approach. 3rd or 4th edition.
Materials:	<ul style="list-style-type: none">• All course materials (such as syllabus, slides, and homework descriptions) are available on Folio.• The actual course schedule will be updated timely on our course website: “www.weitiantong.com/teaching/AI-course”
Assessments:	<ul style="list-style-type: none">• Coding Homework (5 times): 25%;• Written Homework (5 times): 25%;• Course Project (Individual): 50%.
Grading Scale:	A: [90, 100]; B: [80, 90); C: [70, 80); D: [60, 70); F: [0, 60).

Objectives and outcomes:

This course will introduce the basic ideas and techniques underlying the design of intelligent computer systems. Upon successful completion of this course,

- students will demonstrate fundamental understanding of the history of artificial intelligence (AI) and its foundations;
- students will apply basic principles of AI in solutions that require problem solving, inference, perception, knowledge representation, and learning;
- students will build autonomous agents that efficiently make decisions in fully informed, partially observable and adversarial settings, draw inferences in uncertain environments, and optimize actions for arbitrary reward structures;
- students will demonstrate awareness and a fundamental understanding of various applications of AI techniques in intelligent agents, expert systems, artificial neural networks and other machine learning models.

Topics:

Please follow the course website: “www.weitianlong.com/teaching/AI-course” for *timely updated course schedule*.

- Introduction to AI
- Agent and environments;
- Search problem and problem formulation
- Uninformed Search and Informed Search
- Constraint Satisfaction Problems (CSP)
- Local Search
- Adversarial Search and Game Trees
- Propositional and First Order Logic
- Markov Decision Processes (MDP)
- Reinforcement Learning (RL)
- Machine learning (ML)

Course Policy:

- **Academic Honesty:** Consultation with fellow students is encouraged. However, directly copying another student’s work (past or present) defeats the purpose of the assignments and exams and is an honor code violation. Unless otherwise noted, you are expected to complete all assignments **individually**. Violations of the Georgia Southern University academic honesty policy (including cheating and plagiarism) are taken very seriously. Any violation of this policy will become part of the student’s permanent educational record. More information on the academic dishonesty policy and procedure can be found at: Academic Dishonesty.
- **Late Assignments, make-up work/tests:** **No** late work will be accepted and there is **no** make-up work available in this class, unless the absence is due to a situation that is beyond your control and can be **verified by written documentation**.
- **Attendance:** As this course is an online course with asynchronous instruction, it is delivered 100% through distance education technology. No visits to campus/designated instructional site are required. All course materials will be posted on Folio and/or the course website. Detailed guidelines will be provided on Folio each week. Please follow the guidelines to complete every assigned task.
- **Grading disagreement:** Requests for re-evaluation of assignments and quizzes must be made by email **within one week** after the grades are available. Requests for re-evaluation

of tests (i.e., Midterm and Final) must be made by email **within 24 hours** after grades are available.

- **Communication: Important news will be announced on Folio.** To ensure effective communication, you are required to check Folio or your university email (if the announcements are pushed to your email) for all communications related to this class. It is your responsibility to check your Folio account and university email daily, as many important communications will be done via email.
- **Distribution of course materials:** Lecture notes, assignments/quizzes/exams, as well as their sample solutions, are prepared for students in this course **only**. Any other use, distribution, or posting in places outside this course are prohibited without written permission from the instructor.
- **Illnesses:** We want you to take appropriate precautions for your health as well as the well-being of your classmates. If you become ill during the term, please contact me immediately. We will work through what you will need to do, to either continue working in class or make up work that might have been missed during your absence. If you have an illness that would result in an extended absence, you will need to contact the Dean of Students office. In the event of serious illness, injury, or extenuating circumstances, the DOS office will notify professors at your request.
- **Disability-related Accommodations:** Georgia Southern University is committed to providing reasonable accommodations to students with documented disabilities as required under federal law. Disabilities may include ADD or AD/HD, autism spectrum disorders, brain injuries, chronic medical conditions, communication disorders, hearing impairment, learning disabilities, mobility impairment, psychological disorders and visual impairment. The purpose of disability accommodation is to provide equal access to the academic material and equal access to demonstrate mastery of the material. If you have a disability and need accommodations, please contact the Student Accessibility Resource Center (SARC). You will need to meet with a SARC staff member who can help you gather documentation of your disability or refer you to an appropriate resource for assessment. Once documentation of the disability is approved, SARC staff will provide you with an accommodation letter detailing the approved accommodations which you should present to me so we can discuss and implement your accommodations. Disability accommodations work best starting at the beginning of the semester, but can be approved and started at any point in the semester. Accommodations start at the time the accommodation letter is presented to faculty within reasonable timelines; accommodations are not given retroactively. SARC on the Statesboro campus is located on the second floor of Cone Hall and the phone number is (912) 478-1566. SARC for Savannah and Liberty campuses is located on the second floor of Memorial College Center and the phone number is (912) 344-2572.
- **Equal Opportunity & Title IX:** Please refer to “Equal Opportunity & Title IX” for more information.
 - **Reporting:** Georgia Southern University does not discriminate on the basis of sex, race, color, sexual orientation, gender identity or expression, national origin, religion, age, veteran status, political affiliation, or disability. While students are encouraged to share with faculty any issues or concerns they may be having, please be aware there are reporting requirements which are a part of the job requirements at Georgia Southern University. For example, if you disclose an issue of sexual misconduct, the information will be kept as private as possible but faculty and staff are required to bring it to the attention of the institution’s Title IX Coordinator/Director of Equal Opportunity

and Title IX.

- **Pregnant and Parenting Students:** Georgia Southern University does not discriminate against students who are pregnant, give birth, experience a false pregnancy, termination of pregnancy, or recovery therefrom. Students should work with their faculty as soon as possible to arrange appropriate accommodations based on this status; delays in reporting may impact available accommodations. Students will be treated similarly to other similarly situated students. Absences from class may be excused due to pregnancy or childbirth for as long as medically necessary. At the conclusion of medical leave, the student will be allowed to return to the same academic status. Medical certification may be requested from the student. Both students and faculty are able to consult with the Title IX Coordinator regarding any questions or issues which arise.

Enjoy the class!