

CS 1571: Introduction to Artificial Intelligence (Fall 2026)

Department of Computer Science, SCUPI

Course Reference Number: 312209030 (CS1571)

When: Spring 2026

What & Where:

Lectures, 1:50PM-4:25PM on Monday @ S206, SCUPI Building, Jiang'an South Campus

Instructor: Dr. Guangwu Qian

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Office: Room N524, 5th Floor, SCUPI Building

Web: <https://scupi.scu.edu.cn/en/faculty-staff-en/faculty-en/guangwu-qian>

Office hours: 10:00AM - 11:30AM and
4:30PM - 6:00PM on
Monday

Teaching Assistant:

Section 1: Ao Wang (1523953644@qq.com)

Course Description: This course will provide an introduction to the fundamental concepts and techniques underlying the construction of intelligent computer systems. Topics covered in the course include: problem solving and search, logic and knowledge representation, planning, reasoning and decision-making in the presence of uncertainty, machine learning and deep learning.

Course Objectives:

- To provide a broad survey of AI and of the most popular techniques that are employed for: knowledge representation, problem solving, mathematical optimization, automated planning, probabilistic prediction and inference, sequential decision-making, supervised and reinforcement learning, deep learning, decision-making in multi-agent adversarial scenarios.
- To develop a thorough understanding of the algorithmic foundations of AI and acquire a strong appreciation of the big-picture aspects of designing fully autonomous intelligent agents.
- To develop operational know-how about how to build/program AI agents, and analyze and improve their performance.

Learning Outcomes: After completing this course, students will be able to:

- Analyze complex computing problems and apply principles of computing and other relevant disciplines to identify solutions.
- Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
- Communicate effectively in a variety of professional contexts.
- Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
- Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
- Apply computer science theory and software development fundamentals to produce computing-based solutions.

Prerequisites: The courses CS1501 Algorithm Implementation and CS1502 Formal Methods in Computer Science are required. Working knowledge of programming languages (Python preferred) and familiarity with Windows/Linux are assumed.

Blackboard: <https://pibb.scu.edu.cn>

All handouts, class notes and assignments will be published on Blackboard. You are expected to check this website frequently.

Textbook: *Artificial Intelligence: A Modern Approach, 4th Edition* by Stuart Russell and Peter Norvig, Pearson, 2020, ISBN 978-0134610993.

Note on Email & Communication: The instructor and TA will periodically post announcements to the Blackboard website. It is every student's responsibility to regularly monitor these announcements. The instructor and TA will periodically email enrolled students with announcements. Students must check their SCU email at least once per day to ensure these announcements are received. When contacting the course staff via email, messages must be addressed to (or CC) both the instructor and the TA. Email subject should be prefaced with the appropriate prefix (e.g., "[CS1571]").

Course Grading:

Ordinary Grade (Attendance, Questions, Assignments)	30%
Midterm Exam / Mini Project	40%
Final Exam	30%

Grading Policy:

Attendance and participation in lectures may be used to decide borderline grades.

Unless explicitly noted otherwise, the work on this course is to be done independently. Discussions with other students on the assignments should be limited to understanding the statement of the problems. Cheating in any way, including giving your work to someone else, will result in a low grade for the course and a report to the appropriate Institute/ University authority.

Submission & Late Policy: All written assignments must be submitted electronically and **there is no late submission**. An assignment which is late will be accepted *only* under special circumstances with the instructor's permission prior to its deadline. In such a case, the instructor will determine any penalty in a fair manner.

Make-up Policy: Students are expected to take both midterm and final exams. Make-up exams will only be given in the event of a medical situation or an emergency, and only if this is documented and the instructor is notified *immediately if in advance is not possible*. Missing an exam will result in a failure for the exam.

Students with Disabilities: If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both your instructor and TA as early as possible in the term.

Religious Observance: In order to accommodate the observance of religious holidays, students should inform the instructor of any such days as early as possible in the term by email.

Audio/Video Recording: To ensure the free & open discussion of ideas, students may not record classroom lectures, discussion and/or activities without the advance written permission of the instructor, and any such recording properly approved in advance can be used solely for the student's own private use.

Copyrighted Material: All material provided through this web site is subject to copyright. This applies to class notes, slides, assignments, solutions, project descriptions, etc.

You are allowed (and expected!) to use all the material provided for personal use. However, you are strictly prohibited from sharing the material with others in general and from posting the material on the Web or other file sharing venues.

Outline: Tentative Lecture Schedule

1. Introduction and History of AI.
2. Search: BFS, DFS, UCS, Greedy, A*, α - β pruning, Expectimax, MCTS
3. Constraint Satisfaction.
4. Logic: propositional logic, inference, first-order logic.
5. Probabilistic Models.
6. Bayesian Network.
7. Hidden Markov Model.
8. Machine Learning: naïve Bayes, regularization, logistic regression, SGD.
9. Deep Learning: Supervised and unsupervised learning, CNN, RNN.
10. Reinforcement Learning.

References:

- 1) 人工智能：现代方法（第4版），ISBN: 978-7-115-59810-3，出版社：人民邮电出版社
- 2) 人工智能:一种现代的方法(第3版)(影印版), 作者: [美]拉塞尔（Stuart J.Russell），[美]诺维格（Peter Norvig），ISBN: 978-7302252955，出版社：清华大学出版社

Tentative Date of Final Exam: Dec. 28th, 2026 (Monday)