

Topics in Artificial Intelligence Section 01

CS 256

Spring 2024 3 Unit(s) 01/24/2024 to 05/13/2024 Modified 01/22/2024

Contact Information

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Office Hours

Tuesday, Thursday, 11:45 AM to 12:45 PM, MH 213

Course Description and Requisites

Introduction to topics in artificial intelligence such as problem solving methods, game playing, understanding natural languages, pattern recognition, computer vision and the general problem of representing knowledge. Students will be expected to use LISP.

Prerequisite(s): CS 156 and Graduate standing. Allowed Declared Major: Computer Science, Bioinformatics, Data Science. Or instructor consent.

Letter Graded

Classroom Protocols

To ensure a positive and productive learning environment, here are some important points to keep in mind:

Materials and Updates

- Find course materials on Canvas at <http://sjsu.instructure.com>.
- Regularly check MySJSU and your email for updates.

Recording and Privacy

- Recording any class activities, including lectures, is only allowed with the instructor's permission.

- You are not permitted to share or distribute class recordings.
- Instructor-generated materials (like syllabi, lectures, and presentations) are protected by copyright.
- Violation may result in referral to Student Conduct and Ethical Development office.

Respectful Behavior

- Treat your fellow classmates with respect and kindness.
- Avoid interruptive or disruptive behavior during class.
- Limit electronic device usage to relevant learning activities.
- The full code of conduct is available on Canvas.

Program Information

Diversity Statement - At SJSU, it is important to create a safe learning environment where we can explore, learn, and grow together. We strive to build a diverse, equitable, inclusive culture that values, encourages, and supports students from all backgrounds and experiences.

Course Learning Outcomes (CLOs)

After studying "Introduction to Artificial Intelligence," a student should be able to demonstrate the following Course Learning Outcomes:

1. **Advanced Theoretical Knowledge:** Demonstrate a comprehensive understanding of core AI concepts, including machine learning, deep learning, neural networks, reinforcement learning, and natural language processing.
2. **Critical Analysis and Problem Solving:** Critically analyze complex problems and develop AI-based solutions. This includes the ability to identify appropriate AI methodologies and tools for specific problems.
3. **Research Skills:** Conduct independent research in AI, demonstrating the ability to review, critique, and synthesize AI literature and current research findings.
4. **Practical Application and Implementation:** Apply AI theories and techniques to real-world scenarios, including the development of AI models and systems using programming languages like Python, R, or Java.
5. **Ethical and Social Implications:** Understand and articulate the ethical, legal, and social implications of AI technologies, including issues like bias, privacy, and the impact on employment.
6. **Innovation and Creativity:** Show the ability to innovate in the field of AI, including designing new algorithms, models, or approaches to solve novel problems.
7. **Interdisciplinary Knowledge:** Integrate knowledge from other disciplines such as psychology, neuroscience, mathematics, and computer science to enhance AI applications.

8. **Communication Skills:** Effectively communicate complex AI concepts and research findings to both technical and non-technical audiences.
9. **Project Management and Teamwork:** Demonstrate the ability to manage AI projects, including working effectively in teams, and coordinating interdisciplinary efforts.
10. **Continual Learning and Adaptation:** Show an ability to engage in lifelong learning in the field of AI, adapting to its rapid advancements and changing technologies.

These Course Learning Outcomes reflect the knowledge and skills a student is expected to gain from studying Introduction to Artificial Intelligence

Course Materials

Artificial Intelligence: A Modern Approach" by Stuart Russell and Peter Norvig

This is a comprehensive text that covers a wide range of AI topics and is often considered a standard in university courses.

Deep Learning" by Ian Goodfellow, Yoshua Bengio, and Aaron Courville

This book is essential for understanding the fundamentals of deep learning, a key subset of AI.

Library Liaison

Yuqi He, Ph.D., MLIS
Engineering & Data Services Librarian
University Library
San Jose State University
(408) 808-2044

Technology Requirements

Laptop: This course requires the student to have a personal computer with internet access for all classes and quizzes.

Programming Language: Python

IDE (integrated development environment): Anaconda, Jupyter Notebook

Course Requirements and Assignments

Meeting the Course Requirements and completing the Assignments are essential for successfully progressing in the course.

Participation Exercise

Exercises and quizzes will be assigned per lecture and may be provided at any point during the class. These exercises serve the purpose of motivating you to study and review the concepts and materials covered in the lecture.

Homeworks

Expected to be submitted by midnight as indicated in the schedule.

Exams

There will be two in-class exams.

Final Project

The final project must be taken on the scheduled day.

Research

Paper and related topics will be selected for presentation.

✓ Grading Information

Grade	Range (%)
A+	97 and above
A	93-96
A-	90-92
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	73-76
C-	70-72
D+	67-69
D	63-66

D-	60-62
F	Below 60

University Policies

Per [University Policy S16-9 \(PDF\)](http://www.sjsu.edu/senate/docs/S16-9.pdf) (<http://www.sjsu.edu/senate/docs/S16-9.pdf>), relevant university policy concerning all courses, such as student responsibilities, academic integrity, accommodations, dropping and adding, consent for recording of class, etc. and available student services (e.g. learning assistance, counseling, and other resources) are listed on the [Syllabus Information](https://www.sjsu.edu/curriculum/courses/syllabus-info.php) (<https://www.sjsu.edu/curriculum/courses/syllabus-info.php>) web page. Make sure to visit this page to review and be aware of these university policies and resources.