



جامعة الفيصل
Alfaisal University

كلية الهندسة والحوسبة المتقدمة
College of Engineering and Advanced Computing

Introduction to Artificial Intelligence (SE 444)

Prof. Anis Koubaa

akoubaa@alfaisal.edu

Welcome to SE 444, a comprehensive course on artificial intelligence fundamentals. This course equips you with the knowledge to understand how **intelligent systems perceive, reason, and act**. You'll gain practical experience implementing **AI solutions**, from **search algorithms** to **ethical considerations**, fostering critical thinking about AI's **societal role**.



Course Overview

Course Details

- **Course Code:** SE 444
- **Credits:** 3
- **Semester:** Fall 2025
- **Lecture Hours:** 3 hrs weekly
- **Type:** Elective

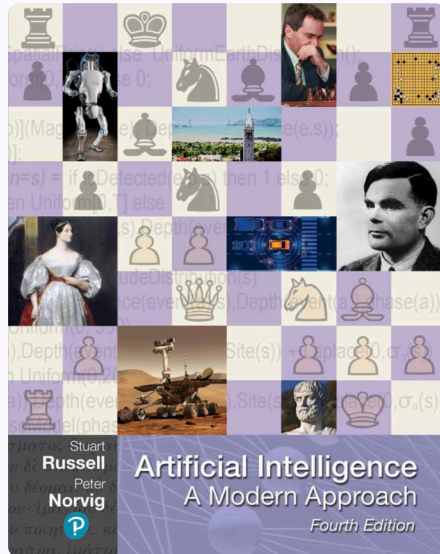
Instructors

- Prof. Anis Koubaa
- Prof. Nidal Nasser
- **Office:** SG-10
- **Email:** akoubaa@alfaisal.edu
- **Phone:** 7497
- **Office Hours:** MON/WED 12:00-1:00 PM

Resources

- **Textbook:** Russell & Norvig, "Artificial Intelligence: A Modern Approach" (4th Edition, 2020)
- **Course Materials:**
<http://elearning.alfaisal.edu/>
- **Schedule:** Mondays & Wednesdays
- **Duration:** Aug 25 - Dec 17, 2025

Textbook



Russell & Norvig, "Artificial Intelligence: A Modern Approach" (4th Edition, 2020)

This comprehensive textbook is a cornerstone in the field of Artificial Intelligence, renowned for its depth, clarity, and broad coverage of modern AI principles and applications. It provides a solid foundation for understanding both the theoretical underpinnings and practical aspects of AI, making it an essential resource for this course.



aima.cs.berkeley.edu

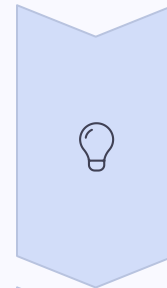


Artificial Intelligence: A Modern Approach, 4th Global ed.



Learning Outcomes

By successfully completing this course, students will develop the following competencies:



Knowledge & Understanding

Explain core AI concepts, including search, knowledge representation, reasoning, planning, and uncertainty. (ABET Outcome SO 1)



Technical Skills

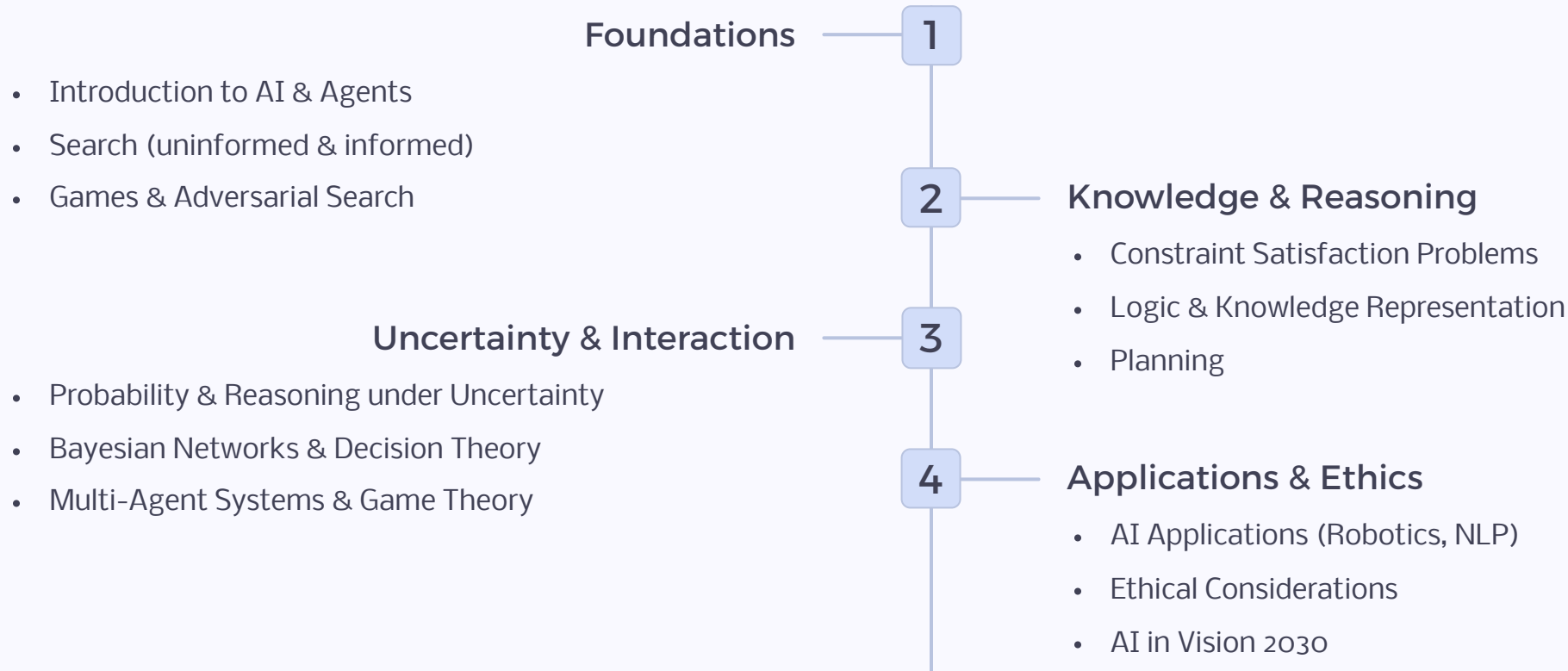
Implement AI-based solutions for problems such as search, games, constraint satisfaction, and probabilistic reasoning using programming tools. (ABET Outcomes SO 2, SO 6)



Values & Responsibility

Evaluate the ethical, societal, and professional implications of AI in engineering and real-world applications. (ABET Outcomes SO 3, SO 4, SO 5)

Course Topics



* Calendar and outline are tentative and subject to change depending on unforeseen influential factors.

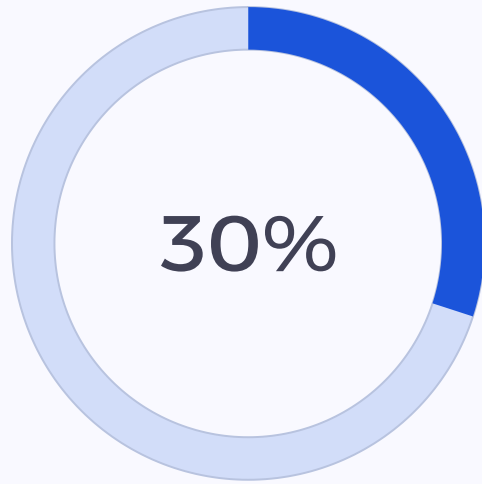
Course Schedule: Weeks 1-7

Week	Dates	Topics	Assessments
1	Aug 25-27	Introduction to AI, intelligent agents, environments, rationality	–
2	Sept 1-3	Problem formulation, BFS, DFS, UCS, practice problems	Assignment 1 released, Lab (Search coding)
3	Sept 8-10	Informed search (Greedy, A*), Heuristics, A* lab	Quiz 1 (Search)
4	Sept 15-17	Adversarial search (Minimax), Alpha-beta pruning, Tic-Tac-Toe AI	Lab
5	Sept 22-24	Constraint Satisfaction Problems (CSP), Backtracking, Sudoku/map coloring	Assignment 2 released, Lab
6	Sept 29-Oct 1	Review & practice (Search + CSP)	Midterm 1 (Weeks 1-5)
7	Oct 6-8	Propositional logic, inference, Knowledge representation basics	Lab

Course Schedule: Weeks 8-15

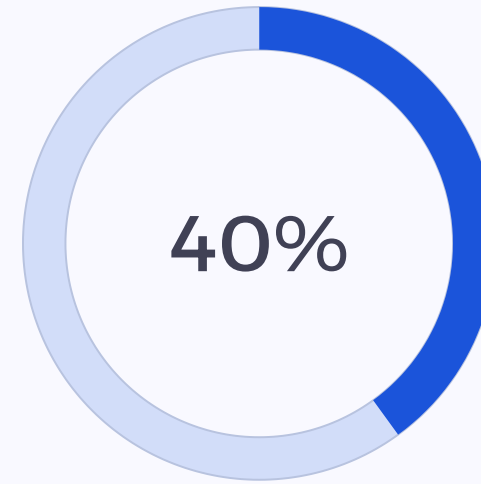
Week	Dates	Topics	Assessments
8	Oct 13-15	First-order logic, unification, Logic lab (KB examples, medical diagnosis)	Assignment 3 released, Lab
9	Oct 20-22	Planning (STRIPS, robot navigation), Planning lab, problem solving	Quiz 2 (Logic + Planning)
10	Oct 27-29	Probability basics, Bayes rule, Naïve Bayes, spam filter demo	Assignment 4 released, Lab
11	Nov 3-5	Review & practice (Logic + Probability)	Midterm 2 (Weeks 7-10)
12	Nov 10-12	Bayesian networks, inference, Decision theory, applications	Lab
13	Nov 17-19	Multi-agent systems, game theory, Prisoner's dilemma, auctions	Assignment 5 released, Lab
14	Nov 24-30	Mid-Semester Break (No Classes)	–
15	Dec 1-17	AI applications, Project development, Final Presentations & Wrap-up	Project due (Dec 17)

Assessment Structure



Final Exam

Comprehensive assessment covering all course material

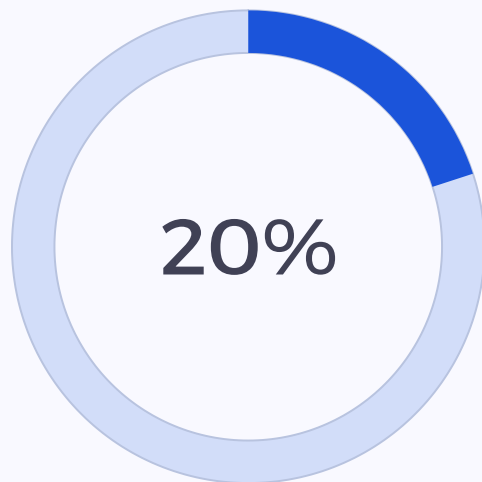


Midterm Exams

Two exams (20% each):

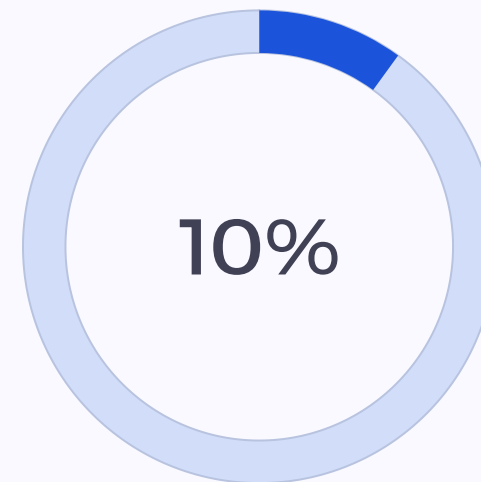
Midterm 1 covers Weeks 1-5 (Search, Games, CSP);

Midterm 2 covers Weeks 7-10 (Logic, Planning, Probability)



Quizzes

Two quizzes (10% each): Quiz 1 (Search), Quiz 2 (Logic & Planning)



Project

A comprehensive project demonstrating application of course concepts

Attendance & Electronic Device Policies

Attendance Requirements

- Attendance at all lectures, labs, and tutorials is mandatory.
- Missing 20% or more of lecture hours may result in a Dismissal Notification (DN) grade.
- Three late arrivals (over 5 minutes) count as one absence.

Electronic Device Policy

- Electronic devices require instructor permission; unauthorized use results in dismissal and an absence.
- During exams, all electronic devices are prohibited (except authorized calculators).
- Possessing a mobile phone during an exam, even if off, will result in a zero score and disciplinary action.



Academic Policies

Submission Policy

All homework, assignments, lab reports, and projects must be submitted on or before the deadline. Late submissions incur penalties and won't be accepted beyond two days after the deadline (including weekends).

Academic Integrity

Students must uphold academic integrity at all times. Cheating, plagiarism, or any form of academic dishonesty is a serious offense and may result in severe penalties, including expulsion. When in doubt, consult the instructor.

E-Learning (Moodle)

Moodle is the official platform for course materials, announcements, and communication. Students are responsible for checking Moodle regularly and keeping track of updates. Instructors will upload lecture slides within two days of delivering the lecture.

The course follows all University policies as outlined in the **Undergraduate Student Guide (USG)**.

Academic session dates, registration deadlines, and withdrawal deadlines can be found at: <https://bit.ly/2U4KrIT>.