



**Course Syllabus**  
**(On-Campus/Online/Blended)**  
**ARTIFICIAL INTELLIGENCE I**  
**AI381**

**Instructor Information**

<b>Instructor</b>	<b>Email</b>	<b>Office Location</b>	<b>Phone/Extension</b>
Rami Jomaa	<a href="mailto:r.jomaa@upm.edu.sa">r.jomaa@upm.edu.sa</a>	BC205	1203

**Office Hours:**

Sunday  
Monday 11:00 AM – 1:00 PM  
Tuesday  
Wednesday 11:00 AM – 1:00 PM  
Thursday

**Notes:**

Please call me on my cellphone if you did not find me in the office or to arrange appointments.

<b>TA</b>	<b>Email</b>	<b>Office Location</b>	<b>Phone/Extension</b>
NA			

**Office Hours:**

Sunday  
Monday  
Tuesday  
Wednesday  
Thursday

**Notes:**

**Course Information**

<b>Semester</b>	<b>Credit</b>	<b>Pre-Requisites</b>	<b>Co-Requisites</b>	<b>Required Software/Equipment</b>
Fall 2023	3 Hours	CS112	CS211:Data Structures and Algorithms	To be announced

## Course Description

Artificial Intelligence (AI) is transforming how we live, work, and play by enabling new technologies such as self-driving cars or improving existing technologies such as medical diagnostics and search engines. This course provides a broad overview of key concepts, techniques, and applications of AI. The course covers intelligent agents, problem solving via search algorithms, knowledge representation and reasoning, machine learning including deep learning, major application areas like computer vision, NLP, and robotics, as well as current and future trends and ethical considerations of AI.

## Course Objectives

### The main objectives of the course are to:

- Provide students with a broad overview of fundamental AI concepts, historical context, current techniques, applications, and ethical considerations.
- Introduce students to core AI approaches including search, knowledge representation, machine learning, and deep learning.
- Expose students to major AI application areas such as computer vision, natural language processing, and robotics.

## Course Learning Outcomes (According to the latest NQF template)

Upon completion of this course, students should be able to:

Code	Course Learning Outcomes	PLO code	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	Define key terminology, definitions, and concepts related to artificial intelligence, including search, logic, and knowledge representation.	K1	<ul style="list-style-type: none"> <li>• Lectures</li> </ul>	<ul style="list-style-type: none"> <li>• Exams</li> <li>• Class Activities</li> <li>• Quizzes                             <ul style="list-style-type: none"> <li>• Assignment</li> </ul> </li> </ul>
1.2	Recognize the concepts and applications of AI, Machine and deep learning, Natural Language Processing, Robotics, and computer vision	K1	<ul style="list-style-type: none"> <li>• Lectures</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Exam</li> <li>• Class Activities</li> <li>• Quizzes                             <ul style="list-style-type: none"> <li>• Assignment</li> </ul> </li> </ul>
1.3				
2.0	Skills			
2.1	Apply search algorithms to solve problems in domains.	S3	<ul style="list-style-type: none"> <li>• Lectures</li> <li>• Class discussions</li> <li>Case studies</li> </ul>	<ul style="list-style-type: none"> <li>• Exams</li> <li>• Assignments</li> <li>• Project</li> </ul>
2.2	Analyze intelligent agents by utilizing the concepts of Knowledge Representation and logic	S3	<ul style="list-style-type: none"> <li>• Lectures</li> <li>• Class discussions</li> <li>• Case studies</li> </ul>	<ul style="list-style-type: none"> <li>• Exams</li> <li>Project</li> </ul>



Code	Course Learning Outcomes	PLO code	Teaching Strategies	Assessment Methods
2.3				
3.0	Values, autonomy, and responsibility			
3.1	Demonstrate values, autonomy, and responsibility as a member or leader of a team.	V1	<ul style="list-style-type: none"> <li>Case Studies</li> <li>Class discussions</li> <li>Project</li> </ul>	<ul style="list-style-type: none"> <li>Project</li> </ul>
3.3				

### Course Materials

#### Required Text

- Stuart Russell, Artificial Intelligence: A Modern Approach, Pearson, Fourth Edition, 2021 Supplementary Reading

#### Electronic Material

- Git/ Github, Kaggle, Hugging Face, etc.
- Presentations, research papers, lab materials , etc.

### Assessments and Grading

Assessment	Weight	Date/Frequency of Evaluation
Assignments	10%	Every 5 weeks
Quizzes	5%	Every 4 weeks
Mid Exam	20%	Week 9
Project	20%	Week 14
Final Exam	40%	Week 16
Class activities (e.g., participations)	5%	Weekly



Assessment	Weight	Date/Frequency of Evaluation
Total	100%	

### Academic Polices

#### Academic Integrity Policy

- Academic misconduct is a violation of the UPM regulations and will not be tolerated. Academic misconduct includes any form of cheating such as fully or partially copying answers in exams and/or assignments, plagiarism, or submitting any work that is not authored by the student himself/herself. Such violations will result in a grade of F for a test/assignment and/or the course. In some cases, academic misconduct may result in suspension or expulsion from the University.
- Use of cellphones, laptops, tablets or any other electronic device is not allowed during the class except for class activities with the instructor supervision and approval.
- In order to maintain a culture of academic integrity, members of the University of Prince Mugrin are expected to promote honesty, trust, fairness, respect and responsibility.

#### Attendance Policy

As per the regulation of the Ministry of Education, the following attendance policy will be applied:

Percentage of Absences to Total Number of classes	Corresponding Number of Classes	Action Required
=10%		First Warning
=15%		Second Warning
> 25%		DN Provided

- A student is marked late if he/she attended the class 10-15 minutes late.
- A student who is more than 15 minutes late will be marked absent even if he/she attended the rest of the class.
- Every three tardy classes count as one absence.
- Attendance for remote classes will be taken as the name of the students appear on the screen. The instructor may assign points for class participation that the student will miss if he/she did not respond to during the remote class session.
- The “DN-Notice” email is sent when student absence exceeds 25%, and accordingly:
  - i. The student has the right to review his/her absence record with the course instructor and discuss reasons of absenteeism with the instructor and the HoD.
  - ii. The HoD may reject the DN grade if the student reasoning and/or course performance are convincing.
  - iii. The student has the right to file an appeal for the College Council no later than the two weeks before the exam period to reject the DN grade. Students who filed an appeal of the DN grade have the right to sit in class and participate in all class activities till the decision is declared.

**Please note:** Absence-Warnings and DN-Notices are valid even if the student did not check, see, or reply to the emails. It is the student sole responsibility to regularly check his email and to refer to the IT department in case there is any technical issues.

#### Exams Policy



- Students who miss any exam (first major, second major, midterm, and/or final) with a valid excuse should submit formal proofs to the course instructor/coordinator within 48 hours of their return to study.
- The course instructor/coordinator prepares a list of all students who missed the exam with their excuses and submits that to the Head of Department for approval. The document submitted for approval should state the time and date of the make-up exams for all the students.
- A student who does not submit his/her formal excuse documents within 48 hours of his/her return to study, his/her excuse will not be considered, and the student will not be allowed to attend the make-up exam.

### Online Classroom Rules

- General communication between the instructor and students or among students should take place in “Posts” in the Class TEAMS group.
- The “Posts” in TEAMS is a space to get support from the instructor or from your classmates. In “Posts”, you can teach and learn. You may also post inquiries about the assignments. Please use the “Posts” effectively and share thoughts/material that are related to the class, exclusively.
- Private communication whether personal, interpersonal, or professional will be handled via individual email or via the communication features (voice, video, messages) in the TEAMS group.
- Please mute your mics during the class to avoid any distortion to the instructor or to the classmates. If you need to say something, un-mute your mic, speak up, then mute your mic again.
- Assignments/Tasks are posted on TEAMS with comprehensive details about completion and submission.
- Due date and time for submission of each assignment/task/quiz is specified TEAMS.

### Instructor Class Rules

- 1 mark deducted per day late for Homework and Lab Activities. Maximum days late is three.
- 3 marks deducted per day late for Project.
- Keep your phone silent.
- Once the attendance is taken anyone who arrive to the classroom will be considered late.

### Course Outline

Date	Topic	Reading	Assessment
27 Aug - 02 Sep	<ul style="list-style-type: none"> <li>▪ <b>Introduction to AI: What is AI, The Foundation of AI, and History of AI</b></li> <li>▪ Aug 27: Classes begins for Fall 2023</li> <li>▪ Aug 31: Last day to accept visiting requests for Fall 2023.</li> <li>▪ Sep 02: Last Day to accept semester postpone request for Fall 2023</li> <li>▪ Sep 02: Last day to accept Change of College / Major requests.</li> </ul>		
Sep 3 – Sep 9	<ul style="list-style-type: none"> <li>▪ <b>Intelligent Agents: Agents and Environments</b></li> <li>▪ Sep 09: Last day to Add / Drop courses for Fall 2023.</li> <li>▪ Sep 09: Last day to drop course(s) without permanent record.</li> </ul>		



Date	Topic	Reading	Assessment
Sep 10 – Sep 14	<ul style="list-style-type: none"> <li>• <b>Intelligent Agents: Agents and Environments</b></li> <li>• Sep 10 – Nov 25: Withdraw from course(s) with a "W" grade, thru SIS.</li> </ul>		
Sep 17- Sep 21	<ul style="list-style-type: none"> <li>• <b>Solving Problems Searching: Informed, uninformed and Local Search</b></li> </ul>		HW1
Sep 24 - Sep 28	<ul style="list-style-type: none"> <li>▪ <b>Solving Problems Searching: Informed, uninformed and Local Search</b></li> <li>▪ Sep 24: Saudi National Day</li> </ul>		Q1
01 Oct – 05 Oct	<ul style="list-style-type: none"> <li>• <b>Solving Problems Searching: Informed, uninformed and Local Search</b></li> </ul>		HW2
08 Oct – 12 Oct	<ul style="list-style-type: none"> <li>• <b>Constraint Satisfaction Problems</b></li> </ul>		Q2
15 Oct – 19 Oct	<ul style="list-style-type: none"> <li>▪ <b>Adversarial search</b></li> </ul>		
22 Oct – 26 Oct	<ul style="list-style-type: none"> <li>▪ <b>Knowledge Representation and Logic</b></li> </ul>		HW3
29 Oct – 2 Nov	<ul style="list-style-type: none"> <li>▪ <b>Knowledge Representation and Logic</b></li> <li>▪ Nov 02: Extended Weekend Vacation</li> </ul>		Q3
5 Nov – 9 Nov	<ul style="list-style-type: none"> <li>• <b>Machine Learning</b></li> </ul>		<b>Midterm Exam (Thursday, 9 Nov)</b>
12 Nov – 16 Nov	<ul style="list-style-type: none"> <li>▪ <b>Deep Learning</b></li> </ul>		
19 Nov – 25 Nov	<ul style="list-style-type: none"> <li>▪ Middle of First Semester Vacation</li> </ul>		
26 Nov – 30 Nov	<ul style="list-style-type: none"> <li>▪ <b>Computer vision, Natural Language Processing, and Robotics</b></li> <li>▪ Nov 26: Resume Classes after Midterm Vacation</li> <li>▪ Nov 26 – Dec 16 Withdrawal from all courses with a grade of "WP/WF", thru SIS</li> </ul>		HW4
03 Dec – 07 Dec	<ul style="list-style-type: none"> <li>▪ <b>Ethics of AI</b></li> <li>▪ Dec 03: Admission Starts for Spring 2023 (Online)</li> </ul>		Q4
10 Dec – 14 Dec	<ul style="list-style-type: none"> <li>▪ <b>Applications and Future of AI</b></li> <li>▪ Dec 12: Last day to Submit "DN" Grades, thru SIS.</li> <li>▪ Dec 14: last day of classes for Fall 2023.</li> </ul>		Project discussion HW5
17 Dec – 21 Dec	<ul style="list-style-type: none"> <li>▪ <b>Applications and Future of AI</b></li> <li>▪ Dec 17: Extended Weekend Vacation</li> <li>▪ Dec 18 – Jan 01: Final Examinations</li> </ul>		
24 Dec – 28 Dec	<ul style="list-style-type: none"> <li>▪ Final Examinations</li> </ul>		
31 Dec – 4 Jan	<ul style="list-style-type: none"> <li>▪ Jan 01: Last day of Exam</li> <li>▪ Jan 04: Last day for Faculty Members to submit final grades..</li> </ul>		



\* Last day for faculty members to submit final grades is **Thursday January 04<sup>th</sup>, 2024**

\* Last day for faculty members to submit Course Files is **Saturday January 13<sup>th</sup>, 2024**