UAB
Universitat Autònoma de Barcelona

Applications and Challenges of AI I

Code: 106595
ECTS Credits: 6

2025/2026

Degree	Type	Year
Artificial Intelligence	OB	4

Contact

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Teachers

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Teaching groups languages

You can view this information at the end of this document.

Prerequisites

No prerequisites have been defined.

Objectives and Contextualisation

This subject aims to provide the student with a broad vision of the main challenges and applications of artificial intelligence (AI) in different fields of application.

Competences

- Act within the field of knowledge by evaluating sex/gender inequalities.
- Analyse and solve problems effectively, generating innovative and creative proposals to achieve objectives.
- Communicate effectively, both orally and in writing, adequately using the necessary communicative resources and adapting to the characteristics of the situation and the audience.
- Identify, analyse and evaluate the ethical and social impact, the human and cultural context, and the legal implications of the development of artificial intelligence and data manipulation applications in different fields.

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- Know and apply the innovation, technology transfer and citizen participation processes in the field of artificial intelligence.
- Students can apply the knowledge to their own work or vocation in a professional manner and have the powers generally demonstrated by preparing and defending arguments and solving problems within their area of study.
- Work cooperatively to achieve common objectives, assuming own responsibility and respecting the role of the different members of the team.
- Work independently, with responsibility and initiative, planning and managing time and available resources, and adapting to unforeseen situations.

Learning Outcomes

1. Analyse and solve problems effectively, generating innovative and creative proposals to achieve objectives.
2. Analyse sex/gender inequalities and gender bias in the field of knowledge.
3. Communicate effectively, both orally and in writing, adequately using the necessary communicative resources and adapting to the characteristics of the situation and the audience.
4. Communicate in a non-sexist and non-discriminatory way.
5. Evaluate how stereotypes and gender roles affect the professional exercise.
6. Identify opportunities for innovation and knowledge transfer when AI is applied to different sectors and fields.
7. Identify the needs and opportunities for applying AI to different sectors and fields.
8. Propose projects and actions that incorporate the gender perspective.
9. Students can apply the knowledge to their own work or vocation in a professional manner and have the powers generally demonstrated by preparing and defending arguments and solving problems within their area of study.
10. Work cooperatively to achieve common objectives, assuming own responsibility and respecting the role of the different members of the team.
11. Work independently, with responsibility and initiative, planning and managing time and available resources, and adapting to unforeseen situations.

Content

- AI and communication: Sources, Truthfulness and Strategies for the Digital Society
- AI and social challenges: Between disinformation and the opportunities of artificial intelligence.
- AI and accessible communication: communication technologies, user-needs, and ethical dilemmas in the digital age.
- AI in health: AI to prevent, diagnose and transform clinical care.
- AI and social institutions: Algorithms in the service of transparency, justice and citizenship.
- AI and business management: Smart to connect, optimise and grow.

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Theory classes	12	0.48	7, 6
Type: Supervised			
Project follow-up	10	0.4	1, 3, 7, 6, 10

Type: Autonomous				
Work in the project	114	4.56	1, 2, 4, 3, 7, 6, 8, 10, 5	

The course will be organised around the development of a practical project based on a real use case of AI in one of the application areas covered in the module. At the beginning of the module, the challenges, opportunities and potential issues arising from the use of AI in each area will be presented. Based on this introduction, various use cases will be defined, and students will work in small groups of 4 to 6 people to analyse the case and propose alternative solutions.

Class activities will be organised into two types of sessions:

- Supervision sessions to monitor the development of the project based on the use case.
- Theoretical sessions in which the challenges and opportunities of each application area will be presented.

Students will be expected to build on the work done in face-to-face sessions with their own independent study in order to complete the project. The bulk of the work required for the project must be carried out independently, outside scheduled class time.

All information related to the module and any necessary documentation will be available on the virtual campus (cv.uab.cat).

On the first day of the course, a detailed calendar with the content of each session will be presented. This will be made available on the course's virtual campus, where students will find all the learning materials and information needed to follow the course effectively. In the event that the teaching modality is modified due to force majeure as determined by the relevant authorities, the teaching staff will inform students of any changes to the course schedule and teaching methods.

Notes

- The course content will be sensitive to gender perspectives and will promote the use of inclusive language.
- Fifteen minutes of one class session, within the calendar establishedby the faculty or degree programme, will be reserved for students to complete the teaching and module evaluation surveys.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Assessment

Continous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Oral presentation	20%	2	0.08	4, 3, 8
Project follow-up	20%	2	0.08	1, 2, 4, 3, 7, 6, 8, 9, 10, 11, 5
Written report	20%	10	0.4	1, 2, 4, 3, 7, 6, 9, 5

Evaluation activities consist of several components. The final project grade is calculated by weighting the evidence collected from each of the following activities:

- Follow-upsessions (20%): some class sessions will be held to monitor and evaluate the progress of the work done by the students.
- Written report (20%): students will have to prepare a final report describing the analysis of the use case and the proposed solution.
- Oral presentation (20%): students will have to make a final oral presentation outlining the work done during the course.
- Quality of the implemented solution (40%): this evidence will correspond to the assessment of the quality of the analysis and discussion of the use case and of the proposed solution alternatives.

In the assessment of this evidence, there will be a group grade, but also an individual grade depending on the contribution of each student observed in the follow-up sessions and oral presentations.

If the minimum grade does not reach 5, there will be the possibility of recovery by submitting a new improved version of the report and the proposed solution. There will be no option to recover the grade of the oral presentation and follow-up sessions

In the event that the student commits any irregularity that could lead to a significant alteration of the mark of an assessment activity, that assessment activity will be awarded a mark of 0, regardless of any disciplinary proceedings that may be initiated. If multiple irregularities occur in the assessment activities of the same subject, the final mark for that subject will be 0.

This course does not provide for a single-assessment system.

In this course, the use of Artificial Intelligence (AI) technologies is permitted as an integral part of assignment development, provided that the final outcomedemonstrates a significant contribution from the student in terms of analysis and personal reflection. Students must clearly identify any content generated using AI, specify the tools employed, and include a critical reflection on how these technologies have influenced both the process and the final result of the assignment. Failure to disclose the use of AI in this assessed activity will be considered a breach of academic integrity and may result in a partial or total penalty to the assignmentgrade, or more serious sanctions in severe cases.

Bibliography

Dodhia, R. (2024). AI for social good: Using artificial intelligence to save the world. John Wiley & Sons.

Russell, S. J., & Norvig, P. (2020). Artificial intelligence: A modern approach(4th ed.). Pearson.

Sutherland, K. E. (2025). Artificial Intelligence for Strategic Communication. Springer Books.

Chemnad K and Othman A (2024). *Digital accessibility in the era of artificial intelligence-Bibliometric analysis and systematic review*. Front. Artif. Intell. 7:1349668. doi: 10.3389/frai.2024.1349668

* Additional detailed bibliography will be provided during the sessions.

Bibliography

Not defined

Software

No specific software is needed

Groups and Languages

Please note that this information is provisional until 30 November 2025. You can check it through this link. To consult the language you will need to enter the CODE of the subject.

Name	Group	Language	Semester	Turn
(PAUL) Classroom practices	711	English	first semester	afternoon
(TE) Theory	71	English	first semester	afternoon