

Course form to fill in (2022-2023)

Course title:

AI and Sustainable Development

Staff responsible for the course:

Lecturers:

Julia Guillemot and Amanda Abrom

1) COURSE PRESENTATION

Aims:

Draw up a list of competencies and/or skills that the student should have acquired or improved at the end of the course.

You must fill in the field under the format “the student should be able to...” using action verbs such as define, realise, control... *(This description should not take more than ten lines)*

At the end of the course, the student should be able to:

AI for Sustainable Development and AI Governance

- To understand and analyze the role of AI in achieving the Sustainable Development Goals;
- To be able to describe the impact of AI on economic, environmental, societal, and political outcomes;
- To understand the main ethical topics underpinning the development of AI systems;
- To be familiar with the main global AI governance frameworks and current policy considerations;
- To be able to critically think about the ethics and governance of AI systems given specific cases.

Sustainable Development

- To understand the historical and causal patterns of economic development across various regions and how these processes have affected people and planet;
- To understand the nature and history of the causes and impacts of environmental change on people and the planet;
- To understand the historical causes and patterns of wealth and social inequality;
- To understand the role of institutions, governance bodies, and multilateral agreements;
- To be familiar with current sustainable development careers and opportunities, as well as understand basic foundations of educating the next generation and creating social movements

Prerequisites:

You must not write courses' codes or names, but identify the preliminary skills as the knowledge or the know-how needed to efficiently follow this course.

Write it out in terms of knowledge and methodologies required to follow this course (this would help students from direct entry to position themselves). *(This description should not take more than five lines)*

No prerequisite is assumed apart from the Introduction to AI class

Course contents:

Here, an abstract of the course can be given or the different chapters of the course can be simply written down.

(The description should not take more than ten lines)

Introduction:

- Introduction to AI Ethics
- Introduction to Sustainable Development

Economic Dimension of AI & Sustainable Development:

- History of Economic Development and Economic Growth
- Labor Markets and Technological Shifts
- Inequalities and Digital Inclusion

Environmental Dimension of AI & Sustainable Development:

- Environmental Cost of AI and Data Centers
- Planetary Boundaries, climate, and the global energy mix
- Externalities in the context of climate change, carbon taxes, and climate policy instruments and negotiations

Political Dimension of AI & Sustainable Development:

- Role of Institutions and Multilateral Agreements
- Human Rights, Digital Rights, and Justice
- AI & Social Media Manipulation for Political Pursuits

Societal Dimension of AI & Sustainable Development:

- Health, Education, and Gender in the Sustainable Development Agenda
- Inequality and the rise of algorithmic discrimination
- Interacting with machines and mental health

2) WORKING LOAD

Here, you should allocate the effective working load of the course, including an estimation of the personal work required from the student.

TABLE 1

Course's types	Number of hours	Notes
<u>Effective presence</u>		
- <i>Magistral Course</i>	15	
- <i>Interactive Course</i>	9	
- <i>Tutorials</i>		
- <i>Coaching</i>		
- <i>PBL Course</i>		
<u>Training from a distance</u>		
- <i>Video-conferences</i>		
- <i>Webinars</i>		
<u>Self-learning</u>		
- <i>Books 'readings</i>		
- <i>E-learning</i>		

- <i>Research</i>		
<u>Outdoors-training</u>		
- <i>In firms</i>		
- <i>Internship</i>		
<u>Personal work</u>		
- <i>Group Projects</i>	4	
- <i>Individual Projects</i>	6	
- <i>Personal work</i>		
Total working time for the student	34	

3) **EDUCATIONAL METHODS**

Tick here the different educational methods used:

- Coaching
- Case Study
- E-Learning and/or Self-learning
- Interactive courses
- Presentations
- Projects
- Research
- Seminars
- Tutorials
- Visits

4) **ASSESSMENT**

Sum up briefly the course assessment's mechanism (*two or three lines*) in order to introduce the assessment's table that you have to complete below (table n°2).

You must also define clearly how feedback will be given to students (in accordance with the feedback policy).

<ul style="list-style-type: none"> • Participation in class is worth 10% • In-Class Activities are worth 10% each for 30% total • A reflection paper is worth 30% • A final group presentation is worth 30% <p>*Individual feedback will be given to students after each assignment</p>

List the assessment for each modality.

TABLE 2

Modality	Type of control	Length (h)	Number	Weighting (%)
<u>Continuous assessment</u>	Continuous assessment			
	Mid-term exam			
	Participation			10%
	Oral presentation			
	MCQ			
<u>Final exam</u>	Oral final exam			

	Written final exam			
Others	Case study			
	Group Project			30%
	Individual Project			
	Written assignment			30%
	Exercises			30%
Total				100%

5) RECOMMENDED READING

Name of books (*indicate only three or four must-read references*) / Name of reviews:

Reference book (appellation reserved for books selected by the School and necessarily bought by all the students):

Class books :

Reviews :

Internet Resources:

Please indicate here if you use the school intranet site to put on-line documents and/or if you advise the visit of web sites to students.

Name of the Website	URL