* Course Data Sheet Outline **
(on-line catalogue)

The on-line catalogue of courses is updated at each session by ATHENS institutions

<table>
<thead>
<tr>
<th>Session</th>
<th>13-17 March 2023</th>
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<tbody>
<tr>
<td>Institution</td>
<td>Politecnico di Milano</td>
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<td>Course location</td>
<td>Politecnico di Milano</td>
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<td>Email contact</td>
<td>of the ATHENS local coordinator</td>
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<tr>
<td>Title of the course</td>
<td>VALUable Machine Learning Hero Agency</td>
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<td>Code of the course</td>
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<tr>
<td>Language of tuition</td>
<td>English</td>
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<td>Minimum year of study</td>
<td>4th</td>
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| Number of places | Minimum (10≥20) Maximum (unlimited) Reserved for local students
Min 16 – Max 20/24? (8-12 from Engineering + 8-12 from Design) |

Prerequisites
Students from Engineering background should have basic knowledge and experience in developing machine learning systems.
Students from Design should be familiar with a human-centred design approach and representation tools (e.g. Adobe Illustrator, ProCreate, or similar, ...).

Objectives
Clearly indicate the main objectives of the course

The course aims to enable design and engineering students to:
- **Understand and outline machine learning systems as socio-technical systems**;
- **Identify and use values to drive the design of machine learning systems**;
- **Anticipate possible impacts of machine learning systems in practical, personal, social, cultural, and eco-systemic dimensions**;
- **Identify and exploit the core characteristics and capabilities of machine learning systems in suitable applications**;
- **Generate relevant, consistent, effective, ethically acceptable, sustainable, and desirable design concepts including machine learning systems**;
- **Communicate and collaborate in an interdisciplinary teams to develop a machine learning system**.
### Programme to be followed

**Detail the programme of the week (day 1 – day 5)**

#### DAY 1
- **09.30 – 10.30 |** Technology is not neutral *(course and topic introduction + ice-breaking activity)*
- **10.45 – 12.30 |** A responsible and value-driven approach to the design of machine learning (ML) systems *(lecture + beginning of group-work)*
- **12.30 – 13.30 |** Lunch break
- **13.30 – 15.30 |** Problem framing *(group work)*
- **15.45 – 16.30 |** Peer review session

#### DAY 2
- **09.30 – 10.30 |** Getting in touch with machine learning *(lecture)*
- **10.30 – 11.30 |** Exploration and attempt to define ML capabilities *(group work)*
- **11.45 – 12.30 |** ML Agents explanation *(lecture)*
- **12.30 – 13.30 |** Lunch break
- **13.30 – 14.30 |** Training of VALUable ML Heroes designers *(formative tests)*
- **14.45 – 16.30 |** VALUable ML Hero concept development *(brief & tools intro + group work)*

#### DAY 3
- **09.30 – 12.30 |** VALUable ML Hero concept development *(group work)*
- **12.30 – 13.30 |** Lunch break
- **13.30 – 14.30 |** Peer review session
- **14.45 – 16.30 |** VALUable ML Hero representation *(group work)*

#### DAY 4
- **09.30 – 12.30 |** VALUable ML Hero representation *(group work)*
- **12.30 – 13.30 |** Lunch break
- **13.30 – 16.30 |** Testing VALUable ML Heroes *(peer review activity)*

#### DAY 5
- **09.30 – 12.30 |** Finalization of VALUable ML Hero representation *(group work)*
- **12.30 – 13.30 |** Lunch break
- **13.30 – 15.30 |** Final presentation and peer review
- **15.45 – 16.30 |** Lessons learnt and discussion

### Course exam

*Clearly indicate the format of the examination (the exam must take place on Friday at the latest, no project or report submitted after an ATHENS week)*

*Intermediate formative tests and reviews, and final project presentation.*

### Professor responsible

**Name/SURNAME of the responsible professor**

Davide SPALLAZZO

### Participating professors

**Name/SURNAME of participating professors**

Martina SCIANNMAE'
<table>
<thead>
<tr>
<th>Contact</th>
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<tr>
<td>Email / Telephone</td>
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<tr>
<td>Indicate the contact (email and telephone) of the professor responsible <a href="mailto:davide.spallazzo@polimi.it">davide.spallazzo@polimi.it</a></td>
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