**Engage.EU Certificate in Digital Transformation**

**Competing in the age of AI**

**Course Syllabus**

**Lecturer: Giorgio Piccardo**

**17–18 February 2023 & 24–25 February 2023**

**Course Abstract**

Artificial intelligence (AI) makes it possible for machines to learn from experience, adapt to new inputs and perform human-like tasks. Most AI examples that you hear about today – from chess-playing computers to self-driving cars – heavily rely on deep learning and natural language processing. Using these technologies, computers can be trained to accomplish specific tasks by processing large amounts of data and recognizing patterns in the data. The aim of the course is to introduce the most important topics and current challenges both from a technological and a business point of view. Indeed, artificial intelligence has transformed the way people think, learn, and work in various areas, with every company seeking to introduce Artificial Intelligence in their domain. Studying AI and Machine Learning opens up a world of opportunities to create cutting-edge technologies in diverse sectors.

**Course Objectives**

* Introduction to Artificial Intelligent systems and techniques
* Impact of Artificial Intelligence in business, leadership, and future jobs
* Success and failures of Artificial Intelligence: how to avoid data science traps
* Introduction to the blockchain technology
* Digital transformation and Industry 4.0: is your company ready for AI and blockchain?

**Evaluation and Grading**

Students will be required to write an essay on one of the topics discussed throughout the course, to be decided beforehand with the teacher. Students will have the opportunity to work in groups.

The essay accounts for 100% of the students’ grade.

**Readings**

**Mandatory Readings:**

* Lecture notes and slides made available by the Professor during the course

**Complementary Readings:**

* Kelleher, J. D., Mac Namee, B., & D'arcy, A. (2020). *Fundamentals of machine learning for predictive data analytics: algorithms, worked examples, and case studies*. MIT Press.
* Tapscott, D., & Tapscott, A. (2016). *Blockchain revolution: how the technology behind bitcoin is changing money, business, and the world*. Penguin.
* Gilchrist, A. (2016). *Industry 4.0: the industrial internet of things*. Apress.

**Sessions**

**February 17, 2023: 12pm – 6pm**

**Course Opening:** Introduction to AI.

**Discussion of Lecture Unit 1: The AI first company**

Tracing digitization of the economy and the emerge of AI; Understanding the impact of AI on business operating models; Evolving leadership in the era of AI; Building and scaling a responsible AI framework; Ensuring privacy and cybersecurity; Avoiding algorithmic bias and managing risk related to inclusiveness and transparency; Assessing AI readiness and maturity.

**February 18, 2023: 09am – 4pm**

**Discussion of Lecture Unit 2: Automation and AI**

Compare success and failures AI; Suggest new areas of innovation for existing digital capabilities; The impact that AI and automation will have on jobs.

**February 24, 2023: 12pm – 6pm**

**Discussion of Lecture Unit 3: Disruption from AI and blockchain technologies**

What makes applications of AI and blockchain technology truly disruptive; Examine what makes an industry ready for transformation from either AI or blockchain technology.

**February 25, 2023: 09am – 4pm**

**Discussion of Lecture Unit 4: Overcoming AI challenges**Overcoming the challenge of developing strategy in today’s AI landscape; Comparing AI-first firms to traditional product and/or service-based organizations; Taking full advantage of learning effects as you scale your operations.

**About the Lecturer**

Dr. Giorgio Piccardo graduated in Computer Science at Sapienza University of Rome in 2005. Since 2016 he serves as freelance and contract engineer for several companies, universities, and startups, in positions such as full-stack web developer, software architect, smart contract developer, UI/UX designer and data analysist. Since 2018 he also serves as professional formation and mentoring for several companies.

He also served as Research Fellow (Dept. of Computer Science at Sapienza University of Rome) 2017-2018 within the EU project PRIDE.

Since 2016 he is regular lecturer at University of Rome “Tor Vergata” and since 2018 he is regular lecturer at LUISS University in Rome. His teaching background involves courses on high-level computer programming, computer science, blockchain technologies, NFT and smart contracts.