ARTIFICIAL INTELLIGENCE FOR DECISION MAKING
Course Load: 80 hours

Course Description:
The rise of Big Data and super computing power, that enables the growing importance of Artificial Intelligence, is changing the Business Landscape. This course will help students understand some AI technologies, such as Machine Learning, Deep Learning, Robotics and Natural Language Processing, that can complement and expand the interaction between humans and machines in order to improve the decision-making process.
This course aims to give an overview on different fields to which Artificial Intelligence can be applied such as Law, Healthcare, Insurance, Retail, Energy, Finance, etc. But the main focus will be on Artificial Intelligence for Business.
A final phase of this course is a group project in which students will be asked to develop a hypothesis on how Artificial Intelligence could potentially be used to transform an organization.

Objective:

At the end of the course, students will be able to:
• Recognize the current state of Artificial Intelligence
• Understand the founding different techniques applied by Artificial Intelligence
• Analyze potential applications of Artificial Intelligence to decision making

Program Content:

Case studies and discussions will cover the following themes, from not only an academic but also from big Consultancies and the World Economic Forum points of view:
• A brief history of Artificial Intelligence
• The Decision-Making Process (on a strategic, tactic and operational level)
• Taxonomy of AI techniques
• Weak, Strong and Super Artificial Intelligence
• Applied Artificial Intelligence
• The future of Artificial Intelligence
• The role of Governments and Businesses to define the limits and ethics of Artificial Intelligence.

Basic Bibliography:
Books:
AKERKAR, R. **Artificial Intelligence for Business.** Switzerland: Springer, 2019
KAPLAN, J. **Artificial Intelligence: What everyone needs to know**. New York: Oxford University Press, 2016
MARR, B. **Artificial Intelligence in Practice – How 50 successful companies used AI and Machine Learning to solve problems**. United Kingdom: Wiley, 2019

Complementary Bibliography:
Books:
DAVENPORT et al. Artificial Intelligence: The insights you need from Harvard Business Review. Boston: HBR Press, 2019
MARCHAU et al. Decision Making under Deep Uncertainty. Switzerland: Springer, 2019.
FINLAY, S. Artificial Intelligence and Machine Learning for Business. UK: Relativistic, 2017
KUBAT, M. An Introduction to Machine Learning. Switzerland: Springer, 2017
KANSI, S. Introduction to Deep Learning. Switzerland: Springer, 2018

Articles:
CHUI, M. et. al. **Notes from the AI frontier: insights from hundreds of use cases**. Mckinsey Global Institute. April, 2018
Ng, A. **WIPO Technology Trends: Artificial Intelligence***,* 2019
SHRESTA, Y. R.; BEM-MENAHEM, S. M.; KROG, G. **Organizational Decision- Making Structures in the Age of Artificial Intelligence**. California Management Review, 2019
DUAN Y., et al. **Artificial intelligence for decision making in the era of Big Data – evolution, challenges and research agenda.** Elsevier, 2019.
S. Ransbotham, S. Khodabandeh, R. Fehling, B. LaFountain, and D. Kiron, "**Winning with AI**," MIT Sloan Management Review and Boston Consulting Group, October 2019.