Course: DEEP LEARNING	**Teaching Language:** English
SSD (Subject Areas): INFO-01/A	**CREDITS:** 6
Course year: II	**Type of Educational Activity: B**

Teaching Methods:
In person

Contents extracted from the SSD declaratory consistent with the training objectives of the course:
The "Deep Learning" course aligns with various domains outlined in the declaratory of the Scientific Disciplinary Sector (SSD) INFO-01. The course delves into advanced aspects of artificial intelligence, particularly focusing on deep learning techniques, which are integral to the "machine learning" and "automatic reasoning" components mentioned in the declaratory. Students will engage with complex neural network architectures, such as convolutional and recurrent networks, which fall under the broader categories of "algorithms and data structures" and "management and analysis of data and knowledge." The course also covers the ethical implications of AI, touching upon the societal and professional aspects highlighted in the declaratory's focus on "digital transformation and IT education." Through the practical application of deep learning frameworks, students will develop skills in designing and implementing AI systems, consistent with the declaratory's emphasis on the "design, implementation, management, and use of IT systems."

Objectives:
The "Deep Learning" course aims to equip students with advanced knowledge and skills in the field of deep learning, a critical subdomain of artificial intelligence.
Through this course, students will gain a comprehensive understanding of deep learning architectures, including neural networks, convolutional networks, recurrent networks, and generative models.
They will explore the mathematical foundations that underpin these models, enabling them to design, implement, and optimize deep learning algorithms for complex, real-world problems.
The course also emphasizes the importance of practical applications, offering hands-on experience with contemporary deep learning frameworks and tools.
Additionally, students will engage with the ethical considerations surrounding the deployment of AI systems, learning to critically assess the societal impacts, biases, and ethical dilemmas that may arise in the application of deep learning technologies. By the end of the course, students will have developed the expertise necessary to independently tackle complex engineering challenges using deep learning techniques, preparing them for both industry roles and further academic research in this rapidly evolving field.

Propaedeuticities:
Is a propaedeuticity for:

Types of examinations and other tests:
Discussion of the project work.