



COURSE 4

DEEP LEARNING

Study load: 6 credits

Total study load: 150 hours

EU-Partner(s): AP, HOWEST, NUP

TC-Partner(s): MUNI, MUK

PREREQUISITES

- Data Science
- Machine Learning

STUDY MATERIALS

- Moodle course – digital course
- Presentations/videos
- Labs
- Quizzes

TECHNICAL REQUIREMENTS / LAB EQUIPMENT

- Jupyter Notebook
- Anaconda

LEARNING OUTCOMES

- The student can build and train deep neural networks
- The student can apply deep learning to specific applications

- The student can use best practices to develop a test set and analyze bias/variance
- The student can implement a neural network in Keras/TensorFlow
- The student can apply different architectures for different applications and tasks

ACTIVITIES

- Activating lectures
- Labs/project

CONTENT

- Introduction
- Pretrained Neural Networks
- Learning From Data with Keras and Tensorflow
- Convolutional Neural Networks
- Transfer Learning and Foundation Models
- Auto-encoders
- Generative Neural Networks
- Recurrent Neural Networks
- Attention & Transformers
- Introduction to Deploying a Neural Network
- Embeddings

EVALUATION

First exam chance

FORM	%	REMARK
Exam	50.00	
Project/Assignments	50.00	

Second exam chance (re-sit exam)

FORM	%	REMARK
Exam	50.00	
Project/Assignments	50.00	