FUNDAMENTALS AND BASIC TOOLS FOR DEEP LEARNING

1. SYLLABUS INFORMATION

1.1. Course title
Fundamentals and Basic Tools for Deep Learning

1.2. University
Pázmány Péter Catholic University

1.3. Semester
1st year, 1st semester

2. COURSE DETAILS

2.1. Course nature
Compulsory

2.2. ECTS Credit allotment
5

2.3. Recommendations

2.4. Faculty data
Dr. András Horváth, Dr. Kristóf Karacs

3. COMPETENCES AND LEARNING OUTCOMES

3.1. Course objectives
Knowledge
- fundamentals of machine learning
- practical methods and tools for machine learning

Skills
- application of concepts for practical tasks

3.2. Course contents
Machine learning fundamentals
Neural Network basics
Optimization techniques
Deep Learning Programming Tools
Deep Neural Networks
Deep Learning Architectures

3.3. Course bibliography
[1] Deep Learning. Ian Goodfellow, Yoshua Bengio and Aaron Courville. MIT Press, 2016. http://www.deeplearningbook.org/

[2] Neural Networks and Deep Learning. Michael Nielsen. Online book, 2016. http://neuralnetworksanddeeplearning.com/
[3] Hands-On Machine Learning with Scikit-Learn and TensorFlow. Aurelien Geron. O'Reilly, 2017.
[4] Deep Learning with Python. Francois Chollet. Manning, 2017.

4. TEACHING-AND-LEARNING METHODOLOGIES AND STUDENT WORKLOAD

4.1. Contact hours

	Hours
Classroom instruction (minimum 33%)	48
Independent study time	48

4.2. List of training activities

Activity	Hours
Lectures	36
Practice	0
Computer lab	12
Assessment activities	4

5. EVALUATION PROCEDURES AND WEIGHT OF COMPONENTS IN THE FINAL GRADE

5.1. Regular assessment

5.2. List of evaluation activities

Evaluatory activity	%
Final exam	50
Midterm	25
Programming assignments/classroom activities	25