



AGH UNIVERSITY OF SCIENCE  
AND TECHNOLOGY

# Artificial Intelligence

## Introduction to the Course

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# Outline

## 1 Course Rules



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## Teachers' Data



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## Purpose of the Course

- To get knowledge on the basic problems in artificial intelligence (AI) and machine learning (ML):
  - main approaches,
  - mathematical background,
  - usage of the related tools.
- To exercise to prepare and give presentations, moderate discussions, etc.
- To practice in implementation of algorithms.

## How to Get a Credit (1)

- TEN meetings:
  - THREE (3) introductory meetings led by the teachers (today: course rules, and presentations on basic introduction to various methods of AI/ML, subsequently — the mathematical fundamentals),
  - TWELVE (12) seminar meetings led by the students (there are  $48 = 2 \times 12 \times 2$  students).
- The schedule will be presented at the course webpage when finalized (with your help).
- Presence is obligatory (up to 40% of absences are acceptable).



## How to Get a Credit (2)

- You are given a pre-selection of topics. You can pick one for you.
- If you select a suggested topic, search for information wherever you want, but some obligatory issues are provided and you should present them. In case you have problems with finding proper sources, contact the teachers — you will be provided with readings (most likely, some books).
- Attendants should divide to groups of two persons and then prepare the seminar meeting (presentation, some computer illustration/exercises and discussion on selected topics).
- If you are well acquainted with some topics, it is advisable to pick something you do not know — then you learn something new 😊
- You can propose a topic on your own: contact the teachers.

## How to Get a Credit (3)

- Duties of the group leading a seminar meeting:
  - Presentation slides must be prepared in the  $\text{\LaTeX}$  **beamer class**: the template is given at the [course webpage](#).
  - A set of slides must be sent to the teachers at least **two weeks** prior to the scheduled presentation (except for the first seminar meeting's presentation organized by the students).

# How to Get a Credit (4)

## What Should be Done

- 'Theoretical presentation' with the slides (at least 45 min.):
  - Concept of a specific method of AI/ML: a detailed presentation with examples of usage.
  - Mathematics behind the concept.
- 'Practical part' with use of computers (at least 30 min.):
  - Live example(s) of use, configuration or application of the concept (e.g. a tutorial on 'how to do that on your own with Python').
  - Use whatever software you would like (e.g., Python, R, Julia, Matlab. . . ), but we have to use the student's own computers, thus inform them before and try to use methods that will be understood.
- Discussion, sharing of experience of the classmates, teachers, etc. (approx. 15 min.).

## How to Get a Credit (5)

- The **regular and advisable** method to obtain the credit:
  - Leading a seminar meeting on the **scheduled topic** given to the classmates.
  - Provisioning of the slides to the teachers **on time** (Wednesday, 11.59<sup>PM</sup>, two weeks prior to the presentation), in the **required format** and at an appropriate quality level.
  - Taking into account the suggestions given by the teachers (before the seminar) with respect to the initial version of the presentation.

## How to Get a Credit (6)

- Grade: based on the assessment of the teacher(s) and the group:

$$\max\{t, c\}, \quad \text{where:}$$

- $t$ : is the grade proposed by the teacher(s),
- $c$ : is the median of the grades proposed by other participants (your classmates) of the course (Google Forms will be used for voting).

## How to Get a Credit (7)

- The **irregular and non-desirable** way to obtain the credit:
  - Necessary when a student fails to conform to **any** of the previously given conditions.
  - Still: necessity to lead a seminar meeting on the **scheduled topic** to the classmates (most probably the group will be forced to find an additional time slot for a meeting!).
  - Obligation to **pass a test** covering **all** the topics of the seminar (15 questions, 30 minutes).
- Grade: according to the test results.

## How to Get a Credit (8)

### Project:

- Groups of 3–4 students.
- Practical application of AI/ML concepts in the ICT field.
- First meetings with the teachers: no later than March, 31<sup>st</sup> .
- Information on the course webpage.

## Next Steps

- The given Google Docs file [Topics for Artificial Intelligence](#) covers the topics (note that the topics are given for the both groups, i.e., they are likely not to duplicate!).
- The deadline for the declarations: **Tuesday, March 13<sup>th</sup>, 11.59<sup>PM</sup>**. Then, the teacher fixes the schedule of the presentations.
- The presentations are performed in the order given in the file. The non-covered topics are just skipped.
- The final schedule with the presenters will be given at the teacher's webpage.
- The first seminar meeting led by the students: **Wednesday, March 21<sup>st</sup>**.
- The first presentations must be sent to the teachers a week before (**exceptionally!**), on **Wednesday, March 14<sup>th</sup>, 11.59<sup>PM</sup>**.



**Any questions, comments?**

**Thank you for your  
attention!**