



Syllabus of the course "Machine learning"

Speciality	<i>D3 Management F6 Information Systems and Technologies</i>
Study Programme	<i>Management and Information Technologies</i>
Study cycle (Bachelor, Master, PhD)	<i>The first (Master's) level of higher education</i>
Course status	<i>mandatory</i>
Language	<i>English</i>
Term	<i>1 year, 2 semester</i>
ECTS credits	<i>5</i>
Workload	<i>Lectures – 30 hours.</i>
	<i>Laboratory classes – 30 hours.</i>
	<i>Self-study – 90 hours.</i>
Assessment system	<i>Grading including Exam</i>
Department	<i>Department of Informatics and computer technologies, Nauky Avenue 9-A, c. Kharkiv, main building, auditorium 405 Phone: +38(057)702-06-74 (additional 438) website: http://www.kafikt.hneu.edu.ua/</i>
Teaching staff	<i>Oleksii GOROKHOVATSKYI, PhD (Technical Sciences), associated professor</i>
Contacts	<i>oleksii.gorokhovatskyi@gmail.com</i>
Course schedule	<i>Lectures: according to schedule</i>
	<i>Laboratory classes: according to schedule</i>
Consultations	<i>face-to-face sessions in accordance with the consultation timetable; individual sessions, chat via the PNS and Zoom</i>

Learning objectives and skills:

*The course **aims** to provide students with a system of theoretical knowledge, practical skills and abilities for working with machine learning classic methods and algorithms to solve classification, regression and clustering problems.*

Structural and logical scheme of the course

Prerequisites	Postrequisites
Applied programming project	Digital business modelling Scientific and research practice

Course content

Content module 1. Machine learning

Topic 1. AI landscape.

Topic 2. KNN and linear regression

Topic 3. Logistic regression.

Topic 4. Clustering.

Topic 5. Decision trees and their applications.

Content module 2. Artificial neural networks and deep learning

Topic 6. Artificial neural network (ANN) introduction.

Topic 7. Introduction to deep learning.

Teaching environment (software)

Multimedia projector, Python programming environment, MS Office (or alternative text/table editors), S. Kuznets PNS, Corporate Zoom system



Assessment system

Assessment of students' learning outcomes is carried out by the University according to the cumulative 100-point system.

Current control is carried out during lectures and practical (seminar) classes and aims to assess the level of students' readiness to perform particular tasks, and is assessed by the amount of scored points.

The maximum amount during the semester – 60 points; the minimum amount required is 35 points. Final control is carried out at the end of the semester in the form of an exam (the maximum amount is 40 points, the minimum amount required is 25 points).

Current control includes the following assessment methods: assignments on a particular topic; testing; presentations, and essay writing.

More detailed information on assessment and grading system is given in the technological card of the course.

Course policies

Teaching of the academic discipline is based on the principles of academic integrity.

Violation of academic integrity includes academic plagiarism, fabrication, falsification, cheating, deception, bribery, and biased assessment.

Education seekers may be brought to the following academic responsibility for breach of academic integrity: repeated assessment of the corresponding type of learning activity.

More detailed information about competencies, learning outcomes, teaching methods, assessment forms, self-study is given in the Course program