



Univerza v Mariboru
University of Maribor

Medicinska fakulteta
Faculty of Medicine



OPIS PREDMETA / SUBJECT SPECIFICATION

Predmet:	Metode umetne inteligence
Subject Title:	Artificial intelligence methods

Študijski program Study programme	Študijska smer Study field	Letnik Year	Semester Semester
Biomedicinska tehnologija		2	3 ali 4

Univerzitetna koda predmeta / University subject code:

Predavanja Lectures	Seminar Seminar	Sem. vaje Tutorial	Lab. vaje Lab. work	Teren. vaje Field work	Samost. delo Individ. work	ECTS
15	30				105	5

Nosilec predmeta / Lecturer:

Prof.dr. Nikola Guid

Jeziki /

Predavanja / Lecture: Slovenščina, English

Languages:

Vaje / Tutorial: Slovenščina, English

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:

Prerequisites:

Kandidat mora doseči 300 ECTS na predhodnem študiju.

Graduate degree 300 ECTS

Vsebina:

Contents (Syllabus outline):

Predikatna logika
Avtomatsko sklepanje z resolucijsko ovrzbo
Statistično in verjetnostno sklepanje
Sistemi, temelječi na znanju (ekspertni sistemi)
Umetne nevronske mreže
Multiagentni sistemi

Predicate calculus
Automatic reasoning
Statistical and probabilistic reasoning
Knowledge-based systems (expert systems)
Artificial neural networks
Multi-agent systems

Temeljni študijski viri / Textbooks:

Russell, S. J., Norvig, P. Artificial Intelligence: a Modern Approach. 2nd Edition, Addison Wesley, 2002.
Nilsson, N. J. Artificial Intelligence: a New Synthesis. Morgan Kaufmann, San Francisco, 1998.
Haykin, S. Neural Networks. A Comprehensive Foundation. Macmillan College Publishing Company, New York, 1994.
Wooldridge, M. Introduction to MultiAgent Systems, John Wiley & Sons, 2002.

Cilji:

Objectives:

Predikaten račun in delovanje avtomatskih sistemov sklepanja, temelječih na resolucijski ovrzbi. Delovanje ekspertnih sistemov, njihove prednosti in slabosti. Lastnosti umetnih nevronske mreže in njihova uporaba v medicini. Multiagentni sistemi.

Predicate calculus and working of automatic reasoning systems based on refutation. Acquainted with working of expert systems, their benefits and deficiencies. Artificial neural network properties and their use in medicine. Multi-agent systems.

Predvideni študijski rezultati:

Intended learning outcomes:

Znanje in razumevanje:
predikatnega računa, avtomatskih sistemov sklepanja, temelječih na resolucijski ovrzbi, ekspertnih sistemov, umetnih nevronske mreže in multiagentnih sistemov

Knowledge and Understanding:
predicate calculus, automatic reasoning systems based on refutation, expert systems, artificial neural networks, multi-agent systems

Prenesljive/ključne spretnosti in drugi atributi:
Študent pridobi specialna znanja o umetni
nevronski mreži, o multiagentnih sistemih, itd.

Transferable/Key Skills and other attributes:
Student gets special knowledge about artificial
neural networks, about multi-agent systems, etc.

Metode poučevanja in učenja:

Predavanja
Uporaba apletov
Izdelava seminarskega dela
Konsultacije

Learning and teaching methods:

Teaching
Use of applets
Seminar work
Consultations

Načini ocenjevanja:

Delež (v %) /
Weight (in %)

Assessment:

Ustno izpraševanje
Seminarsko delo

Oral examination
Seminar work

Materialni pogoji za izvedbo predmeta :

Osebni računalniki
Ustrezna programska oprema

Material conditions for subject realization

Personal computers
Corresponding software

Obveznosti študentov:

(pisni, ustni izpit, naloge, projekti)

Ustni izpit
Seminarska naloga

Students' commitments:

(written, oral examination, coursework, projects):

Oral examination
Seminar work