KARTA PRZEDMIOTU

I. Dane podstawowe

Nazwa przedmiotu	Sztuczna inteligencja
Nazwa przedmiotu w języku angielskim	Artificial intelligence
Kierunek studiów	Informatyka, matematyka
Poziom studiów (I, II, jednolite magisterskie)	I-go stopnia
Forma studiów (stacjonarne, niestacjonarne)	stacjonarne
Dyscyplina	Informatyka, matematyka
Język wykładowy	język angielski

Koordynator przedmiotu/osoba odpowiedzialna	Dr hab. R. Kozera, mgr Michał Horodelski

Forma zajęć *(katalog zamknięty ze słownika)*	Liczba godzin	semestr	Punkty ECTS
wykład	30	INF: IV, MAT: IV lub VI	INF: 5 MAT: 5
konwersatorium			
ćwiczenia			
laboratorium	30	INF: IV, MAT: IV lub VI	
warsztaty			
seminarium			
proseminarium			
lektorat			
praktyki			
zajęcia terenowe			
pracownia dyplomowa			
translatorium			
wizyta studyjna			

Wymagania wstępne	1. Logic. Propositional logic. Predicate logic. 2. Linear algebra and analytic geometry. 3. Discrete mathematics. 4. Introduction to computer science.

II. Cele kształcenia dla przedmiotu

1. Familiarize students with the basics of proving the truth of sentences and formulas, truth table, application of inferences and refutation in the area of artificial intelligence
2. Familiarize students with declarative programming in a selected programming language
3. Familiarize students with automation of theorem proving.
4. Exercises with documentation
5. Application of artificial intelligence methods

III. Efekty uczenia się dla przedmiotu wraz z odniesieniem do efektów kierunkowych

Symbol	Opis efektu przedmiotowego	Odniesienie do efektu kierunkowego
WIEDZA		
W_01	The student understands the meaning of computer science in the area of artificial intelligence	INF: K_W01; MAT: K_W01
W_02	The student has a basic knowledge in the area of artificial intelligence	INF: K_W06; MAT: K_W04
UMIEJĘTNOŚCI		
U_01	The student has the ability to search and to use knowledge in order to solve defined informatics problems (especially in the area of AI) using documentation, help files, Internet and literature	INF: K_U02; MAT: K_U38
U_02	The student is able to use specialized vocabulary in the area of computer science and artificial intelligence	INF: K_U04; MAT: K_U38
U_03	The student is able to apply basic recursive algorithms, searching algorithms, sorting algorithms and implementing them in declarative programming language and chosen programming environment	INF: K_U09; MAT: K_U38
U_04	The student can apply data structures, implement data structures and use them	INF: K_U10; MAT: K_U38
U_05	The student is able to use basic issues of artificial intellgience	INF: K_U16; MAT: K_U38
U_06	The student can use mechanisms supporting decision making to solve practical problems	INF: K_U23; MAT: K_U38
KOMPETENCJE SPOŁECZNE		
K_01	The student is aware of the level of his knowledge and ability. He understands the need for continuous improvement of qualifications.	INF: K_K01; MAT: K_K02
K_02	The student can communicate using various techniques in a professional environment.	INF: K_K07; MAT: K_K02

IV. Opis przedmiotu/ treści programowe

1.Introduction to Artificial Intelligence.
2 Classical calculus in the AI.
3 Predicate calculus on the AI.
4 The unification algorithm.
5 Programming in Prolog. Lists.
6 The Herbrand theory .
7 Searching and SLD trees.

V. Metody realizacji i weryfikacji efektów uczenia się

Symbol efektu	Metody dydaktyczne *(lista wyboru)*	Metody weryfikacji *(lista wyboru)*	Sposoby dokumentacji *(lista wyboru)*
WIEDZA			
W_01	- conventional lecture,	- written exam,	- written work,

	- individual work with computer, - teaching methods supported by information techniques, - discussion, - problem method, - academic classes in laboratory equipped with projector,	- test, - project, - preparation for classes	- folder of files, - report
W_02	- conventional lecture, - individual work with computer, - teaching methods supported by information techniques, - discussion, - problem method, - academic classes in laboratory equipped with projector,	- written exam, - test, - project, - preparation for classes	- written work, - folder of files, - report
UMIEJĘTNOŚCI			
U_01	- individual work with computer, - teaching methods supported by information techniques, - problem method, - academic classes in laboratory equipped with projector,	- written exam, - test, - project, - preparation for classes	- written work, - folder of files, - report
U_02	- conventional lecture, - teaching methods supported by information techniques, - discussion, - problem method, - academic classes in laboratory equipped with projector,	- written exam, - test, - project, - preparation for classes	- written work, - folder of files, - report
U_03	- conventional lecture, - individual work with computer, - teaching methods supported by information techniques, - discussion, - problem method, - academic classes in laboratory equipped with projector,	- written exam, - test, - project, - preparation for classes	- written work, - folder of files, - report

U_04	- conventional lecture, - individual work with computer, - teaching methods supported by information techniques, - discussion, - problem method, - academic classes in laboratory equipped with projector,	- written exam, - test, - project, - preparation for classes	- written work, - folder of files, - report
U_05	- conventional lecture, - individual work with computer, - teaching methods supported by information techniques, - discussion, - problem method, - academic classes in laboratory equipped with projector,	- written exam, - test, - project, - preparation for classes	- written work, - folder of files, - report
U_06	- conventional lecture, - individual work with computer, - teaching methods supported by information techniques, - discussion, - problem method, - academic classes in laboratory equipped with projector,	- written exam, - test, - project, - preparation for classes	- written work, - folder of files, - report
U_07	- conventional lecture, - individual work with computer, - teaching methods supported by information techniques, - discussion, - problem method, - academic classes in laboratory equipped with projector,	- written exam, - test, - project, - preparation for classes	- written work, - folder of files, - report
KOMPETENCJE SPOŁECZNE			
K_01	- conventional lecture, - teaching methods supported by information techniques, - discussion, - problem method,	- work and activity during laboratories and lectures	register of bonus points

	- academic classes in laboratory equipped with projector,		
K_02	- conventional lecture, - individual work with computer, - teaching methods supported by information techniques, - discussion, - problem method, - academic classes in laboratory equipped with projector,	- work and activity during laboratories and lectures	register of bonus points

VI. Kryteria oceny, wagi…

CLASSES:
Passing the classes: tests (50% of final evaluation) and group project to complete (50% of final evaluation).
Grading scale: below 50% fail (2.0).
Detailed assessment rules are given to students with each subject edition.
LECTURE:
Written exam (for students which pass classes).
Grading scale: 50%-57% sufficient (3.0), 58%-64% satisfactory (3.5), 65%-72% good (4.0), 73%-80% very good (4.5), above 80% excellent (5.0), below 50% fail (2.0)

VII. Obciążenie pracą studenta

Forma aktywności studenta	Liczba godzin
Liczba godzin kontaktowych z nauczycielem	Lecture 30, Classes 30, Consultations 30,
Liczba godzin indywidualnej pracy studenta	Preparation for classes 30, Studying literature 20, Preparation for the test and exam 25,

VIII. Literatura

Literatura podstawowa
1. R. Kozera, "Artificial Intelligence and Logic Programming" - lecture 2. G. Royle, "Logic programming", 1999 3. M. Ben-Ari, „Mathematical Logic for Informatics”, 2006
Literatura uzupełniająca
1. J. Wielemaker, "SWI Prolog 2.7 Reference Manual", Updated for version 2.7.14, September 1996, University of Amsterdam, Dept. of Social Science Informatics 2. SWI Prolog Documentation, link: swi-prolog.org (16.12.2017) 3. James Lu, Jeru d J. Mead, „Prolog. A Tutorial Introduction”, Computer Science Department Bucknell University, Lewisburg, PA 17387. 4. Leon S. Sterling, Ehud Y. Shapiro, „The Art of Prolog, Second Edition. Advanced Programming Techniques”, MIT Press, 1994 5. William F.Clocksin, Christopher S. Mellish, „Programming in Prolog. Using ISO Standard. Fifth Edition”, Springer-Verlag Berlin Heidelberg 2003