COURSE OUTLINE

(1) GENERAL

SCHOOL	
ACADEMIC UNIT	**Interdisciplinary Graduate Programme in the BRAIN and MIND sciences**
LEVEL OF STUDIES	7
COURSE CODE	**CS-487** SEMESTER **Spring**
COURSE TITLE	Introduction to Artificial Inteligence

INDEPENDENT TEACHING ACTIVITIES *if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*	WEEKLY TEACHING HOURS	CREDITS
lectures	4	6
tutorials	2	
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).		

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	Special background
PREREQUISITE COURSES:	CS-240 (Data Structures), CS-180 (Logic) or equivalent
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	English
IS THE COURSE OFFERED TO ERASMUS STUDENTS	YES
COURSE WEBSITE (URL)	https://elearn.uoc.gr/course/view.php?id=4690 (Note: Each year, a new course webpage is created on *elearn*)

(2) LEARNING OUTCOMES

Learning outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A
- *Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B*
- *Guidelines for writing Learning Outcomes*

- Understanding of the broader field, subject matter, and techniques of symbolic Artificial Intelligence based on mathematical logic and search.
- Understanding of the basic algorithmic techniques and the theory of search problems, problem-solving algorithms, games, knowledge representation, and automated reasoning using mathematical logic.
- Understanding of the challenges involved in applying artificial intelligence.

Upon successful completion of the course, students:
- Demonstrate an overall appreciation of the philosophy of the field, its problems, its significance, and the algorithmic and theoretical contributions of the field to science.
- Are able to solve problems in other domains where AI is applied.

- Search for, analysis and synthesis of data and information, with the use of the necessary technology
- Working independently
- Criticism and self-criticism
- Production of free, creative and inductive thinking

(3) SYLLABUS

Chapters 1-9 & 11 of the book Artificial Intelligence: A Modern Approach, 4th US ed. by RUSSELL STUART, NORVIG PETER and material for programming in Prolog and ontologies. Specifically:

- Introduction to Artificial Intelligence as a research field, including the philosophy and history of AI
- Intelligent agents
- Problem solving with search
- Informed search and exploration
- Constraint satisfaction problems
- Adversarial search
- Constraint satisfaction problems (duplicate entry in original list)
- Logical agents
- First-order logic
- Inference in first-order logic
- Knowledge representation, ontologies, and programming in Prolog
- Automated planning

(1) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	Face-to-face
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	• Use of slides/films for teaching • Use of an online platform for posting lectures and assignments • Communication via the course website and email

TEACHING METHODS *The manner and methods of teaching are described in detail.* *Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.* *The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS*	Activity	Semester workload
	Lectures	52
	Tutorials	0
	Study	52
	Exercises/labs	40
	Final project	18
	Exams	4
	Course total	*166*

| **STUDENT PERFORMANCE EVALUATION**
Description of the evaluation procedure

Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other

Specifically-defined evaluation criteria are given, and if and where they are accessible to students. | Language: English.

Written examination (oral examination in special cases, e.g., students with dyslexia)
Assignment sets
Final project
A passing grade is required.

The evaluation criteria are explicitly stated in the Study Guide and communicated to students at the beginning of the course. |

(2) ATTACHED BIBLIOGRAPHY

• Artificial Intelligence: A Modern Approach, 4th US ed. by RUSSELL STUART, NORVIG PETER