Program	Level	Third cycle
	Name of the program	SEE Doctoral Studies in Mathematical Science

COURSE

Course title	**Intelligent systems**			
Course code	Semester	Course status	ECTS	Contact hours (L+AE+LE)
CS 610	I	**Elective course**	10	30
Lecturer				
Course Goals	The objective of the course is for the student to define advanced concepts of artificial intelligence, symbolic and connectionist approaches to artificial intelligence, implement various search algorithms, as well as nature-inspired optimization and apply them to multiple problems. Also, apply logic programming to solve logical problems, implement automatic inference procedures and apply them to analytical issues, and compare different approaches to representing fuzzy knowledge. In addition, evaluate the applicability of specific artificial intelligence approaches, and summarize the possibilities, limitations and philosophical aspects of artificial intelligence on a given problem. Develop and introduce new algorithms in various fields of intelligent systems.			

COURSE CONTENT

- Fundamentals of artificial intelligence: philosophical, mathematical and computational aspects.
- Intelligent agents.
- Solving problems by searching.
- Advanced searches of space.
- Knowledge, reasoning and planning.
- Computer games.
- Reasoning with propositional and predicate logic.
- Logic programming in Prolog.
- Representation of knowledge.
- Imprecise knowledge and reasoning.
- Learning.
- Fuzzy logic, modal logic and reasoning.
- Neural networks.
- 14. Machine learning.

LITERATURE

[1] Russel, Norvig: Artificial Intelligence: Modern Approach(2ndedition), Prentice Hall, 2002
[2] Mitchell: Machine Learning, McGraw Hill, 1997
[3] James A. Freeman, David M.Skapura: NeuralNetworks, Algorithms, Applications, an Programming Techniques, Addison-Wesley, 2001

GRADING

	Criterion	Maximum points	Minimum points
1.	Assigments		
2.	Projects	40	20
3.	Final exam	60	35
	Total	100	55