Department assigned to the subject:
Coordinating teacher: BERLANGA DE JESUS, ANTONIO
Type: Electives ECTS Credits : 3.0
Year : 1 Semester : 2

## OBJECTIVES

The learner will acquire strategies for:
How to model a multi-objective problem.
How to define the parameters of an experiment.
Perform simulations in virtual environments.

## DESCRIPTION OF CONTENTS: PROGRAMME

Al Optimization Techniques
Practical applications of optimization
Al techniques for modeling
Real world applications modeled with AI
Simulation as a tool for system evaluation
Integration of Al techniques in simulation: modeling and evaluation
Design and evaluation of complex systems
Process mining
Multiobjective Optimization

## LEARNING ACTIVITIES AND METHODOLOGY

Presentation and round table of student work.
Practical implementation using the computer.

## ASSESSMENT SYSTEM

There will be weekly homeworks with both written and programming parts.
Extraordinary Examination:
Final Exam

## \% end-of-term-examination:

\% of continuous assessment (assigments, laboratory, practicals...): 100

BASIC BIBLIOGRAPHY

- Carlos A. Coello Coello and Gary B. Lamont. Applications of Multi-Objective Evolutionary Algorithms, World Scientific, 2004
- Diana Perez-Marin and Ismael Pascual-Nieto Conversational Agents and Natural Language Interaction: Techniques and Effective Practices, IGI Global, 2011
- Jack P. C. Kleijnen, Susan M. Sanchez, Thomas W. Lucas, and Thomas M. Cioppa State-of-the-Art Review: A User's Guide to the Brave New World of Designing Simulation Experiments., INFORMS J. on Computing 17, 3 (July 2005), 2005
- Joshua Knowles, David Corne, Kalyanmoy Deb Multiobjective Problem Solving from Nature: From Concepts to Applications, Springer,, 2008
- Montgomery, D.C Design and Analysis of Experiments, Wiley, 2013
- W.M.P. van der Aalst, Process Mining: Discovery, Conformance and Enhancement of Business Processes, Springer , 2011

