

Course Syllabi

CODE 305

NAME Intelligent Systems

Credits 6 ECTS

Period Fall Semester

Course Specifications

Lectures, written exercises, individual work, programming laboratory practices.

Objectives and contents

This is a first course in Artificial Intelligence (AI). AI is ‘the art of creating machines that perform functions that require intelligence when performed by people’ (Kurzweil, 1990). The aim is to provide a knowledge of the fundamental techniques of present AI and also some fluency in the use of Python and some of its libraries. Course contents include fundamental concepts in: supervised learning; decision trees; linear and logistic regression; artificial neural networks; search and problem solving.

Assessment

The assessment will be based on the following elements,

- 1) One voluntary midterm exam, taken during a class session and comprising part A of the subject's theory lessons.
- 2) A final exam (compulsory for each assessment period). The exam will be divided into three parts. The first will comprise the same part A evaluated in the voluntary midterm exam. The second part will comprise part B of the subject's theory lessons. The third part (part C) will comprise the content of the lab lessons. Students that obtained a mark equal or higher than 5 (out of 10) in the midterm exam will not take part A. The exams will assess theoretical and practical knowledge of the subject, analytical and synthesis skills, correct use of language, order of presentation, etc. All exam grades will be expressed between 0 and 10 points. If a student does not show up for an exam (or part of an exam), their grade will be zero points for that exam (or part of the exam).

To calculate the grade, the following variables are defined,

PartiaMarkA = Mark for the first midterm exam (part A of the course).

FinalMarkA = Mark for part A of the final exam.

MarkB = Mark for part B of the final exam.

MarkC = Mark for part C of the final exam.

AttendedA = Has taken part A of the final exam.

MarkA = IF NOT AttendedA AND (PartialMarkA $\geq$ 5), THEN PartialMarkA ELSE FinalMarkA

It will be sufficient and necessary condition to receive a grade in one of the assessment periods, to take the final exam of that period. The grade for the first assesment period will be calculated as follows:

To pass the course, the following condition must be met,

$(\text{MarkA} \geq 3) \text{ AND } (\text{MarkB} \geq 3) \text{ AND } (\text{MarkC} \geq 3) \text{ AND } (2 * \text{MarkA} + \text{MarkB} + \text{MarkC}) / 4 \geq 5$

If the course is passed, the overall grade is,

$(2 * \text{MarkA} + \text{MarkB} + \text{MarkC}) / 4$

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The exams for the second assessment period will cover for each student all parts not passed in the first assessment period, that is, students will need to resit only for those parts (A,B,C) with a mark lower than 5 in the midterm or final exams. This way, new marks (MarkA, MarkB and MarkC) will be obtained as needed, and the same rules for the first assesment period stated above will apply. For the extraordinary assessment period there is a single exam comprising all parts, and to pass the course the overall grade needs to be at least 5. The same rules will apply to students granted by the University with part-time or high-level athlete status.

The use in the exams of programmable calculators, mobile phones or any other similar smart devices (including, but not limited to, smart watches or glasses) is explicitly not allowed. In any case, these items will need to be out of the student's reach (inside a closed backpack or similar item). The use of non-programmable calculators will be allowed only when explicitly mentioned in the exam. Non-compliance with these norms will result in a 'fail' evaluation in the exam.

Lecturers

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