SUBJECT TEACHING GUIDE

G687 - Natural Language Processing

Degree in Computer Systems Engineering

Academic year 2022-2023

1. IDENTIFYING DATA				
Degree	Degree in Computer Systems Engineering		Type and Year	Optional. Year 4
Faculty	Faculty of Sciences			
Discipline	Subject Area: Computing Mention in Computing			
Course unit title and code	G687 - Natural Language Processing			
Number of ECTS credits allocated	6	Term	Semester based (2)	
Web				
Language of instruction	English		Mode of delivery	Face-to-face

Department	DPTO. MATEMATICAS, ESTADISTICA Y COMPUTACION
Name of lecturer	CRISTINA TIRNAUCA
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Other lecturers	

3.1 LEARNING OUTCOMES

- This course covers a broad range of topics in natural language processing, including word and sentence tokenization, text classification and sentiment analysis, spelling correction, part-of-speech tagging, parsing, meaning extraction and question answering. At the end of this course, the student should be able to understand the mechanisms needed to build natural language processing systems.

4. OBJECTIVES

Distinguish between natural and artificial languages.
Understand the intrinsic complexity of human language.
Become familiar with linguistic terminology.
Knowing the most used algorithms, techniques and methods for the automatic processing of lexical, sintactical and semantical phenomenas of human language.
Understand that the natural language processing cannot be fully automated. Nevertheless, good enough solutions can be developed in practice.
Identify the aspects that should be further studied in order to obtain better natural language processing systems.
Reflecting on the progress made in the field and the mistakes made over the past decades.

6. COURSE ORGANIZATION

CONTENTS	
1	Theory and problems
1.1	Introduction to natural language processing.
1.2	Basic text processing.
1.3	Language modelling and spelling correction.
1.4	Text classification and sentiment analysis.
1.5	Information retrieval.
1.6	Lexical analysis.
1.7	Syntactic analysis.
1.8	Semantic analysis.
1.9	Review of the most important concepts studied.
2	Individual project
3	Final Exam

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Final exam	Written exam	Yes	Yes	50,00
Final project	Work	No	Yes	20,00
Team work on practical applications	Work	No	Yes	20,00
Problems	Activity evaluation with Virtual Media	No	Yes	10,00
TOTAL				100,00

Observations

The grade obtained during the course is taken into consideration only for the ordinary examination session. In the extraordinary examination session, the exam has a 100% weight.

Observations for part-time students

For those students that could not follow the continuous evaluation due to a justified reason (part-time students), the exam has a 100% weight (in both ordinary and extraordinary sessions).

8. BIBLIOGRAPHY AND TEACHING MATERIALS
BASIC
Speech and Language Processing (2nd edition). Daniel Jurafsky, James H. Martin. 2014