

## COURSE OUTLINE

### (1) GENERAL

<b>SCHOOL</b>	PHILOSOPHY		
<b>ACADEMIC UNIT</b>	PHILOLOGY		
<b>LEVEL OF STUDIES</b>	Undergraduate		
<b>COURSE CODE</b>	<b>GLOF142</b>	<b>SEMESTER</b>	<b>3-83</b>
<b>COURSE TITLE</b>	Introduction to Computational Linguistics		
<b>INDEPENDENT TEACHING ACTIVITIES</b> <i>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</i>	<b>WEEKLY TEACHING HOURS</b>	<b>CREDITS</b>	
	3	5	
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
<b>COURSE TYPE</b> <i>general background, special background, specialised general knowledge, skills development</i>	SCIENTIFIC AREA OF SPECIALIZATION		
<b>PREREQUISITE COURSES:</b>	GLOF100, GLOF175		
<b>LANGUAGE OF INSTRUCTION and EXAMINATIONS:</b>	Greek		
<b>IS THE COURSE OFFERED TO ERASMUS STUDENTS</b>	Yes (in Greek)		
<b>COURSE WEBSITE (URL)</b>	<a href="https://elearn.uoc.gr/">https://elearn.uoc.gr/</a>		

### (2) LEARNING OUTCOMES

<p><b>Learning outcomes</b></p> <p><i>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.</i></p> <p><i>Consult Appendix A</i></p> <ul style="list-style-type: none"> <li>• <i>Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area</i></li> <li>• <i>Descriptors for Levels 6, 7 &amp; 8 of the European Qualifications Framework for Lifelong Learning and Appendix B</i></li> <li>• <i>Guidelines for writing Learning Outcomes</i></li> </ul>

The main course objective is students' familiarization with the basic principles of Computational Linguistics, both on a theoretical, as well as a practical level. Specifically, upon completion of the course, students should be able to:

- 1) Know the basic principles and issues in Computational Linguistics
- 2) Are familiar with basic concepts and mathematical methods widely used in Computational and Formal Linguistics such as the basics of Set Theory, Mathematical Logic and Probability Theory
- 3) Have a basic understanding of programming with Python
- 4) Implement small-scale natural language processing tasks/projects in Python

### General Competences

*Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?*

<i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i>	<i>Project planning and management</i>
<i>Adapting to new situations</i>	<i>Respect for difference and multiculturalism</i>
<i>Decision-making</i>	<i>Respect for the natural environment</i>
<i>Working independently</i>	<i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i>
<i>Team work</i>	<i>Criticism and self-criticism</i>
<i>Working in an international environment</i>	<i>Production of free, creative and inductive thinking</i>
<i>Working in an interdisciplinary environment</i>	<i>.....</i>
<i>Production of new research ideas</i>	<i>Others...</i>
	<i>.....</i>

*Search for, analysis and synthesis of data and information, with the use of the necessary technology*  
*Working independently*  
*Working in an international environment*  
*Decision-making*  
*Production of free, creative and inductive thinking*  
*Working in an interdisciplinary environment*  
*Team work*

### (3) SYLLABUS

The course has both a theoretical and a practical part. In the theoretical part, the basic methods, algorithms and techniques used in Computational Linguistics are introduced, while in the practical part, programming using Python is introduced, initially at a general level, i.e. by

presenting the basic principles and structures behind the language, and later on more specifically by implementing small computer projects with reference to various levels of linguistic analysis and/or practical applications to which they refer to.

#### (4) TEACHING and LEARNING METHODS - EVALUATION

<p><b>DELIVERY</b> <i>Face-to-face, Distance learning, etc.</i></p>	Face-to-face																							
<p><b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b> <i>Use of ICT in teaching, laboratory education, communication with students</i></p>	<ul style="list-style-type: none"> <li>• Class lectures, presentations, slides (pdf)</li> <li>• Class notes, announcements &amp; communication via ClassWeb</li> <li>• Communication via email</li> </ul>																							
<p><b>TEACHING METHODS</b> <i>The manner and methods of teaching are described in detail.</i> <i>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.</i></p> <p><i>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</i></p>	<table border="1"> <thead> <tr> <th data-bbox="630 993 954 1024"><b>Activity</b></th> <th data-bbox="963 993 1289 1024"><b>Semester workload</b></th> </tr> </thead> <tbody> <tr> <td data-bbox="630 1024 954 1056">Lectures</td> <td data-bbox="963 1024 1289 1056">39</td> </tr> <tr> <td data-bbox="630 1056 954 1119">Independent study and exam preparation</td> <td data-bbox="963 1056 1289 1119">83</td> </tr> <tr> <td data-bbox="630 1119 954 1150">Final written exam</td> <td data-bbox="963 1119 1289 1150">3</td> </tr> <tr> <td data-bbox="630 1150 954 1182"></td> <td data-bbox="963 1150 1289 1182"></td> </tr> <tr> <td data-bbox="630 1182 954 1213"></td> <td data-bbox="963 1182 1289 1213"></td> </tr> <tr> <td data-bbox="630 1213 954 1245"></td> <td data-bbox="963 1213 1289 1245"></td> </tr> <tr> <td data-bbox="630 1245 954 1276"></td> <td data-bbox="963 1245 1289 1276"></td> </tr> <tr> <td data-bbox="630 1276 954 1308"></td> <td data-bbox="963 1276 1289 1308"></td> </tr> <tr> <td data-bbox="630 1308 954 1339"></td> <td data-bbox="963 1308 1289 1339"></td> </tr> <tr> <td data-bbox="630 1339 954 1371"><b>Course total</b></td> <td data-bbox="963 1339 1289 1371"><b>125</b></td> </tr> </tbody> </table>		<b>Activity</b>	<b>Semester workload</b>	Lectures	39	Independent study and exam preparation	83	Final written exam	3													<b>Course total</b>	<b>125</b>
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<p><b>STUDENT PERFORMANCE EVALUATION</b> <i>Description of the evaluation procedure</i></p> <p><i>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,</i></p>	Three hour long written exam in Greek																							

*clinical examination of patient, art interpretation, other*

*Specifically-defined evaluation criteria are given, and if and where they are accessible to students.*

#### **(5) ATTACHED BIBLIOGRAPHY**

- Προτεινόμενη Βιβλιογραφία:

Jurafsky, D. & J. H. Martin. (2020). *Speech and Language Processing: An Introduction to Natural Language Processing, Speech Recognition, and Computational Linguistics*. 2nd edition. Prentice-Hall. Partee B., A. Ter Meulen & R. E. Wall (3rd edition draft. Available online here: <https://web.stanford.edu/~jurafsky/slp3/>)

Bird, Steven, Edward Loper and Ewan Klein (2009), *Natural Language Processing with Python*. O'Reilly (available online here: <https://www.nltk.org/book/>)

Media Inc. Downey, A., 2008. *How to think like a computer scientist: learning with python*. Green Tea Press. (selected material from the book uploaded at eLearn)

Chatzikyriakidis S. *Lecture Slides*. (uploaded at eLearn).