COURSE OUTLINE

(1) GENERAL

SCHOOL	HUMANITIES		
ACADEMIC UNIT	DEPARTMENT OF MEDITERRANEAN STUDIES		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	ΓΥ-11	**SEMESTER**	6
COURSE TITLE	COMPUTATIONAL LINGUISTICS		
INDEPENDENT TEACHING ACTIVITIES *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*		**WEEKLY TEACHING HOURS**	**CREDITS**
		3	5
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).			
COURSE TYPE *general background, special background, specialised general knowledge, skills development*	Special background		
PREREQUISITE COURSES:	No		
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek. In the case of ERASMUS students, Greek & English		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes		
COURSE WEBSITE (URL)	http://dms.aegean.gr/en/undergraduate-studies/program-of-studies-2018-2019/		

(2) LEARNING OUTCOMES

Learning outcomes *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.* *Consult Appendix A* • *Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area* • *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B* • *Guidelines for writing Learning Outcomes*
After the successful completeness of the course, students should be able to: - know what Computational Linguistics is - recognize the scientific fields involved - understand what a Regular Expression (RE) is

- recognize REs in ICT environments
- understand the use of REs in computational linguistics
- design a regular expression for a given research question
- distinguish what a given regular expressions recognizes and what it produces
- understand what a Finite State Automaton (FSA) is and its use in computational linguistics
- distinguish between a Deterministic FSA and a Non-Deterministic FSA
- distinguish between what a given FSA recognizes and what it produces.
- design an FSA for a specific language research question and describe it formally
- match an FSA to a RE and vice versa
- deal with issues and problems in a formal, algorithmic way.

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?

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

- Search for, analysis and synthesis of data and information, with the use of the necessary technology
- Adapting to new situations
- Decision-making
- Working independently
- Working in an interdisciplinary environment
- Production of new research ideas

(3) SYLLABUS

- About Computational Linguistics
- Brief history of the scientific area
- Sciences involved
- Issues related to computational linguistics
- Regular Expressions (RE) for language
- Special characters – syntax
- RE building for language research questions
- What a specific RE recognizes and what it produces
- Finite State Automata (FSA) for language study
- Deterministic and Non-Deterministic FSA
- FSA building for language research questions
- What a specific FSA recognizes and what it produces
- Matching between RE-FSA

(4) TEACHING and LEARNING METHODS - EVALUATION

<table>
<tr><td>DELIVERY
Face-to-face, Distance learning, etc.</td><td>Face-to-face</td></tr>
<tr><td>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY
Use of ICT in teaching, laboratory education, communication with students</td><td>Use of ICT in teaching, laboratory education, communication with students</td></tr>
<tr><td>TEACHING METHODS
The manner and methods of teaching are described in detail. 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.

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</td><td><table>
<tr><th>Activity</th><th>Semester workload</th></tr>
<tr><td>Lectures</td><td>13 hrs (0.52 ECTS)</td></tr>
<tr><td>Teaching in Laboratory of informatics</td><td>26 hrs (1.04 ECTS)</td></tr>
<tr><td>Personal study</td><td>43 hrs (1.72 ECTS)</td></tr>
<tr><td>Assignments</td><td>40 hrs (1.6 ECTS)</td></tr>
<tr><td>Final examination</td><td>3 hrs (0.12 ECTS)</td></tr>
<tr><td>Course total</td><td>125 hrs (5 ECTS)</td></tr>
</table></td></tr>
<tr><td>STUDENT PERFORMANCE EVALUATION
Description of the evaluation procedure

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, clinical examination of patient, art interpretation, other

Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</td><td>Language of evaluation: Greek.
In case of ERASMUS students: Greek & English

Method of evaluation:
- assignment
- end of semester exam

Method of evaluation is given in class</td></tr>
</table>

(5) ATTACHED BIBLIOGRAPHY

Greek language

Μαρκόπουλος, Γ. Α. (2006) Ζητήματα Υπολογιστικής Γλωσσολογίας. Γ. Α. Μαρκόπουλος.

Τάντος, Α. (2016) Υπολογιστική Γλωσσολογία. Ελληνικά Ακαδημαϊκά Ηλεκτρονικά Συγγράμματα και Βοηθήματα.Αθήνα: Εθνικό Μετσόβιο Πολυτεχνείο, Σύνδεσμος Ελληνικών Ακαδημαϊκών Βιβλιοθηκών, Αποθετήριο "Κάλλιπος", www.kallipos.gr

Φραντζή, Κ. (2012) Εισαγωγή στην Επεξεργασία Σωμάτων Κειμένων. Αθήνα: Ίων.

Foreign language

Baldwin, T. & Kordoni, V. (2009) Proceedings of the EACL Workshop on the Interaction between Linguistics and Computational Linguistics: Virtuous, Vivious or Vacuous? 30/3/2009, Athens, Greece, http://www.aclweb.org/anthology/W09-01

Clark, A., Fox, C. & S. Lappin (2012) The Handbook of Computational Linguistics and Natural Language Processing (Blackwell Handbooks in Linguistics), Wiley-Blackwell.

Friedl, Geffrey E.F. (2006) Mastering Regular Expressions. O'Reilly Media.

Goyvaerts, J. (2012) Regular Expressions Cookbook. O'Reilly Media.

Grishman, R. (1986) Computational Linguistics: An Introduction (Studies in Natural Language Processing). Cambridge University Press.

Hausser, R. (2001) Foundations of computational linguistics: human-computer communication in natural language. Springer-Verlag.

Hollos, Stefan, J. Richard Hollos (2013) Finite Automata and Regular Expressions: Problems and Solutions. Abrazol Publishing.

Jurafsky, D. & J. H. Martin (2008) Speech and Language Processing: International Version: an Introduction to Natural Language Processing, Computational Linguistics, and Speech Recognition. Prentice Hall.

Kyriakopoulou, T. (2005) L' analyse automatique des textes ecrits. University Studio Press A.E

Related academic journals

Computational Linguistics, The MIT Press Journals,
http://www.mitpressjournals.org/loi/coli

Journal for Language Technology and Computational Linguistics, GSCL,
http://www.jlcl.org/index.php?modus=home&language=en

Research on Language and Computation, SpringerLink,
http://link.springer.com/journal/11168

Natural Language Engineering, Cambridge University Press,
https://www.cambridge.org/core/journals/natural-language-engineeringSpringer.