



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Natural Language Processing							
Course Code		MTK569		Couse Level		Second Cycle (Master's Degree)			
ECTS Credit	7	Workload	175 (<i>Hours</i>)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		The purpose of this course is to introduce the modern methods of Natural Language Processing to students, and is to gain the ability to do research on the field of Natural Language Processing.							
Course Content		Introduction to natural language processing and principles of computational linguistics, grammars and languages, language models, Part of Speech Tagging (POS), Statistical language models, corpus and n-gram Hidden Markov model, Viterbi algorithm, machine learning and some applications of Natural Language Processing.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Discussion, Individual Study, Problem Solving					
Name of Lecturer(s)									

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	30
Final Examination	1	50
Assignment	1	20

Recommended or Required Reading

1	D. Jurafsky and J. H. Martin, "Speech and Language Processing" , Prentice Hall, 2000.
2	Christopher D. Manning and Hinrich Schuetze, " Foundations of Statistical Natural Language Processing", 1999.
3	Alexander Clark, Chris Fox, and Shalom Lappin, "The Handbook of Computational Linguistics and Natural Language Processing", Wiley & Sons, 2010.

Week	Weekly Detailed Course Contents	
1	Theoretical	Introduction to natural language processing
2	Theoretical	Principles of computational linguistics
	Preparation Work	Relevant part of course book should be read
3	Theoretical	Grammars and languages
	Preparation Work	Relevant part of course book should be read.
4	Theoretical	Language models
	Preparation Work	Relevant part of course book should be read
5	Theoretical	Part of Speech Tagging (POS)
	Preparation Work	Relevant part of course book should be read
6	Theoretical	Corpus and n-gram
	Preparation Work	Relevant part of course book should be read
7	Theoretical	Statistical language models and detection of dictation errors
	Preparation Work	Relevant part of course book should be read
8	Theoretical	Hidden Markov model, Viterbi algorithm
	Preparation Work	Relevant part of course book should be read
9	Preparation Work	All subjects covered
	Intermediate Exam	MIDTERM EXAM
10	Theoretical	Classification of text
	Preparation Work	Relevant part of course book should be read
11	Theoretical	Information extraction
	Preparation Work	Relevant part of course book should be read
12	Theoretical	Machine learning
	Preparation Work	Relevant part of course book should be read
13	Theoretical	Machine learning
	Preparation Work	Relevant part of course book should be read



14	Theoretical	Machine learning
	Preparation Work	Relevant part of course book should be read
15	Theoretical	Question answering systems
	Preparation Work	Relevant part of course book should be read
16	Preparation Work	All subjects covered
	Final Exam	FINAL EXAM

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	3	3	84
Assignment	1	10	2	12
Midterm Examination	1	32	2	34
Final Examination	1	43	2	45
Total Workload (Hours)				175
[Total Workload (Hours) / 25*] = ECTS				7
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes

1	To be able to develop Natural Language Processing applications
2	To be able to recognize specific issues in natural language processing for Turkish
3	To be able to bring innovation to Natural Language Processing approaches
4	To be able to use concepts in solving certain types of problems
5	To be able to develop analytical skills and apply to problems

Programme Outcomes (Mathematics Master)

1	To be able to have an adequate theoretical and practical domain knowledge.
2	To be able to comprehend the interdisciplinary interaction associated with Mathematics.
3	To be able to use theoretical and practical domain knowledge gained in the field of Mathematics.
4	To be able to interpret knowledge from different disciplines integrating knowledge in the field of mathematics and produce new information.
5	To be able to define, analyse, model and to solve the problems by scientific methods in Mathematics.
6	To be able to conduct a math related specialistic study independently.
7	To be able to develop new strategic approaches to solve problems occurred in unforeseen and complex math-related applications by taking responsibility.
8	To be able to lead in situations that require solving problems related to the mathematics.
9	To be able to criticize his/her knowledge and skills acquired in the field mathematics.
10	To be able to transfer his/her ideas and suggestions for solutions to problems by supporting quantitative or qualitative data verbally and in writing.
11	To be able to communicate both orally and written in a foreign language.
12	To be able to use computer hardware and information technologies with software required by Mathematics.
13	To be able to contribute to the solution of the social, scientific, cultural and ethical problems related to the Mathematics, and being able to support the development of social, scientific, cultural and ethical values.
14	To be able to develop mathematics-related strategies, policies and operational plans, and to evaluate the results obtained within the framework of quality processes.
15	To be able to use his/her knowledge in the field of mathematics and practical problem-solving skills in interdisciplinary studies.

Contribution of Learning Outcomes to Programme Outcomes 1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High

	L1	L2	L3	L4	L5
P1	3	3	4	4	4
P2	3	3	4	4	4
P3	3	3	5	5	5
P4	4	4	5	5	5
P5			3	3	3
P6	3		4	4	4
P7			4	4	4
P10			4	4	4



P11			3	3	3
P12	5		3	3	3
P13			3	3	3
P15	5	4	4	4	4

