

## ICS 482 Natural Language Processing - 062

### Catalog Description

This course examines a range of issues concerning computer systems that can process human languages. Among the issues to be discussed are morphological and syntactic processing, semantic interpretation, discourse processing and knowledge representation.

**Meeting:** Sunday and Tuesday 10:00 - 11:15 am at Building 24 room 256

**Course web site:** [webcourses@kfupm.edu.sa](mailto:webcourses@kfupm.edu.sa)

**Instructor:** Husni Al-Muhtaseb

**Office:** B22-311

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**Office hours:** Sunday, Monday, and Tuesday 11:20 - 11:50 and 12:20 - 13:00

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**Web :** <http://faculty.kfupm.edu.sa/ICS/muhtaseb/>

**Textbook:** Speech And Language Processing: An Introduction to Natural Language Processing, Computational Linguistics, and Speech Recognition. By Daniel Jurafsky and James H. Martin, Prentice-Hall, 2000. Details about this book and its resources can be found at: <http://www.cs.colorado.edu/~martin/slp.html>

**Prerequisites :** Senior standing in ICS major.

### Course Objectives:

1. Gain an appreciation of the complexity of natural language.
2. Survey some applications of natural language processing.
3. Understand basic processes and representations used in syntax, semantics, and other components of natural language processing.
4. Explore Web resources for natural language processing.
5. Practice individual investigations in chosen topics.

Moreover, the following skills will be addressed in the course by adapting and embedding reasonable methods in the assignments, lectures, student presentations, quizzes and exams.

- Creative Thinking
- Positive attitude/ Self esteem
- Attendance and Punctuality
- Ability to Learn
- Using Technology
- Reasoning and Driving for Results
- Decision Making
- Communication skills
- Leadership skills
- Team skills
- Attendance and Punctuality
- Locating, organizing, analyzing information

## Grading Policy

Topic	Percentage
Assignments	0%
Quizzes (4)	28%
Presentation	10%
Project	25%
WebCt Participation	12%
Final Exam	25%
<b>Total</b>	<b>100</b>

## Tentative Weekly Schedule

Week	Topic	Textbook Chapters	Activity
1	Introduction	1	
2	Regular Expressions & Automata	2	
3	Morphology & Finite State Transducers	3	
4	N-Grams	6	Quiz 1
5	Parts of Speech	8 + external Material	
6	Syntax & Context-free grammars - Parsing	9 & 10	
7	Lexicalized and Probabilistic Parsing	11	Quiz 2
8	Semantic Representation & Representing Meaning	14	
9	Semantic analysis & lexical Semantics	15 & 16	
10	Wrap up		Quiz 3
11	Machine Translation	21	
12	Information Extraction	External Material	
13	Students' presentations	External Material	Quiz 4 - Take-home
14	Students' presentations		
15	Students' presentations		
16	Information Extraction	External Material	