



The University of Jordan
Accreditation & Quality Assurance Center

COURSE Syllabus

1	Course title	Natural Language Processing
2	Course number	1902345
3	Credit hours (theory, practical)	3
	Contact hours (theory, practical)	3
4	Prerequisites/corequisites	NA
5	Program title	Computer Information Systems
6	Program code	2
7	Awarding institution	The University of Jordan
8	Faculty	King Abdullah II School for Information Technology (KASIT)
9	Department	Computer Information Systems (CIS)
10	Level of course	Third year
11	Year of study and semester (s)	First Semester 2015/2016
12	Final Qualification	Bachelor (B.Sc.)
13	Other department(s) involved in teaching the course	None
14	Language of Instruction	English
15	Date of production/revision	Production: 15/9/2015 , Revision: 20/10/2015
16	Required/ Elective	Elective

17. Course Coordinator:

Dr. Bassam Hammo

Office numbers: 208

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18. Other instructors:

None

19. Course Description:

This course examines a range of issues concerning computer systems that can process human languages. Among the issues to be discussed are morphological analysis, finite state automata, syntactic processing, parsing with CFG, information retrieval, knowledge representation, and NLP applications.

20. Course aims and outcomes:

<p>A- Aims:</p> <p>The main objective of this course is to help students understanding how computers can process natural languages through a processing pipeline. The course focuses on morphology, regular expressions and finite state automata, part of speech tagging, syntax and some NLP applications.</p> <p>B- Intended Learning Outcomes (ILOs): Upon successful completion of this course students will be able to...</p>
<p>A-Knowledge and Understanding:</p>
<p>A1) Knowing the fundamental concepts underlying natural language processing (NLP) and its applications</p> <p>A2) Knowing the processing steps through the NLP pipeline</p> <p>A3) Understanding morphology, tokenization and stemming</p> <p>A4) Understanding syntax, parsing with CFG and parsing trees</p> <p>A5) Understanding some NLP applications</p>
<p>B-Intellectual skills: with the ability to ...</p>
<p>B1) Analyze and specify some NLP problems and how to solve them.</p> <p>B2) Design a general solution to develop a detailed algorithm using tools such as NLTK</p> <p>B3) Implement a solution and carry out the steps in the algorithm using Java or Python programming languages</p> <p>B4) Test the solution to ensure that it yields appropriate results.</p> <p>B5) Realize the importance of NLP through real life applications such as Machine Translation and Question Answering.</p>
<p>C- Subject Specific Skills: With ability to</p>
<p>C1) Deal with different NLP applications.</p> <p>C2) Solve real world problems using Java or Python programming languages</p>
<p>D- Transferable skills:</p>
<p>D1) Discuss and work in a group in order to develop tools to solve different NLP problems</p> <p>D2) Improve students skills in using Java or Python programming languages</p>

21. Topic Outline and Schedule:

Topic	Week	Instructor	Achieved ILOs	Evaluation Methods	Reference
Course overview	1	B. Hammo	A1		
Introduction	2-3	B. Hammo	A2	In class questions	J&M Chap. 1
Assignment 1: Tokenization	3	B. Hammo	B1, B2, B3, B4, D1, D2	Discussion	
FSA & Regular Expr.	4-6	B. Hammo	A2, A3	In class questions	J&M Chap. 2
Assignment 2: Regular Expr.	5	B. Hammo	B1, B2, B3, B4, D1, D2	Discussion	
Morphology	7-8	B. Hammo	A3	In class questions	J&M Chap. 3
Midterm Exam		B. Hammo		Exam	
Information Retrieval	9-12	B. Hammo	A5	In class questions, lab practice.	Manning
Assignment 3: Search Engine	10	B. Hammo	B5, C1, C2, D1, D2	Discussion	
Syntax & parsing with CFG	13-15	B. Hammo	A4	In class questions	J&M 8,9,10
Final Exam					

22. Teaching Methods and Assignments:

Development of ILOs is promoted through the following teaching and learning methods:

Lecture, presentation, lab work, discussions and in class questions

23. Evaluation Methods and Course Requirements:

Teaching (T) Strategies: Class Contact is 3 Hour per week. The lecturer of the course gives 3 hours per week while students should practice on their own in a lab; however the course is counted as 3-credit hour for students. The Course will be delivered using different means like lectures in the classroom, presentations, assignment discussions and case studies.

Learning (L) Methods: Students attend classes in a classroom for 3 hours per week, they ask questions and participate in discussions, do the assignments, present their homework. A student will use the lab to practice the skills he/she is gaining and to do the assignments. Students will access the e-learning platform for more instructions and supported learning materials.

Assessment (A) Methods: There will be several assessment methods of evaluation of the performance of the students such as attending and class participation, grading the homework, assignments; conducting the midterm, and the final exams. Every student is expected to completely adhere to the assignments strict deadlines.

24. Course Policies:

A- Attendance policies:

Maximum allowable absence 15% of number of Lectures/Semester

B- Absences from exams and handing in assignments on time:

It is the student's responsibility to ensure that he/she is aware of all assignments, announcements and contents of missed sessions

C- Health and safety procedures:

It is the student's responsibility to shut down the computer according to the correct procedures and keep the equipment clean.

D- Honesty policy regarding cheating, plagiarism, misbehavior:

It is the student's responsibility to ensure that he/she knows the consequences of cheating, plagiarism and misbehavior.

E- Grading policy:

Assessment will be as follows:

Assignments	20
Midterm exam	30
Final exam	50

F- Available university services that support achievement in the course:

Computer Labs, E-Learning

25. Required equipment:

A computer with Java or Python.

26. References:

Required book (s), assigned reading and audio-visuals:

SPEECH and LANGUAGE PROCESSING: An Introduction to Natural Language Processing, Computational Linguistics, and Speech Recognition (2nd Edition, by [Daniel Jurafsky](#) and [James H. Martin](#), 2008.

Recommended books, materials, and media:

An Introduction to Information Retrieval, by [Christopher D. Manning](#)

Any programming language book in **JAVA** or **Python**

27. Additional information:

1. Every student is expected to completely adhere to the exams dates and projects strict deadlines, absolutely no exceptions will be given.

2. Maximum allowable absence 15% of number of Lectures/Semester

الامتناع المدبر عن حضور المحاضرات أو الدروس أو عن الأعمال الأخرى التي تقضي الأنظمة بالمواظبة عليها ، وكل تحريض على هذا الامتناع سوف يؤدي الى حرمان الطالب من المادة المعنية.

لن يكون هناك امتحان تعويضي الا في حالة وجود عذر وحالة طارئة من المستشفى. على الطالب Mid Term في حالة التغيب عن امتحان ال ابراز العذر لمدرس المادة في فتره لا تتجاوز الثلاثة ايام من تاريخ الامتحان, وللمدرس الحق في قبول او رفض العذر , وحسب التعليمات.

Concerns or complaints should be expressed in the first instance to the module lecturer; if no resolution is forthcoming then the issue should be brought to the attention of the module coordinator (for multiple sections) who will take the concerns to the module representative meeting. Thereafter problems are dealt with by the Department Chair and if still unresolved the Dean and then ultimately the Vice President. For the final complaints, there will be a committee to review grading the final exam.

For more details on University regulations please visit <http://www.ju.edu.jo/rules/index.htm>

Name of Course Coordinator: Dr. Bassam Hammo Signature: ----- Date: ---

----- Head of curriculum committee/Department: ----- Signature: -----

Head of Department: ----- Signature: -----

Head of curriculum committee/Faculty: ----- Signature: -----

Dean: ----- -Signature: -----

Copy to:

Head of Department

Assistant Dean for Quality Assurance

Course File