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| المملكة العربية السعودية  وزارة التعليم العالي  **جامعة أم القرى**  الكلية الجامعية بالجموم – قسم الحاسب الآلي |  | Kingdom of Saudi Arabia  Ministry of Higher Education  **Umm Al-Qura University**  University College in Al-Jamoum  Computer Dept. |

Course Specification

1. **Course number and name:** (2316514-3) Natural Language Processing
2. **Credits and contact hours:** 3 Credits

(Lecture: 3/week – Practical Session: Non)

1. **Instructor’s or course coordinator’s name:** Dr. Abdel-Rahman Hedar
2. **Text books**
3. **Main Text book:** Daniel Jurafsky and James H. Martin. Speech and Language Processing: An introduction to natural language processing, Pearson Prentice Hall, 2nd Edition (May 26, 2008).
4. **Reference:** Anne Kao and Steve R. Poteet. Natural language processing and text mining. Springer, 2007.
5. **Specific course information**
6. **brief description of the content of the course (Catalog Description):**

Upon the completion of this course, the student will have learned, through appropriate classroom lectures and projects, the fundamental algorithms and models for Natural Language Processing (NLP), how you can use them to solve practical problems in dealing with language data wherever you encounter it.

1. **prerequisites or co-requisites:** Artificial Intelligence (2316432-3)
2. **indicate whether a required, elective, or selected elective course in the program:** required
3. **Specific goals for the course**

The student will be able to:

1. Develop familiarity with lexical, syntactic, semantic and pragmatic aspects of NLP.
2. Learn the algorithms and methods on the Natural Language Processing domain.
3. Apply statistical and machine learning approaches to NLP.
4. Acquire the skills for developing NLP tools/systems.
5. Be familiar with basic concepts in Arabic language processing.

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| *Course*  *Goals* | *Program Outcomes* | | | | | | | | | | |
| SOa | SOb | SOc | SOd | SOe | SOf | SOg | SOh | SOi | SOj | SOk |
| 1 | **🗸** |  |  |  |  |  |  |  |  |  |  |
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| **Relationship of Course Goals to the Program Student Outcomes** | |
| **SOa** | An ability to apply knowledge of computing and mathematics appropriate to the discipline   * *Students apply knowledge of computing and design to a project.* |
| **SOi** | An ability to use current techniques, skills, and tools necessary for computing practices.   * *Students are required to apply their knowledge of computing to design a solution to a problem and to document the solution including the tradeoffs involved in their design choices.* |

1. **Brief list of topics to be covered**

* Introduction
* Finite-state methods for NLP
* Morphology
* Word prediction
* Language modeling
* Parts of speech
* Speech Synthesis
* Automatic Speech Recognition
* Arabic Language Processing