Course	**CS 6320.003**
Course Title	**Natural Language Processing**
Professor	Dr. Mithun Balakrishna
Term	Fall 2016
Meetings	Sat: 10:00am-12:45pm, ECSS 2.306

Professor's Contact Information

Office Phone	(972) 883-4523
Office Location	ECSS 4.403
Email Address	mxb026000@utdallas.edu
Office Hours	Fri 6pm-7pm
Other Information	Course Website – http://elearning.utdallas.edu

General Course Information

Pre-requisites, Co-requisites, & other restrictions	CS5343, Algorithm Analysis & Data Structures or equivalent
Course Description	This course covers state-of the-art methods for Natural Language Processing (NLP). After an introduction to the basics of syntax, semantic and discourse analysis, the focus shifts to the integration of these modules into complex natural-language processing systems. In addition to Natural Language Understanding (NLU), the course presents advanced material on lexical knowledge acquisition, question answering, natural language generation, machine translation, and applications of the natural language processing on the Internet.
Learning Outcomes	1. The ability to perform morphological analysis 2. The ability to compute n-gram statistics and to perform smoothing 3. Knowledge about parts-of-speech and ability to use and understand part-of-speech taggers 4. Knowledge about various parsing algorithms and parsing techniques 5. Knowledge of semantic representations including FrameNet, WordNet, PropBank and semantic parsing techniques that employ them 6. Knowledge about statistical machine translation 7. Applying the NLP techniques to modern applications, including semantic parsing, Social Media and Web document processing
Required Texts & Materials	Speech and Language Processing: An Introduction to Natural Language Processing, Computational Linguistics, and Speech Recognition, 2nd Edition by D. Jurafsky and J. Martin, Prentice Hall
Suggested Texts, Readings, & Materials	All materials as provided in class, course eLearning page, and research papers.

Assignments & Academic Calendar (Subject to Change)

08/27/2016	Introduction to NLP NLP Resources Review of English Grammar
09/03/2016	Regular Expressions and Automata N-grams

09/10/2016	Part-of-Speech Tagging
09/17/2016	Hidden Markov Models
	Maximum Entropy Models
09/24/2016	Formal Grammars and Syntactic Parsing
10/01/2016	Statistical Parsing
10/08/2016	Lexical Semantics and Compositionality
	Midterm Exam Topic Review
10/15/2016	Midterm Exam
10/22/2016	Computational Lexical Semantics and Inferences
	Project Discussion
10/29/2016	Semantic Relations
	Midterm Exam Return
11/05/2016	Logic Representation of Text, Textual Entailment
	Project Discussion
11/12/2016	Discourse
11/19/2016	Information Extraction
	Project Discussion
11/26/2016	Thanksgiving Holiday
12/03/2016	Project Discussion
	Final Exam Topic Review
Final Exam	12/10/2016, Saturday
	11:00AM - 1:45PM
	ECSS 2.306

Course Policies

Grading (credit) Criteria	**The grade weight breakdown for the course is:** **Homework 20%** **Midterm 25%** **Project 25%** **Final Exam 30%** **The grade thresholds for the overall course grade is[1]:** <table><tr><td>**%**</td><td>**Letter Grade**</td><td>**Credit**</td></tr><tr><td>**93-100**</td><td>**A**</td><td>**4.00**</td></tr><tr><td>**90-92**</td><td>**A-**</td><td>**3.66**</td></tr><tr><td>**87-89**</td><td>**B+**</td><td>**3.33**</td></tr><tr><td>**83-86**</td><td>**B**</td><td>**3.00**</td></tr><tr><td>**80-82**</td><td>**B-**</td><td>**2.66**</td></tr><tr><td>**77-79**</td><td>**C+**</td><td>**2.33**</td></tr><tr><td>**70-76**</td><td>**C**</td><td>**2.00**</td></tr><tr><td>**0-69**</td><td>**F**</td><td>**0.00**</td></tr><tr><td>**-**</td><td>**I**</td><td>*</td></tr><tr><td>**-**</td><td>**P**</td><td>*</td></tr></table> ***The grades P and I do not produce grade points.**

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[1] **Please refer to the "Class Attendance" course policy for other factors that might adversely affect the final course letter grade.**

Make-up Exams	**There will be no make-up exams unless previously requested and approved by the instructor**
Extra Credit	**Opportunities to score extra credits will be available in the Midterm, Project, and Final exams**
Late Work	**up to 2 hours late — 10% deduction** **2 - 4 hours late — 20% deduction** **4 - 12 hours late — 35% deduction** **12 - 24 hours late — 50% deduction** **24 - 48 hours late — 75% deduction** **more than 48 hours late — 100% deduction (zero credit)**
Special Assignments	**None**
Class Attendance	**Three consecutive absences lead to one letter grade drop.** **Four consecutive absences lead to an F.**
Comet Creed	*This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:* *"As a Comet, I pledge honesty, integrity, and service in all that I do."*
UT Dallas Syllabus Policies and Procedures	*The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.* *Please go to http://go.utdallas.edu/syllabus-policies for these policies.*

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.