NEW COURSE FORM

1.	General Information.						
a.	Submitted by the College of: $\underline{A\&S}$ Today's Date: $\underline{1.26.2011}$						
b.	Department/Division: <u>Linguistics</u>						
C.	Contact person name: Andrew Hippisley Email: andrew.hippisley Phone: 7-6989						
d.	Requested Effective Date: Semester following approval OR Specific Term/Year¹:						
2.	Designation and Description of	Proposed Co	urse.				
a.	Prefix and Number: LIN 511						
b.	Full Title: COMPUTATIONAL	L LINGUIST	<u> TICS</u>				
c.	Transcript Title (if full title is mo	re than 40 ch	aracters):				
d.	To be Cross-Listed ² with (Prefix a	and Number)	:				
e.	Courses must be described by <u>at</u> for each meeting pattern type.	<u>least one</u> of	the meeting patterns belo	ow. Include number	of actual contact hours ³		
	<u>2</u> Lecture Lal	ooratory ¹	Recitation	Discussion	Indep. Study		
	Clinical Co	lloquium	Practicum	Research	Residency		
	Seminar Stu	ıdio <u>1</u>	1 Other – Please explain:	(computer lab	<u>)</u>		
f.	Identify a grading system:	Letter (A, B,	, C, etc.) Pass/	Fail			
g.	Number of credits: $\underline{3}$						
h.	Is this course repeatable for add	itional credit	?		YES NO		
	If YES: Maximum number of c	redit hours:					
	If YES: Will this course allow n	nultiple regist	trations during the same se	emester?	YES NO		
i.	Computational linguistics addresses the problem of 'information overload', the result of huge advances in processing speeds and memory size. This course shows the methods and techniques for automatically analyzing and modeling natural language data in order to redress the balance of information acquisition and information analysis, turning information into knowledge. The focus will be word-based, sentence-based and meaning-based computational approaches. Students will have the opportunity to practically apply their theoretical knowledge in a computer environment. Computer languages used will be Python and DATR, as well as some basic UNIX-based scripting languages. No experience with computers is necessary. By the end of the course students will have acquired a host of transferable skills for an increasingly digitally dominated job market.						
j.	Prerequisites, if any: LIN/ENC			Т	4		
k.	Will this course also be offered t	hrough Dista	ince Learning?		YES ⁴ NO		

¹ Courses are typically made effective for the semester following approval. No course will be made effective until all approvals are received

² The chair of the cross-listing department must sign off on the Signature Routing Log.

³ In general, undergraduate courses are developed on the principle that one semester hour of credit represents one hour of classroom meeting per week for a semester, exclusive of any laboratory meeting. Laboratory meeting, generally, represents at least two hours per week for a semester for one credit hour. (from *SR 5.2.1*)

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I.	Supplementary teaching component, if any: Community-Based Experience Service Learning Both					
3.	Will this course be taught off campus?					
4.	Frequency of Course Offering.					
a.	Course will be offered (check all that apply):					
b.	Will the course be offered every year? YES ☐ NO ☒					
	If NO, explain: Not core for bachelors or proposed MA (Linguistics Theory & Typology)					
5.	Are facilities and personnel necessary for the proposed new course available?					
	If NO, explain:					
6.	What enrollment (per section per semester) may reasonably be expected? 15					
7.	Anticipated Student Demand.					
a.	Will this course serve students primarily within the degree program?					
b.	Will it be of interest to a significant number of students outside the degree pgm?					
	If YES, explain: Because of its computational emphasis it will be of interest to comp sci, especially AI					
8.	Check the category most applicable to this course:					
	Traditional – Offered in Corresponding Departments at Universities Elsewhere					
	Relatively New – Now Being Widely Established					
	Not Yet Found in Many (or Any) Other Universities					
9.	Course Relationship to Program(s).					
a.	Is this course part of a proposed new program?					
	If YES, name the proposed new program: MA in Linguistics Theory & Typology					
b.	Will this course be a new requirement ⁵ for ANY program? YES NO					
	If YES ⁵ , list affected programs:					
10.	Information to be Placed on Syllabus.					
a.	Is the course 400G or 500?					
	If YES, the differentiation for undergraduate and graduate students must be included in the information required in 10.b . You must include: (i) identification of additional assignments by the graduate students; and/or (ii) establishment of different grading criteria in the course for graduate students. (See SR 3.1.4.)					
b.	The syllabus, including course description, student learning outcomes, and grading policies (and 400G-/500-level grading differentiation if applicable, from 10.a above) are attached.					

⁴ You must *also* submit the Distance Learning Form in order for the proposed course to be considered for DL delivery. ⁵ In order to change a program, a program change form must also be submitted.

NEW COURSE FORM

Signature Routing Log

General Information:

Course Prefix and Number: LIN

<u>LIN 511</u>

Proposal Contact Person Name:

Andrew Hippisley

Phone: 7-6989

Email:

andrew.hippisley@uky.edu

INSTRUCTIONS:

Identify the groups or individuals reviewing the proposal; note the date of approval; offer a contact person for each entry; and obtain signature of person authorized to report approval.

Internal College Approvals and Course Cross-listing Approvals:

Reviewing Group	Date Approved	Contact Person (name/phone/email)	Signature
Linguistics, committee	02.09.2011	Andrew Hippisley / 7-6989 / andrew.hippisley@uky.edu	Anth
		1 1	0 1 1
		/ /	
A & S E. Policy Cmte	3122/11	Randall Rorda, Humanities / 7-1033 / roorda@uky.edu	Randell Bonda
A & S Dean	312/11	Anna Bosch, Associate Dean / 7-6689 / bosch@uky.edu	-ARRESOEL

External-to-College Approvals:

Council	Date Approved	Signature	Approval of Revision ⁶
Undergraduate Council	1/12/2012	Sharon Gill	
Graduate Council			
Health Care Colleges Council			
Senate Council Approval		University Senate Approval	

Comments:		

⁶ Councils use this space to indicate approval of revisions made subsequent to that council's approval, if deemed necessary by the revising council.

LIN 511 Computational Linguistics

Day/Time/Place: *TBD*

Instructor: Andrew Hippisley **Email:** andrew.hippisley@uky.edu

Office phone: 859-257 6989 Office address: 1377 POT

Preferred method on contact: *email* **Office Hours:** *days and times TBD*

Prerquisite: LIN/ENG 211 Introduction to Linguistics

Overview of course

Computational linguistics addresses the problem of 'information overload', the result of huge advances in processing speeds and memory size. This course shows the methods and techniques for automatically *analyzing* and *modeling* natural language data in order to redress the balance of information acquisition and information analysis, turning information into knowledge. The focus will be word-based, sentence-based and meaning-based computational approaches. Students will have the opportunity to practically apply their theoretical knowledge in a computer environment. Computer languages used will be Python and DATR, as well as some basic UNIX-based scripting languages. No experience with computers is necessary. By the end of the course students will have acquired a host of transferable skills for an increasingly digitally dominated job market.

Student Learning Outcomes:

Upon completion of the course students should be able to

- demonstrate a clear understand of the basics of word-based, sentence-based and meaning-based computational linguistics
- apply this understanding to solve computational linguistics problems by debugging code and writing code
- acquire basic coding skills in Python, DATR and UNIX
- collaboratively present a computer system with well defined goals in a professional manner
- curriculum student learning outcomes this course includes are:
 - o *SLO 1*: Demonstrate a firm understanding of language as a complex system comprising phonological, morphological, syntactic, and semantic components that interface with one another. (reinforce)
 - o *SLO 5*: Demonstrate the ability to appropriately use the scientific method to account for linguistic phenomena, primarily by solving problems in the phonological, morphological, syntactic, semantic, historical and sociolinguistic domains. (emphasize)
 - o SLO 6: Demonstrate appropriate information literacy, e.g. the ability to use computational methods, linguistic databases and corpora, and print and electronic resources to analyze and evaluate linguistic phenomena. (emphasize)

Course Goals/Objective:

The course aims to equip students with basic knowledge of computational linguistics, and the tools and environment for applying this knowledge. Through its problem centered assessments, students will be given the opportunity to acquire coding skills, and to collaborate on a systems-building project which will be show-cased in front of the class, simulating a real life client-systems analyst conversation.

Required materials

TEXTS:

- *Natural Language Processing with Python*. Bird, Klein, Loper. 2009. (O'Reilly.) Freely available at http://www.nltk.org/book.
- Speech and Language Processing. Jurafsky & Martin. 2008. (Pearson / Prentice Hall). Extracts will be made available.
- Handbook of Natural Language Processing. Indurkhya & Damerau (eds). 2010. (CRC Press). Extracts will be made available.
- Network Morphology. Brown & Hippisley. 2011. (Cambridge University Press.) Extracts will be made available.

Grading:

UNDERGRAD REQUIREMENTS:			GRADING SO	CALE:
5 Lab problem sets= 50%	90-100%	A	60-69%	D
1 systems development project=20%	80-89%	В	59% or below	E
1 final exam=30%	70-79%	C		

Graduate students taking this course will be given extra questions on all assessments.

GRAD REQUIREMENTS

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1 systems development project=20%	80-89%	В	
1 final exam=30%	70-79%	C	

Students will be provided with a Midterm Evaluation by XXX of course performance based on learning outcomes and their assessment.

Tentative course schedule:

Week	Торіс	READING ASSIGNMENTS	WRITTEN HOMEWORK DUE-DATES	Exam dates
Week 1 (Jan 14)	Introduction to course			
	Word-based computational linguistics			
Week 2 (Jan 19, 21):	Morphological generation, defaults and DATR	Reader		
Week 3 (Jan 26, 28):	Morphological generation, defaults and DATR contd	Reader		
Week 4 (Feb 2, 4)	Finite state automata, finite state transducers and morphological analysis	Reader	HW 1 due February 4	
Week 5 (Feb 9, 11):	Finite state morphology (FSM) represented in DATR	Reader		
Week 6 (Feb 16, 18):	Regular expressions and information retrieval	Reader, Bird et al ch 3		
Week 7 (Feb 23, 25):	Spelling checkers and the noisy channel model	Reader	HW 2 due February 25	
	Sentence-based computational linguistics			
Week 8 (March 2, 4):	Part of Speech (POS) tagging	Bird et al ch 5, Reader		
Week 9 (March 9, 11):	Phrase Structure Grammar (PSG) refresher	Reader	HW 3 due March 11	
Week 10 (March 16, 18):	SPRING BREAK			
Week 11 (March 23, 25):	Computational PSG	Bird et al chapter 8		
Week 12 (Mar 30, Apr 1)	Syntactic parsing with context free grammars (CFGs)	Bird et al chapter 8	HW 4 due April 1	

	Meaning-based computational linguistics			
Week 13 (April 6, 8):	Computing sentence meaning	Bird et al chapter 10		
Week 14 (April 13, 15):	Word meaning and Word Net	Reader	HW 5 due April 15	
Week 15 (April 20, 22):	Machine Translation	Reader		
Week 16 (April 27, 29):	(demonstrations & revision)		HW 6 due April 29	

Final exam: Thurs May 6, 08:00 a.m.

Course Policy on Academic Accommodations due to disability: If you have a documented disability that requires academic accommodations, please see me as soon as possible during scheduled office hours. In order to receive accommodations in this course, you must provide me with a Letter of Accommodation from the Disability Resource Center (Room 2, Alumni Gym, 257-2754, email address jkarnes@eamil.uky.edu) for coordination of campus disability services available to students with disabilities.

Course Policy for Attendance:

In order to benefit fully from my lectures and from the insights of the other students in the course (and to contribute your own insights), it is important that you attend every class session, lecture and lab; if you do have to miss a class session, you must let me know the circumstances of your absence. Try to borrow someone's notes, since some of the information that will be covered in class is not covered in the text. If you have specific questions regarding any information covered in class, by all means come and see me during my office hours (or schedule an appointment for some other time); please don't expect me to repeat entire lectures, however.

Excused absences will be given at instructor's discretion only with proof as defined by S.R. 5.2.4.2. [http://www.uky.edu/Ombud/policies.php S.R. 5.2.4.2 defines the acceptable reasons for excused absences.])

Course Policy for Submission of Assignments:

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Course Policy on Academic Integrity:

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Course Policy on Classroom civility and decorum:

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responsibility -- to ensure that all academic discourse occurs in a context characterized by respect and civility. Obviously, the accepted level of civility would not include attacks of a personal nature or statements denigrating another on the basis of race, sex, religion, sexual orientation, age, national/regional origin or other such irrelevant factors.)

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