

EFLU-SCHOOL OF LANGUAGE SCIENCES
MA LINGUISTICS PROGRAMME (CAFETERIA MODE) TIMETABLE SEMESTER II/IV
JAN – April 2019

MACL List of Courses

LS 186 - Introduction to Corpus Linguistics	-	Dr. Atreyee Sharma
LS 188 - Introduction to HPSG	-	Prof. M Hari Prasad
LS 281 - NLP II	-	Dr. Rahul Balusu
LS 282 - Digital Signal Processing for Linguistics	-	Dr. Indranil Dutta
LS 288 - Introduction to Human Sentence Processing	-	Dr. Atreyee Sharma
LS 289 - Natural Language Understanding and Knowledge Representation	-	Dr. Rahul Balusu
LS 387 - Artificial Neural Networks and Deep Learning for NLP	-	Dr. Indranil Dutta

Course Descriptions

Course Title	Introduction to Corpus Linguistics
Course Code	LS 186
Semester / Intake	II/IV – 30
No. of Credits	5
Name of Faculty Member(s)	Atreyee Sharma
Course Description: 150/200 words	<p>Corpus linguistics is a method of carrying out linguistic analyses. Tentatively the following topics are to be covered (but changes based on the students' background/need shall be made after enrollment):</p> <ol style="list-style-type: none">i. Corpora (Text, Speech & Sign): Concept & Classificationii. Encoding (Concept of Font & Encoding; ASCII, ISCII & Unicode)iii. Balanced Corpus: Concept, Development & Challengesiv. Linguistic knowledge & Corpus: Annotation & Extractionv. Corpus Utilities & Corpus analysis tools (Transliteration, Frequency, N-gram, KWIC-KWOC, Concordances, etc) <p>Articles will be assigned from various textbooks, journals, and research surveys</p>
Evaluation Scheme	Mid-term: Final::40:60

Course Title	Introduction to HPSG
Course Code	LS 188
Semester / Intake	II/IV – 30
No. of Credits	5
Name of Faculty Member(s)	Prof. M. Hari Prasad
Course Description: 150/200 words	<p>Corpus linguistics is a method of carrying out linguistic analyses. Tentatively the following topics are to be covered (but changes based on the students' background/need shall be made after enrollment):</p> <ul style="list-style-type: none"> i. Corpora (Text, Speech & Sign): Concept & Classification ii. Encoding (Concept of Font & Encoding; ASCII, ISCII & Unicode) iii. Balanced Corpus: Concept, Development & Challenges iv. Linguistic knowledge & Corpus: Annotation & Extraction v. Corpus Utilities & Corpus analysis tools (Transliteration, Frequency, N-gram, KWIC-KWOC, Concordances, etc) <p>Articles will be assigned from various textbooks, journals, and research surveys</p>
Evaluation Scheme	Mid-term: Final::40:60

Course Title	LS 281
Course Code	NLP- II
Semester / Intake	II/IV – 30
No. of Credits	5
Name of Faculty Member(S)	Dr. Rahul Balusu
Course Prerequisites:	NLP I
Course Descriptions:	We will cover topics in Computational Syntax like CFGs, Tree banks, HPSG, Parsing; topics in Computational Semantics like Vector Semantics, Word Sentiment, Word Senses, and Word Net; topics in Information Retrieval and Extraction like NER, Index construction, Term weighting and optimization, Search systems, Text classification and clustering.
Evaluation Scheme	Midterm: Final::40:60

Course Title	LS 282
Course Code	Digital Signal Processing for Linguistics
Semester / Intake	II/IV – 30
No. of Credits	5
Name of Faculty Member(S)	Dr. Indrani Dutta
Course Descriptions:	<p>This course will bring together information from the engineering discipline of Digital Signal Processing (DSP), such as is relevant for linguistics, especially speech processing. We will simultaneously review material from both DSP and acoustic phonetics that will help advance our understanding of not only speech production and perception but also help us examine how our understanding of the basic mechanisms of digital and analog processing impacts current approaches to Automatic Speech Recognition (ASR) and Text-to-Speech Synthesis (TTS). The topics that we will cover will include the following: Discrete Fourier Transform (DFT), Fast Fourier Transform (FFT), Quantization and Sampling, Digital Filters: High-Pass, Band-Pass and Band-Reject Filters, Glottal and Supra-glottal source modeling, Acoustics of vocal tract resonators, Basic auditory processing, Basic introduction to quantal theory, perturbation theory and source-filter theory, Noise spectra</p>
Evaluation Scheme	Midterm: Final::40:60

Course Title	Introduction to Human Sentence Processing
Course Code	LS 288
Semester / Intake	II/IV – 30
No. of Credits	5
Name of Faculty Member(s)	Dr. Atreyee Sharma
Course Description: 150/200 words	<p>This course is a continuation of Formal Semantics I (LS 152), and is intended to give a basic introduction to advanced topics not covered in LS 152. Topics include: Generalized Quantifier Theory; Lambda Calculus; Intensional Phenomena including but not limited to: modality, propositional attitudes, tense, aspect; Anaphora and Indexicals.</p> <p>Prerequisite: LS 152 or equivalent.</p> <p>Recommended texts: Chierchia, G. and S. McConnell-Ginet (2000). <i>Meaning and Grammar</i>. MIT Press (2nd Edition)</p> <p>Heim, I. and von Stechow (2007). <i>Notes on Intensional Semantics</i>. Ms., MIT (downloadable)</p>
Evaluation Scheme	Homeworks (25%), Midterm Exam (25%), Final Exam (50%).

Course Title	Natural Language Understanding and Knowledge Representation
Course Code	LS 289
Semester / Intake	II/IV – 30
No. of Credits	5
Name of Faculty Member(s)	Dr. Rahul Baulusu
Course Description: 150/200 words	We will span the lexical semantics, compositional semantics and semantics-discourse continuum of understanding natural language and constructing semantic representations of sentences, dialogues, discourses, and other large chunks of text from the semantic representations of much smaller and basic building blocks of text by using continuous and scalar tools in the NLP toolbox like vectors, relation instances, and logical forms in the larger context of vector space models, relation extraction, semantic modelling and knowledge representations, especially ontologies, and thus learn how to build explicit models for semantic interpretation from knowledge contained in words, sentences, dialogue, and documents written in natural language, and ultimately benefit from the interlinked nature of these pieces.
Evaluation Scheme	Midterm: Final::40:60

Course Title	Artificial Neural Networks and Deep Learning for NLP
Course Code	LS 387
Semester / I take	II/IV – 30
No. of Credits	5
Name of Faculty Member(s)	Dr. Indranil Dutta
Course Description: 150/200 words	Artificial neural networks have near revolutionized big data analytics. In this course we will apply deep learning to some speech and natural language processing tasks. Students will be exposed to various types of network architectures such as Convolutional Neural Networks, Recurrent Neural Networks, Auto encoders, LSTMs, Generalized Adversarial Networks. We will also learn to execute training and testing data with these architectures with Tensor Flow.
Evaluation Scheme	Mid term: Final: 40: 60