MA COMPUTATIONAL LINGUISTICS - Course Descriptions - (1 September – 16 December 2023)

Course Title	**Introduction to Mathematical Linguistics (core)**
Course Code	**LS 171**
Semester	III
No. of Credits	4
Days/Timings	Monday & Thursday: 4.00 – 6.00 pm
Name of Faculty Member(S)	Dr. Utpal Lahiri
Course Descriptions:	Set theory, Propositional logic, Relations and Functions, Predicate Calculus, Modal Logic, Algebraic Structures (Orders, lattices, Boolean Algebras). Textbook: Partee, B., R. Wall and A. Ter Meulen (1990). Mathematical Methods in Linguistics. Springer.
Evaluation Scheme	Internals (40%), Final (60%)

Course Title	**Introduction to Head-driven Phrase Structure Grammar (Module C for MACL) (core)**
Course Code	LS 188
Semester	III
Day / Timings	Monday & Wednesday: 2.00 – 4.00 pm
No. of Credits	4
No of Students	30
Name of Faculty Member(s)	Prof. M. Hari Prasad
Course Description: 150/200 words	This course surveys the basic aspects and results of Head-Driven Phrase Structure Grammar (HPSG) a well developed, mathematically precise, framework for syntactic analysis via simultaneous constraint satisfaction. Wherever possible, we also compare this approach with competing approaches in other frameworks. Topics discussed include: Feature structures, the linguistic sign, basic clause structures, phrasal projection, the hierarchical organization of lexical and phrasal information, semantic principles, binding theory and dependencies. Ivan A. Sag Thomas Wasow. 1990. Syntactic Theory:A Formal Introduction
Evaluation Scheme	Mid-term: Final::40:60

Course Title	**Research Methodology (core)**
Course Code	**LS 196**
Semester	3
No. of Credits	3
Days/Timings	Wednesdays: 9-11am Thursdays: 2.00 – 3.00 pm
No of Students	30
Name of Faculty Member(s)	Dr. Utpal Lahiri, Dr Anish Koshy & Dr Grace Didla
Course Description	The Research Methodology course in linguistics aims to teach students the fundamental techniques and approaches used in linguistic research. It focuses on developing skills to design studies, collect and analyze data, and draw valid conclusions. This course has four modules: 1) **Research Design**: This module equipslearners with the skills to identify research problems, formulate research questions, build hypotheses, state objectives, and build an appropriate research design based on the nature of inquiry. 2) **Data Collection Techniques and Field Research**: This module on field methods in linguistics will introduce students to issues like data collection techniques, language documentation, fieldwork strategies, analysis techniques, community involvement, ethical considerations and linguistic typology. It will equip them with methods for recording and collecting linguistic data and documenting various aspects of language. 3) **Data Analysis and Interpretation**: This module focuses on training learners how to analyzeand interpret linguistic data. Students will also learn to think about data and experiments in syntax and semantics. 4) **Academic Writing**: This module focuses on equipping learners with the required technical writing skills to present the research experiment. It also draws their attention to the issue of plagiarism.
Evaluation	• Internal Assessment: Assignments (40%) • Final Assessment: Term Paper (60 %)

Course Title	**Introduction to Tagging and Parsing**
Course Code	**LS 277**
Semester	III
Day/Timings	Tuesday & Thursday: 2.00 – 4.00 pm
No. of Credits	4
No of Students	30
Name of Faculty Member(S)	Dr. Atreyee Sharma
Course Descriptions:	It is a follow up of the first course of the same name. In the first part students are exposed to the first layer of Tagging and Parsing namely, Morphological Analyzer, Parts of Speech Tagging, Named Entity and Named Entity Recognition. In the first part LS-277 that is, students read and research on different tag sets, models, challenges and issues regarding Morphological Analyzer, POS Tagging and NER wrt Indian languages. In this course, they will be exposed to Local Word Grouping, Chunking, Parsing and Tree Banks. Shallow parsing or chunking or light parsing) will be taught in terms of analysis of a sentence which first identifies constituent parts of sentences (nouns, verbs, adjectives, etc.) and then links them to higher order units that have discrete grammatical meanings (noun groups or phrases, verb groups, etc.). The term Parsing has slightly different meanings in different branches of linguistics and computer science. Traditional sentence parsing is often a method of understanding the exact meaning of a sentence or word, sometimes with the aid of devices such as sentence diagrams. Students will be introduced to the concepts of LWG, Chunking and Parsing and work out real world data to understand the terms and their significance in the world of NLP.
Evaluation Scheme	Mid-term: Final::40:60