(IT619) NATURAL LANGUAGE PROCESSING

(ELECTIVE - II)

Objective of the Course :

This course aims at introducing students to the area of Natural Language Processing that is useful while dealing with large volume of text on the web. Statistical and probabilistic methods will be emphasized - along with NLP fundamentals.

UNIT - I

Words, Lexicon Design and Processing, Lexical Semantics Syntax, ParsingTechniques (Chart, ATN etc.), Probabilistic Parsers

UNIT - II

Semantics, Knowledge Representation, Frames, Semantic Nets, Noisy Channel

UNIT - III

Metaphor, Hidden Markov Model and Associated Algorithms, Word Level

UNIT - IV

Processing, Part of Speech Tagging, Parsing Techniques, Probabilistic Parsing, IR andLanguage Modeling, Corpus Technology, Lexical Knowledge Networks (Wordnet,Conceptnet, Framenet etc.),

UNIT - V

Machine Translation, question answering and InformationExtraction, Indian Language Computing.

TEXT BOOKS :

- 1. Allen, James. "Natural Language Understanding", 2nd ed., Benjamin/Cummings, 1995.
- 2. Charniak, Eugene "Statistical Language Learning", 2nd ed., MIT Press, 1996.

REFERENCE BOOKS :

- 1. Jurafsky, Dan and James Martin, "Speech and Language Processing", 2nd ed., Prentice Hall, 2000.
- 2. Manning, Christopher and Heinrich Schtze, "Foundations of Statistical Natural Language Processing", 2nd ed., MIT Press, 1999.
- 3. Bharathi, A., Vineet Chaitanya and Rajeev Sangal, "Natural Language Processing- A Pananian Perspective", 3rd ed., Prentice HII India, Eastern Economy Edition, 1995.