

CP5004 LANGUAGE TECHNOLOGIES

DETAILED SYLLABUS

OBJECTIVES

- To learn the fundamentals of natural language processing
- To appreciate the use of CFG and PCFG in NLP
- To understand the role of semantics and pragmatics

UNIT I INTRODUCTION

Words - Regular Expressions and Automata - Words and Transducers - N-grams - Part-of Speech – Tagging - Hidden Markov and Maximum Entropy Models.

UNIT II SPEECH

Speech – Phonetics - Speech Synthesis - Automatic Speech Recognition – Speech Recognition: - Advanced Topics - Computational Phonology.

UNIT III SYNTAX

Formal Grammars of English - Syntactic Parsing - Statistical Parsing - Features and Unification - Language and Complexity.

UNIT IV SEMANTICS AND PRAGMATICS

The Representation of Meaning - Computational Semantics - Lexical Semantics - Computational Lexical Semantics - Computational Discourse.

UNIT V APPLICATIONS

Information Extraction - Question Answering and Summarization - Dialogue and Conversational Agents - Machine Translation.

REFERENCES

1. Breck Baldwin, "Language Processing with Java and LingPipe Cookbook", Atlantic Publisher, 2015.
2. Daniel Jurafsky, "Speech and Language Processing: An Introduction to Natural Language Processing, Computational Linguistics and Speech", Pearson Publication, 2014.
3. Nitin Indurkha and Fred J. Damerau, "Handbook of Natural Language Processing", Second Edition, Chapman and Hall/CRC Press, 2010.
4. Richard M Reese, "Natural Language Processing with Java", O_Reilly Media, 2015.
5. Steven Bird, Ewan Klein and Edward Loper, -"Natural Language Processing with Python", First Edition, O_Reilly Media, 2009.