For students of all Branches [S. Y. /T. Y. /Final year B.Tech. /M. Tech.]

Course Title : Natural Language Processing (NLP) applications using Natural Language Toolkit (NLTK)

Prerequisite: Programming using any high-level language.

Course Objectives:

1. Develop competency to use the Python programming language.
2. Develop an appreciation for structures in natural language which computers are confronted with when processing natural language.
3. Learn various techniques under Natural Language Processing (NLP) to solve language processing problems.
4. Introduce frontier areas in NLP research.

Course Outcomes: Students will demonstrate the ability to

1. Use the Python programming language to solve general problems.
2. Process text by using NLP techniques such as lemmatization, POS tagging etc.
3. Extract meaningful information from a piece of text.
4. Engage various NLP techniques to solve a particular NLP problem.

Course Contents:

Module	Details	Hours
1	Important concepts in Python	4
2	Language Resources: Corpora, Dictionaries and WordNet	3
3	Operations on Text: Normalization, Segmentation	3
4	Part-of-Speech Tagging: Categories of words, various tagging techniques	4
5	Structure: Grammar, Parsing, Phrases, Chunks, Navigating the Structure	4
6	Information Extraction: Named Entities, Relation Extraction, Meaning	4
7	Text Classification: Features, Supervised Classification, Classifiers.	4

Text Books:

1. Steven Bird, Ewan Klein, and Edward Loper, 'Natural Language Processing with Python', O'rielly, https://www.nltk.org/book/.

Reference Books:

Plenty of references to other books and research papers are available in the text book.

Evaluation pattern will be described by the concerned course coordinator during the course.