Module Specification – (Programme Specs Ver. 5.1) 2021/22

Module Code: 21CSAI05H	**Title:** Introduction to Natural Language Processing (NLP)	
Level: 6	**Modular weight:** 10	**Faculty/Dept:** ICS
Pre-requisite modules: CSAI01I, CSCI05I, SCIB07P, SCIB03C, CSCI02C		
Reassessment: No restriction		
Module Leader:		
Semester taught: Two		
Date of latest revision: April 2019		

Aims

The aim of this module is to introduce the main topics in theoretical linguistics, as well as the practical hands on experience for text processing. The student will learn how to make sense of the vast amounts of texts available online and other sources.

Intended Learning Outcomes

On completion of this module students should be able to:

Knowledge and Understanding

1. Describe and understand the core functions of corpus readers, stemmers, taggers and parsers. [A1, A3, A11**,** A12].
2. Understand different Natural Language Processing techniques [A11**,** A12].

Intellectual Skills

3. Design experiments with implemented Natural Language Processing techniques on data sets, and evaluate and reflect on the results [B11].
4. Evaluate the performance of Natural Language Processing systems [B11].
5. Recognize potential real-world applications of Natural Language Processing and evaluate the suitability of Natural Language Processing techniques; given previously unseen task. [B1, B5, B11].

Practical and Professional Skills

6. Use a systematic approach to conducting experiments, given a data sets from any domain. [C2, C4, C6, C11, C12]
7. Use appropriate software tools and apply Natural Language Processing (NLP) methods to text data to fulfil a specific objective. [C2, C4, C6, C11, C12].

General and Transferable skills

8. Develop interpersonal skills working, communicating and collaborating in a team on assigned projects. [D2, D6, D8].

Employability

This module will provide opportunities for students to:

1. Understand the importance of being self-motivated in order to progress the area of work. [A.1, A.5]
2. Understand how to build small practical NLP systems for a number of domains. [B.1.1]
3. Demonstrate effective time management to manage time effectively so as to prioritise tasks and to work to deadlines. [C.1.5]

Indicative Content

Introduction to NLP grammar, types and tokens, part-of-speech tagging, parsing, lexical semantics, information retrieval and extraction (document matching, named-entity recognition), text classification.

Methods of Learning, Teaching and Assessment

Total student effort for the module: 100 hours on average over 1 semester.

Type of session	ILOs Assessed	Typical Student Effort		
		Typical number in the semester/s	Typical hours per week	Total hours
Lecture	1-6	12	2	24
Tutorial	-	-	-	-
Laboratory	4-8	12	2	24
Private study	1-8			52

Assessment

Assessment Type	Weight %	ILOs Assessed	Exam Semester	Exam/ Written Coursework Length
Two group projects , weight of each is 35%	70	1-8	1	N/A
Written class test	30	1,2,5	1	2 Hours

Methods of Feedback

In response to assessed work:

- Developmental feedback generated through teaching activities.
- Feedback will be provided for each assessed component in written form as appropriate.
- Generic exam feedback will be given on the e-learning system.

Developmental feedback generated through teaching activities:

- Dialogue between students and staff in workshops and Labs

Indicative Reading List

- M. Raghavan, and Schutze. Introduction to Information Retrieval. Cambridge University Press, 2008.
- Jurafsky and Martin: Speech and Language Processing (2nd Edition). Pearson, 2009.
- D. Jurafsky & J. H. Martin: Speech and Language Processing: An Introduction to Natural Language Processing, Computational Linguistics and Speech Recognition, Prentice Hall, (2nd Edition), 2009.
- S. Bird, E. Klein and E. Loper, Natural Language Processing with Python, O'Reilly Media, 2009.