

MODULE DESCRIPTOR

Module Title

Text Mining And Natural Language Processing

| | | | |
|-----------|---------------|-------------|--------|
| Reference | CB3104 | Version | 2 |
| Created | February 2024 | SCQF Level | SCQF 9 |
| Approved | January 2024 | SCQF Points | 15 |
| Amended | April 2024 | ECTS Points | 7.5 |

Aims of Module

This module aims to equip students with the skills needed to extract meaningful insights from text datasets using various Natural Language Processing algorithms and techniques. The module will introduce students to a broad area of Text Mining, including Sentiment Analysis, Topic Modelling, and Information Retrieval, enabling them to uncover valuable information from diverse textual sources.

Learning Outcomes for Module

On completion of this module, students are expected to be able to:

- 1 Demonstrate understanding of text mining and natural language processing concepts
- 2 Use text mining and natural language processing algorithms and techniques to extract meaningful insights from text datasets
- 3 Evaluate the performance of text mining and natural language processing algorithms
- 4 Communicate the results of text mining analysis effectively

Indicative Module Content

Fundamentals of text preprocessing, including tokenisation, stemming, and stop-word removal; text analytics workflow; sentiment analysis; topic modelling; text summarisation, recommendation systems. The module engages with UNESCO's Education for Sustainable Development Critical thinking, Strategic, Normative and Integrated problem-solving competencies, enabling students to analyse complex systems, question norms, practices and opinions, reflect on their values and perceptions, and apply different problem-solving frameworks to complex problems.

Module Delivery

The module is delivered via workshops, case studies, lab tutorials, and online exercises.

Indicative Student Workload

| | Full Time | Part Time |
|--|-----------|-----------|
| Contact Hours | 36 | N/A |
| Non-Contact Hours | 114 | N/A |
| Placement/Work-Based Learning Experience [Notional] Hours | N/A | N/A |
| TOTAL | 150 | N/A |
| <i>Actual Placement hours for professional, statutory or regulatory body</i> | | |

ASSESSMENT PLAN

If a major/minor model is used and box is ticked, % weightings below are indicative only.

Component 1

| | | | | | |
|--------------|---------------------------------|------------|------|--------------------|------------|
| Type: | Coursework | Weighting: | 100% | Outcomes Assessed: | 1, 2, 3, 4 |
| Description: | Individual Portfolio Assessment | | | | |

MODULE PERFORMANCE DESCRIPTOR**Explanatory Text**

The calculation of the overall grade for this module is based on 100% weighting of C1. An overall minimum grade D is required to pass the module.

| Module Grade | Minimum Requirements to achieve Module Grade: |
|--------------|--|
| A | The student needs to achieve an A in C1. |
| B | The student needs to achieve a B in C1. |
| C | The student needs to achieve a C in C1. |
| D | The student needs to achieve a D in C1. |
| E | The student needs to achieve an E in C1. |
| F | The student needs to achieve an F in C1. |
| NS | Non-submission of work by published deadline or non-attendance for examination |

Module Requirements

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|--------------------------|-------|
| Prerequisites for Module | None. |
| Corequisites for module | None. |
| Precluded Modules | None. |

INDICATIVE BIBLIOGRAPHY

- 1 CHAKRABORTY, G., PAGOLU, M. and GARLA, S., (2014). Text mining and analysis: practical methods, examples, and case studies using SAS. SAS Institute.
- 2 SARKAR, D., (2019). Text analytics with Python: a practitioner's guide to natural language processing (pp. 1-674). Bangalore: Apress.
- 3 VAJJALA, S., MAJUMDER, B., GUPTA, A. and SURANA, H., (2020). Practical natural language processing: A comprehensive guide to building real-world NLP systems. O'Reilly Media.
- 4 ZHAI, C. and MASSUNG, S., (2016). Text data management and analysis: a practical introduction to information retrieval and text mining. Morgan & Claypool.