

MODULE DESCRIPTOR

Module Title

Data Science Trends and Applications

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|-----------|---------------|-------------|---------|
| Reference | CM4708 | Version | 1 |
| Created | February 2019 | SCQF Level | SCQF 10 |
| Approved | May 2019 | SCQF Points | 30 |
| Amended | | ECTS Points | 15 |

Aims of Module

To enable students to keep abreast of the latest trends in techniques and applications of data science at the forefront of technology.

Learning Outcomes for Module

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

- 1 Analyse and critically evaluate the main challenges to data science posed by real-world applications.
- 2 Critically evaluate the latest developments in data science (techniques, platforms, software etc.).
- 3 Apply some of the latest data science techniques to a real-world application and analyse the results.
- 4 Compare and contrast state-of-the-art data science techniques and methodologies.

Indicative Module Content

State of the art research in data science. Research projects and case studies. Trends and applications, including mining of social media, virtual assistants, sentiment analysis, mining real-time data, intrusion detection systems, and recommender systems.

Module Delivery

The module is delivered in Blended Learning mode using structured online learning materials/activities and directed study, facilitated by regular online tutor support. Workplace Mentor support and work-based learning activities will allow students to contextualise this learning to their own workplace. Face-to-face engagement occurs through annual induction sessions, employer work-site visits, and modular on-campus workshops.

| Indicative Student Workload | Full Time | Part Time |
|--|-----------|-----------|
| Contact Hours | 30 | N/A |
| Non-Contact Hours | 30 | N/A |
| Placement/Work-Based Learning Experience [Notional] Hours | 240 | N/A |
| TOTAL | 300 | N/A |
| <i>Actual Placement hours for professional, statutory or regulatory body</i> | 240 | |

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: The coursework will consist of a report on a chosen state-of-the-art data science technique and application.

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

Prerequisites for Module None, in addition to course entry requirements.

Corequisites for module None.

Precluded Modules None.

INDICATIVE BIBLIOGRAPHY

- 1 Data Mining and Knowledge Discovery. Springer Series.
- 2 SIGKDD Explorations.
- 3 ACM Transactions on Knowledge Discovery from Data.
- 4 Data Science Journal. Committee on Data for Science and Technology (CODATA), International Council for Science (ICSU).