**This Version is No Longer Current**
The latest version of this module is available here

## MODULE DESCRIPTOR

### Module Title

Data Visualisation and Analysis

| | | | |
|---|---|---|---|
| Reference | CMM020 | Version | 4 |
| Created | February 2018 | SCQF Level | SCQF 11 |
| Approved | January 2013 | SCQF Points | 15 |
| Amended | March 2018 | ECTS Points | 7.5 |

### Aims of Module

To introduce the principles and techniques involved in the displaying of data to provide greater insight into the information contained within the data.

### Learning Outcomes for Module

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

| | |
|---|---|
| 1 | Describe and compare different methods of displaying a variety of data types. |
| 2 | Fit data to appropriate models and draw valid conclusions. |
| 3 | Evaluate and re-design given examples of information visualisation. |
| 4 | Develop solutions to display and analyse information effectively. |

### Indicative Module Content

Visualisations: reasons for data visualisation; visualisation requirements; cognitive processes in visualisation; lie factor; data-ink ratio; data variation vs. design variation; mapping data to visual representations; basic charts and their uses; display of quantitative data including univariate, bivariate, trivariate, multidimensional, tree and network data; data visualisation design; data and task abstractions; visual encodings; marks and channels. Analysis: general considerations in data analysis; descriptive statistics; univariate distributions; bivariate data and linear regression; time series; smoothing including moving average and exponential; seasonal effects; additive, multiplicative and mixed models; professional use of data; ethical and legal issues within data analysis.

### Module Delivery

The module is taught using a structured programme of lectures, tutorials, practical exercises and student-centred learning.

| Module Ref: | CMM020 v4 |
|---|---|

| **Indicative Student Workload** | Full Time | Part Time |
|---|---|---|
| Contact Hours | 44 | 44 |
| Non-Contact Hours | 106 | 106 |
| Placement/Work-Based Learning Experience [Notional] Hours | N/A | N/A |
| TOTAL | 150 | 150 |
| *Actual Placement hours for professional, statutory or regulatory body* | | |

## ASSESSMENT PLAN

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

### Component 1

| Type: | Examination | Weighting: | 50% | Outcomes Assessed: | 1, 2, 3 |
|---|---|---|---|---|---|
| Description: | Closed book examination. | | | | |

### Component 2

| Type: | Practical Exam | Weighting: | 50% | Outcomes Assessed: | 4 |
|---|---|---|---|---|---|
| Description: | Practical exam. | | | | |

## MODULE PERFORMANCE DESCRIPTOR

### Explanatory Text

Component 1: Exam worth 50% of total module assessment, Component 2: Practical Exam worth 50% of total module assessment.

Examination:

| | Practical Exam: A | B | C | D | E | F | NS |
|---|---|---|---|---|---|---|---|
| **A** | A | A | B | B | C | E | |
| **B** | A | B | B | C | C | E | |
| **C** | B | B | C | C | D | E | |
| **D** | B | C | C | D | D | E | |
| **E** | C | C | D | D | E | E | |
| **F** | E | E | E | E | E | F | |

**NS** Non-submission of work by published deadline or non-attendance for examination

## Module Requirements

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

## INDICATIVE BIBLIOGRAPHY


1. WARE,C.,2019.Information Visualization: Perception for Design. 4th ed. Morgan Kaufmann.
2. KIRK, A., 2019. Data Visualisation, A Handbook for Data Driven Design. 2nd ed. Sage Publishing
3. TUFTE, E.,2001. The Visual Display of Quantitative Information. Graphics Press.
4. MUNZER, T.2014 Visualisation Analysis and Design. CRC Press.
5. DIEZ, D.M., BARR, C.D., CETINKAYA-RUNDEL, M., 2015. [online] OpenIntro Statistics. 3rd ed. OpenIntro. Available from: https://www.openintro.org/stat/textbook.php [Accessed 25th March 2016]
6. COWPERTWAIT, P.S.P. , METCALFE, A.V., 2009. Introductory Time Series with R. Springer.