**Credit Bearing Module Description**

**Module Code:** COM427 **Module Title:** Principles and Methods of Data Analysis

**Why is this module important?**

In order become a proficient Data Analyst and work effectively with data, you will need to understand a wide range of concepts and principles about data, to recognise the different types of data, its lifecycle, the dimensions of data quality, architecture and the legislation affecting its use. As a Data Analyst, you will be required to solve specific problems using data, to interpret, confirm and work to a set of customer requirements provided to you, to use a range of methods and techniques to analyse the data and present it in a way that is appropriate to the audience and this module will introduce some practical methods and tools to achieve these tasks.

**Pre-requisites:**

None

**Co-requisites:**

None

**What will you learn on the module?**

The purpose of this module is to provide you with a fundamental understanding of core principles of data including understanding the different types of data, data quality, lifecycle and architecture along with an overview of the main legislation, security and ethics when collecting, storing and processing data.You will also look at the information requirements of organisations and explore how to model, analyse and present the data to meet those requirements. In doing so, you will use basic numerical and statistical techniques, languages and tools.

**How will you learn?**

The initial classes will provide you with wide range of theory to introduce the key principles of data and data analysis.For the remainder of the module, more practical techniques will be introduced, and you will be expected to apply these techniques to specific problems or case studies provided to them in the weekly lab sessions and complete them in their own time if necessary.How much time the module requiresThis module is a 20-credit module. For a 20-credit module, you are expected to study for 200 hours (which equates to 10 hours per credit). This total learning time is made up of contact time, directed learning tasks, independent study and assessment activity.

**How much time the module requires**

You are expected to study for 10 hours per module credit. This total learning time is made up of contact time, directed learning tasks, independent learning and assessment activity.

**How you will be assessed?**

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| **Assessment Type\*** | **Title** | **Weighting** | **Length/**  **Duration** | **Must pass** | **Description** |
| Formative | Set exercises | N/A | N/A | N/A | You will have the opportunity to complete activities throughout the module which develop your understanding and provide opportunities for feedback. Activities will consist of specific problems or case studies, quizzes, classroom interactions and, where appropriate, group activities. Feedback will be provided throughout. |
| Summative | Report | 40 % | 2000  Words | N/A | The module has two summative assessments each of which will require you to interpret a set of customer requirements and a sample data set, to apply the methods, techniques, and tools you have learned to complete some data analysis tasks and present your results and findings. For the first summative assessment, you will also be required to look at the data quality issues and recommend ways in which these can be addressed.Data Analysis and Data Quality 2000 word Report |
| Summative | Oral assessment and presentation | 60 % | 10  Minutes | N/A | For the second summative assessment, you will be required you to deliver a short presentation of your findings and take questions from your tutor. Data Analysis Report and Presentation1500 words and 10-minute presentation with Q&A |
| Referral | Report | 40 % | N/A | N/A | You will receive feedback from your first assessment which will help you to understand any weaknesses and potential areas of improvement for the second assessment. |
| Referral | Oral assessment and presentation | 60 % | N/A | N/A | You will receive feedback from your first assessment which will help you to understand any weaknesses and potential areas of improvement for the second assessment. |

*\*Formative: Tasks which help you to learn and prepares you for summative tasks*

*Summative: Tasks which count towards your degree*

**What you will be able to do after the module:**

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| **Outcome Category** | **Outcome Reference** | **Outcome** |
| Knowledge and Understanding | K1 | Understand the different types of data, including open, public and proprietary data, administrative and research data, structured, semi-structured and unstructured data. |
| Knowledge and Understanding | K2 | Describe the principles of the data life cycle and the steps and different methods involved in carrying out routine data analysis tasks. |
| Knowledge and Understanding | K3 | Understand and apply statistical methods to data analysis tasks. |
| Real World Skills | R1 | Interpret customer requirements, analysing and presenting data to meet those requirements, be able to successfully interpret and identify trends and patterns in data sets and present the results and findings from your data analysis in a way that is clear, informative and appropriate to the audience. |
| Real World Skills | R2 | Awareness of the current relevant legislation and its application to the safe use of data. Understand the ethical aspects associated with the collection, storage, and usage of data. |
| Real World Skills | R3 | Identify the different data quality dimensions and understand the risks inherent in poor quality data and how to mitigate or resolve these. |

**How this relates to the dimensions of Solent's Real-world curriculum framework**

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| **Dimensions** |
| Students are challenged to think in critical, creative and applied ways |
| Students are inspired to do research through inquiry, curiosity and problem-solving |
| Students experience an intellectually stimulating curriculum which inspires them to learn for life |
| Students reflect and grow inwardly, socially and ethically to be able to confront the challenges of the world |
| Students face outward to the community, industry and the global environment |
| Students learn from authentic, engaging and programmatic assessment |

**Module Author:** Martin Reid

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| **Credit Points:** | 20 | | |
| **FHEQ Level:** | Level 4 | **Subject Area:** | FBLDT - Computing and Technology |
| **Module Delivery Model:** | Campus Delivery | **Max/min student numbers** |  |
| **Module Leader:** | Martin Reid | | |
| **Hecos Code:** | 100755: Data Management | | |