

Draft Teaching Scheme

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| **Programme Name & Stage:** | Master of Science in Data Analytics – Level 9 NFQ |
| **Module Title:** | Research and Professional Ethics – Part time. |
| **Semester:** | 2 (February – May 2024) |
| **Lecturer:** | Rory Byrne; [**rbyrne@cct.ie**](mailto:rbyrne@cct.ie) |

**NOTE:** This Teaching Scheme is intended as a **GUIDE ONLY**. It is possible that the topics/areas covered may be changed from time-to-time. The areas indicated below are not necessarily sequential, for example an area covered in area number 1 can be covered again at a relevant point later in the module.

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| Area **No.** | **Primary areas which we will cover in R and PE module** |
| 1 | **General Introductory content**   * Key Objectives of the module * Module Structure/Module Expectations (of students)/Module Relevance. * Learning Outcomes explained * Linkage of this module to your Data Analytics project * The role of external reading   **Title/Topic area/Research Objectives**   * Capstone Project Title and Topic areas * Topic Construction approaches * Producing a high-quality Research Proposal * Differentiating between Research Objectives and Technical Objectives. * Problem Definition management   **Assignment One**   * Assignment One overview (questions welcomed) |
| 2 | **Critical research theory areas required for your Capstone Project**   * Key Research Concepts * Managing Bias and Minimising Error in research management * Understanding Validity in research management * GDPR and Ethics in research management and data analytics * Identifying and Researching Vulnerable Groups * The role of datasets in your research |
| 3 | **The Literature Review**   * Writing a Literature Review * Key Organising Principles of a Literature Review * Using appropriate sources for a Literature Review * Sources of valid secondary research |
| 4 | **Sampling Management**   * Population selection and GDPR/Vulnerable Groups * Sampling Method and Sampling Type selections with Justifications. * Census justification * Sampling error and Sampling bias |
| 5 | **Primary Research**   * Selecting the optimal forms of Primary Research for your Capstone Project * Understanding the time requirements for your chosen method/s * Primary Research Methods/Justification of your proposed methods * The role of validity in your primary research methods |
| 6 | **Components of Research Proposal and the Capstone Project**   * Capstone Project Process Flow Diagram/Capstone Project structure & architecture * Using your Research Proposal to form the basis of your Capstone Project * Demonstrating depth in your arguments in your Capstone Project * Writing your Ethics Review in your Research Proposal * Guidelines on how to optimally present your research in the Capstone Project. |

**Important supporting notes:**

**Applying theories to a given scenario** – the key to your success in this module (and also to a significant extent, in your Data Analysis project in your third semester) is your ability to **apply** the material that is covered both in class and by yourself in the external readings to specific scenarios. Your ability to understand theories and concepts at Level 9 **is expected**; I am looking for you to demonstrate your understanding of this module through showing me your ability to apply such theories and concepts in the appropriate manner. A failure to demonstrate this in this module will likely result in you significantly underperforming. Let’s avoid this happening.

Some students find this module to be “**outside their comfort zone**” as it deals with a subject area which is not solely related to Data Analytics. Please give yourself time in the first 2 weeks to perhaps adapt to the fact that you may be required to draw on different skillsets which you may not have had to draw on in your semester 1 modules. If you find this to be particularly challenging or if you feel you are not settling in to the module by week 3, please feel free to contact me, in confidence, by email and I can arrange a phone call/zoom call/face to face meeting at a time that suits you.

**Valid queries** relating to the module are welcomed by myself at [rbyrne@cct.ie](mailto:rbyrne@cct.ie); please allow 3 working days for a response and if possible, please put **MSc DA PT query** in your email title. This will enable me to address your query in a prompt manner.

**Readings** – It will not be possible to cover all external readings and uploaded notes for a given area, in our weekly lecture. All content uploaded on a certain topic is required to have been reviewed by you **in advance of the following week’s lecture**. I will then progress Level 9 discussions/exercises/interpretations of the said content in this lecture. Students who limit their work on this module to solely engaging in the weekly lecture will likely find themselves struggling to keep up with the content, within the first couple of weeks. This is not meant as a negative comment; I feel it is important to highlight this at the commencement of the semester in order to enable you to get as much out of this module as you can.

**Class etiquette** – As this programme is delivered online, the opportunities for interaction between myself and yourself are somewhat limited when compared to a face to face delivery model. This is not a problem and I look forward to us working closely together. To assist in developing a rapport between myself and yourself/yourselves, I would ask that you have your camera on for the full 2 hour period (breaks excluded).

**Chat option –** Questions presented through the chat facility on Zoom will be answered when there is a pause in the flow of the lecture. This will usually be around your break time. Please note chat queries will not receive priority over normal lecture delivery.

**Submission of the Research Proposal** – this will be the key deliverable of this module. This proposal, if undertaken correctly, will form the entire basis of your Data Analysis Project in your third semester. Students must pass the Research Proposal in order to be able to proceed to the Data Analysis Project. **Your Research Proposal is due for submission on May 12th, 2024**

**Assessments** – there are two assessments in this module. These assessments are not integrated with your other modules in this semester. However, they are interconnected themselves – your first assessment will form the basis of your second assessment in the R and PE module.