# MSc in Business Analytics: Dissertation and Practicum Deliverables

## Preliminary Deliverables

Students carry out a **proposal presentation** in late March (of the first year, for part-time students). At this point faculty approve the choice of project and the choice of Practicum versus Dissertation.

Students of the Dissertation (not the Practicum) submit a **skeleton dissertation** at the start of the summer (of the first year, for part-time students).

## Proposal Presentation

An initial project presentation in late March/early April in Semester 2 (in Semester 2 of the first year, for part-time students) formally kicks off the project. This presentation is worth 30% of the Analytics Research and Implementation module grade. It should follow detailed discussion with the supervisor and business sponsor as appropriate. The time allowed is 10 minutes for 1-person presentation, 15 minutes for 2-person. It should clearly describe:

* Project title
* the business problem – motivation
* background including previous work in this area
* the business contribution the project will make
* the academic contribution the project will make (for dissertations)
* the academic justification (for practicums)
* the approach to the problem (including methods to be used)
* what will be required in order to succeed including data
* how success will be measured
* a brief project plan / timeline / plan for risk management/mitigation.

The grading criteria are:

* Addressing all requirements
* Quality of delivery, especially communicating the main research questions, the relationship to literature, and main findings
* Quality of slides
* Professionalism including being on time, adherence to time limit, business dress
* Ability to answer questions and distribution of material and questions among 2-member team if applicable

## Skeleton Dissertation

Dissertation students are required to submit a **skeleton dissertation** in early summer (of first year, for part-time students), worth 10% of the Dissertation grade. Practicum students do not submit a skeleton document. It should contain a largely complete literature review, and significant material in the introduction and methodology chapters. It should clearly frame the problem to be addressed. The skeleton is submitted to Blackboard – Analytics Research and Implementation.

## Final Deliverables

Both Dissertation and Practicum students submit a **draft document** via email to their supervisor and the Programme Director one week in advance of presentations. It is not graded, but is for the supervisor’s information.

Both Dissertation and Practicum students give a **final presentation** in late August, worth 10% of the project grade for the Dissertation or 20% for the Practicum. The slides must be uploaded to Blackboard – Dissertation/Practicum as appropriate in advance (see dates at end of this document).

The Dissertation is aimed at an audience of your peers, that is, people at MSc Business Analytics level, and potentially at professional researchers. The Practicum is aimed at a different audience: practitioners, including decision makers. However, they have much in common, in structure and content.

## Final Presentation

The presentation is similar to the proposal presentation. The time allowed is 10 minutes for 1-person presentation, 15 minutes for 2-person. The guidelines for content are to include:

* Project title
* the business problem – motivation
* background including previous work in this area
* your approach
* your methods
* your results
* academic contribution (for dissertations)
* practical/business contribution (for dissertations and practicums)
* conclusions/outcomes/recommendations/future work
* what we learned (optional)
* the final slide: a 1-slide summary (see below).

The grading criteria are as for the proposal presentation.

The **final slide shown** (ie the one that is showing when you conclude, and the audience claps!) should be a 1-page poster-style summary of your project. It should include your names, your supervisors’ names, your employer/company sponsor name if applicable, a UCD logo, the text “MSc Business Analytics”, and the text “Dissertation” or “Practicum” as appropriate. It should include some graphics such as a flow-chart or diagram or other, and some results in graphical or tabular form, and a little text summarizing the ideas in large font. Our goal in requesting this final slide is that it will serve as a summary of your project which can be used to advertise the type of research carried out on the programme.

## Dissertation/Practicum Structure

The cover of the hard-bound copy should contain the title (top), author name(s) (with previous degrees) (middle), and “M.Sc. in Business Analytics” (bottom left) and the year (bottom right). The spine should contain the author name(s), the year, and “M.Sc. Business Analytics”.

Style files and templates are available in Blackboard for Word/LibreOffice (with Endnote), and Latex (with Bibtex). Please don't follow these blindly. For example: The chapter titles are just suggestions. The template includes both a Preface and a Foreword, and you usually don't want both. The templates may be set for 2-sided printing (for early drafts), but should be changed to 1-sided for final document.

The title page must be unnumbered and contain the following:

Title

Author(s) including previous degrees

"A [dissertation/practicum, delete as appropriate] submitted to University College Dublin in part fulfilment of the requirements of the degree of M.Sc. in Business Analytics"

Michael Smurfit Graduate School of Business

Date (e.g. September, 2016)

Supervisor(s): Xxx Xxxx and Yyy Yyyy

Head of School: Professor Ciarán Ó hÓgartaigh

The remaining front matter pages should be numbered in roman starting from ii.

The front matter should include a Table of Contents, Abstract, Keywords and Acknowledgements. It may include a Dedication, a Preface or Foreword (not both), information for the reader, and lists of figures and algorithms – only if required.

The body should be organized in Chapters, Sections, and Sub-sections. Chapters may include Introduction, Literature Review, Data, Method, Results, Discussion, Conclusion.

The Practicum must begin with an Executive Summary, before the Introduction.

The "back matter" must include a Bibliography. It may include Appendices, Glossary, Index, List of abbreviations, index to notation, and similar – only if required.

A Technical Report-style Dissertation or Technical Report-style Practicum is an alternative style which is available as an option with the permission of the supervisor. The idea is to write a short ~15 page research paper, similar to a standard research paper, with its own concise sections, ready for submission almost as-is to a conference or journal; and to "sandwich" this inside a Dissertation/Practicum structure. The research paper will typically assume that the reader is a professional researcher, and hence is familiar with methods well-known in the domain. The introduction, extended literature review, brief conclusions and bibliography must be retained. A detailed chapter on data may also be retained. A section or chapter on Business Contribution will likely be required if it is not addressed in the research paper. Other chapters may be omitted.

There is no official word limit for Practicum or Dissertation documents. However, a typical length of 30-60 pages for Practicums, and 40-100 for Dissertations, is suggested. Greater length rarely indicates greater quality. We have received excellent Dissertations of 300+ pages (this demonstrates the volume of work required) but we have also awarded low grades to lengthy documents, and we have awarded A grades to Dissertations of less than 50 pages. Therefore, well-edited, concise documents are strongly encouraged. Students are advised to submit samples of writing to their Supervisors early in the process and to notify their Supervisor of the likely length of various Chapters during the project.

## Content

The content of the document should address the following topics: Context, Gap, Question, What done, What found, Answer, Significance. These map in a natural way to parts of the document.

Suggestions for writing: it is usually a good idea to write as you go. Dissertations are required to submit a skeleton dissertation early in the process.

The Abstract should be concise and self-contained, typically less than half a page in length, e.g., 250–500 words.

The Introduction should be more reader-friendly, and a few pages in length. It should set the scene and scope the document, which includes clearly stating some aspects which could have been considered in the project, but are not. It should not include any data or details. It should include some background and discuss significance/importance and state goals. It may conclude with a summary of findings and contributions.

For the Practicum, the Executive Summary should be addressed at an appropriate level to decision-makers rather than fellow researchers. It should summarise the context, the business problem, the findings -- whatever the decision-maker needs to know, to avoid reading your entire document. It should not give detail on (e.g.) machine learning methods employed.

The Methodology should describe and justify the methods you used to address your problem. The justification may consist of "Previous research in the field has used similar methods (cite, cite, cite)", but it should clearly explain that the research questions and assumptions are sufficiently similar to justify this. The Methodology should go on to describe experimental details in sufficient detail for replicability, at least in theory (e.g. operating system and version, software platform and packages and versions, datasets, URLs).

Chapters on Results and Discussion typically follow.

In the Conclusions, you should "step out of the plane of the research, and look down on it from above", indicating contributions, significance, shortcomings, limitations, future work. It is fine for your work to have shortcomings and limitations, and it is better to demonstrate your awareness of these than to hide them. To make the reader's life easy, it is good to explicitly state your contributions, including the novelty you ascribe to them.

Appendices contain things that are relevant to your work, but are secondary. A dissertation/practicum is not required to have appendices. For any digression/extra material, you can ask yourself: would it break the reader's train of thought to include this material in the body of the document? If not, it can be included; if so, it can be moved to an appendix. If you wish to include short fragments of code to help explain some algorithmic point, they can be included in the body of the document. If they are more than a few lines but less than a page, they can be included as appendices. Otherwise they should be on CD/DVD/USB/online only (see later).

## Submission Guidelines and dates

Skeleton dissertation (applies to full-time and first-year part-time): upload to Blackboard – Analytics Research and Implementation in June.

Preliminary/draft document: email to Supervisor and Programme Director Wed 24 August 2016: 12.00 Noon

Final presentations:

Full-time students: Tuesday 30th August 2016: 2.00-6.00pm

Part-time students: Tuesday 30th - Wednesday 31st August 2016: 5.00-8.00pm

Location: C301.

Upload presentation slides to Blackboard by 12 noon on the day of the presentation. The uploaded presentations will be copied to the PC in the presentation venue. Students may use their own laptops at their own risk (time spent on laptop switchover will be subtracted from presentation time).

Final submission of document and poster: 5pm Wednesday 7th September 2016

The dissertation/practicum must be printed in one black hard bound copy and two soft bound copies. To submit physical documents: either give to your supervisor or another course lecturer, drop it in to the Programme Office in the Smurfit School, or give to the MIS EA (Maura Mulvey) in the Quinn School, Belfield.

You must provide any necessary code and data either (1) on a CD or DVD, well-labelled with title, year and author name(s), enclosed with each of the three printed copies, or (2) on a **thin** USB stick, thin enough to stick inside the cover of each document, or (3) via upload to a stable URL such as your account on Github, giving the URL in the document itself. Temporary download sites are not acceptable. Occasionally projects will not require any code or data to be provided: the student is required to obtain the supervisor’s permission for such an exception.

Upload document to Blackboard. It must be in pdf format. Remember that Word, LibreOffice, Powerpoint, and other software can export pdf. For teams of two, only one member of each team must submit. It will be checked by SafeAssign. Also, send via email to the Supervisor and the Programme Director. Do not upload any program code or other data to Blackboard.