# Guidelines for Final Report / Dissertation: The Pandemic Year (2020-21)

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## Introduction

Your Initial Project Concept gave you a chance to put forward an idea for your project.

Your Interim Research Proposal explained how you intended to manage your project.

Your Final Report – often called your Dissertation – should tell your readers what you wanted to do, how you went about doing it (planning and management), the results you achieved and what you believe it all means. Consider the competencies that you have been developing as an engineer – refer to the UK-SPEC competencies – and how your project has benefitted from them. It is your opportunity to communicate your work successfully, and provide you not only with a report for assessment, but also a document for your long-term use as you develop your career.

This year certainly has been unprecedented and you all will have had to think more deeply about how to complete your project while also having to overcome many hurdles. Some of these obstacles may have been immovable and a new direction was required. Please reflect on these issues and discuss how you dealt with the limitations imposed by the pandemic. Completing a final year project in any year is an achievement but this year even more so and so you should be proud. Considering the impact of Coronavirus, the marking scheme has been amended (text in red), in addition please see section 9 of this document for advice on understanding the marking scheme and the effect of the pandemic.

## Developing your Final Report

Throughout the project and now as you develop your final report try and focus on the following:

* Be certain that you understand your project’s “problem”, i.e. the work that had to be done, and the reasons why this work was required.
* Make sure you are clear on the aims of the project and that they were realistic, considering timescales, resources and pandemic restrictions. Your project may have either examined a particular topic in great depth, or combined different areas of thinking into a new whole.
* Demonstrate that you had planned your project from the very start. It is always clear from the dissertation whether you have been working according to a properly planned route, or simply blundering along. For many your journey will have changed direction and so discuss why and how you managed the change. Include an up-to-date plan (e.g. Gantt chart) to fit actual events and with a critical path through it.
* You should have spent some time researching other approaches to the same and similar problems: this can be used in your literature survey.
* Even at this stage, try and have regular contact with your project supervisor.
* If / when you encounter any difficulties, perhaps due to circumstances beyond your control, contact your supervisor and seek advice as soon as possible.
* Check whether your project has completed its PDCA cycle.

The addition of the logbook process, especially your recording of your learning via the UK-SPEC competencies matrix is there to help you remember what you have done, why you did what you did, and it can form the basis for your discussion on the wider impact of your project. Later, you will find it useful for job interviews, promotion panels and professional registration applications.

A project needs to contain your personal input. A review or examination of an existing system / device without clear demonstration from you of your new thinking and activity does not generally produce a project with a high mark.

## The Final Report (Dissertation) – the specifics

Your project investigation concludes with a written document - the Dissertation, or project Final Report. The markers will read, scrutinise and mark this document.

Note: the marks given are for your Report – not the actual project activity: if you conduct your project well, performing good work - but leave the Report to the last week and submit a cursory document, you will not do well.

**Ensure you have considered the feedback and “feed forward” you receive from your project Progress Reviews (in March): make sure you incorporate this into your final report.**

The Final Report is a comprehensive discussion outlining your findings and conclusions from the completed project. As a guide, it should contain the majority of the sections outlined below; take advice from your supervisor and look at the marking scheme on Blackboard. Remember there is comprehensive support provided by the library on referencing, report writing etc (see link). There will also be library support sessions on March 19th & 26th (announcements to follow).

<https://www.uwe.ac.uk/study/study-support/study-skills/reading-and-writing/writing>

You can also book a 1-2-1 with a library member via ‘Appointments’ at [https://infohub.uwe.ac.uk/](https://eur01.safelinks.protection.outlook.com/?url=https%3A%2F%2Finfohub.uwe.ac.uk%2F&data=04%7C01%7CJonathan.Winfield%40uwe.ac.uk%7C924955955a4746481c5b08d8d8eb2280%7C07ef1208413c4b5e9cdd64ef305754f0%7C0%7C0%7C637497851696789397%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C1000&sdata=7uSGmM%2FRR%2FSyKobfePkZlZBxmqkUn0Rug%2FP%2Fg7CCPoE%3D&reserved=0) .

### 3.1 Title page:

Your title page should include the following:

* Your student number
* Your name - on the front page and on the appendices’ forms only
* Your Supervisor’s name
* Project title
* Your award programme
* If relevant, a statement about any associated industrial links or support
* The number of pages in the main body of your text, from the start of the Introduction to the end of the final chapter (normally the Recommendations)
* The number of words, minimum around **9000**, maximum: **12,000**

Note: The word count includes everything in the main body of the text (including headings, tables, citations, quotes, lists, etc.), between the start of the first chapter (Introduction) and the final chapter, inclusive. Your Reference list, Bibliography and the Appendices are **NOT** included in the word count.

### 3.2 The Document

* **Headers and Footers:** Put your student number into the “Header” of your document. Your name is only required on the title page and the appendices’ forms. Add page numbering (either “Header” or “Footer”).
* **Abstract:** A brief statement to introduce the investigation/work, and to state, briefly, the findings made and the conclusions reached. The abstract should normally be between **250 -350 words** in length. Look at journal abstracts to get a gist of how to structure yours.
* **Acknowledgements:** if you wish, add a brief paragraph acknowledging the help and support you received throughout your project. Note that this is a formal document, so you should also write this paragraph formally - not light-heartedly.
* **Disclaimer:** Put a disclaimer in, to show this is your own work.
* **Contents page:** You must provide a full list of all chapters and sub-sections with associated page numbers. Where relevant, further pages can be added after the contents page i.e.:
  + Nomenclature / Glossary of Terms
  + List of Tables
  + List of Figures

### 3.3 Suggested Chapters

A breakdown of what the marking scheme is asking for is in section 9. Here are some suggestions for the chapters you could include, however you may decide to use other headings/sub-headings that are more relevant for your particular project topic. Remember to use sub-headings to help maintain clarity and make it easier for the readers to follow.

* Introduction: The Introduction informs the reader of your reasons for doing the investigation. It sets out the project’s context – the state of knowledge before the investigation commenced, and why you conducted the project. You should state whether the project was a supervisor’s idea based on his/her research interests, part of an industrial project, or based upon your own interests. The introduction should have the Aims, Objectives and Scope.
* Scope and Objectives: This can be part of the Introduction, but you must clearly state your project’s aims and objectives, and the scope in which these are set. At this stage you should refer back to your project plan, and discuss any deviations from the original plan – what was your critical path? Your Gantt chart will be included in the Appendices and so you can refer to it directly.
* Background Research: You need to provide your reader with sufficient background to understand the project and its relevance to you. The Background Research is where you explain your initial thinking about the project’s context. This is developed further through the:
* Literature Survey/Review: You must have researched your project before commencing detailed practical or investigative work. You should continue this process as the project progresses to ensure you stay on track. Analyse and discuss your review’s major findings, and their implications for your project development.
* Methodology: State how you developed your project methodology, based on your background research and reading. Explain why you chose a particular approach, and all assumptions you made.
* Analysis and Evaluation: State all your findings and the various concepts you have evaluated to arrive at the final set of results and conclusions of the research or investigation. The precise make-up of the chapters in the body of the report will be very dependent on the nature of the topic undertaken, such as:
  + Results
  + Analysis: theoretical, computational, design
  + Specification
  + Concept
  + Preferred Design
  + Implementation
  + Testing /Trials
  + Empirical results: analysis of results and discussion
* Critical Thinking/Discussion/Reflection: You must discuss within your Dissertation the project’s significance and context, your opinions of the activities you undertook and your engagement with the related theory. You should begin to formulate your own questions about the theory, and describe how this helps you formulate potential solutions. Additionally, consider how your project relates to the Engineering Council’s Competencies for Engineers **(UK-SPEC)** – this helps you prove you are meeting such professional engineering requirements. Consider the wider context of your project, including ethical, environmental, financial and societal issues. What have you accomplished, how have you grown as an engineer after completing your own project?
* Conclusion: The conclusion draws together the different aspects of the project, comparing the results obtained, or the work achieved, with that originally intended.
* Recommendations for Further Work: At the conclusion of the project, you will have developed other ideas, things that were not within the scope of the original project, but which could be attempted to further the general level of knowledge. These should be itemised in the Recommendations chapter.
* References: You must cite all references you use in the report, and all these references must be itemised in this section. All references must be set up using the UWE Harvard referencing system.
* Bibliography (not compulsory, but is useful): Books or other published material that you have used to assist the study, but which you have not actually cited in the text as references should be itemised, in UWE Harvard format.
* Appendices: Please include the most up to date versions of the forms in the Appendices. If forms have changed from the originals please identify where things have changed and why in the main text of the report. If there are no changes, still ensure you discuss this, to show you have thought about each activity and issue. Therefore your appendices might contain:
  + Project Plan (Gantt chart)
  + Risk Assessment
  + Resources Form
  + Security Form
  + UK SPEC matrix – You can either transfer the one from your logbook or fill in a blank UK SPEC matrix (which can be found on Blackboard). Complete this as best you can; you do not need to fill in all the competencies in the matrix, just those that are relevant to you and your project.
  + Also, if you wish, any supporting material, e.g. pages of tabular results that support the main text but do not fit the “flow” of the report should be included in the appendices. It is not necessary to include data or copies of pages from, e.g. standard catalogues (reference these instead).
  + If you have further material, e.g. CAD models, CFD runs, etc, that you want the markers to see, discuss with you supervisor about the best way to provide access (it may be possible to upload to a USB and hand over, but that depends on what pandemic restrictions are in place at the time of submission).

You will receive marks based on the main body of the report. So you should use your supporting material appendices sparingly – markers will read them only to review detail behind your analysis, if it is ambiguous in the main text.

## Dissertation – Layout and Submission

The dissertation should conform to the following guidelines:

* It should be written in the third person
* Reminder: the word count is:

**12,000 words maximum**

**Note: if you exceed the word count, markers are not obliged to read beyond the limit and so your conclusions and recommendations may not be read or marked!**

* Page numbering is required
* All pages should include in a header your student number and the dissertation title
* Use standard margins
* Use a clear font, such as Tahoma, Calibri or Arial, 12-point size
* Use 1.5 line spacing
* Use headings/sub-headings
* The report is to be word-processed, using Word, Writer, LaTex or similar
* Present graphs, circuit/flow diagrams and other technical material using appropriate software
* Label/legend all graphs/figures/tables appropriately
* You must correctly reference all material taken from other documents, including all diagrams and figures – both in the text and in the diagram/figure label
* Use UWE Harvard referencing style
* Demonstrate your report writing skills by being clear and succinct

## Materials to submit

You must make your submission by **2pm on 29th April 2021**.

* The submission is to Blackboard – no printing required.
* You need to submit your report.
* Your report can be submitted as a pdf or a MS Word document.
* Remember to allow time for your documents to upload – it could take quite a few minutes if you have lots of pictures, figures and diagrams. The time that is logged by Blackboard is when the uploading process **finishes**: allow yourself time before the deadline so you don’t move into the “Late Submission” window.

## Confidentiality Agreements (NDAs) – Reminder

If you have an NDA in place the most secure way to submit your Final Report is as follows:

* Password Protect your file (if using MS Word; click ‘File’, then ‘Protect Document’, then ‘Encrypt with Password’ [be sure to keep a note of your password).
* Let your supervisor know what the password is using a different platform to Blackboard i.e. via email.

## Project Final Report Assessment

The project’s Final Report / Dissertation is the single most important product of the project. It reports the work you have undertaken, your investigations and results, and your conclusions. Remember, your written Dissertation is what will be marked, not your actual project activities.

Your supervisor will read the Dissertation and allocate a mark; a second marker will also provide a mark. Additional academics may also read the Dissertation and give their opinion on a deserved mark, as part of the project moderation process. Second markers may not be experts in the field that you have researched, but will have an engineering background. Therefore, you should write your Report with this audience in mind, conveying to these non-experts the extent of the work that you have executed.

There are many cases of students having done truly excellent, original work - but who ultimately receive only a low mark, because their work was poorly presented – perhaps with many relevant facts being omitted. Presentation, in terms of content, is vital. If you are not sure your presentation skills are good, check with your supervisor for guidance. Remember the importance of proof-reading, get someone to do it for you (they don’t need to be an Engineer to spot mistakes).

## Marking Criteria

The Final Report / Dissertation is worth the following towards your project module mark:

* UFMFX8-30-3 and UFMY8-30-3
  + 85% of Component B (Component B comprises 75% of overall module mark)
  + The Interim Research Proposal comprises the other 15% of Component B
  + The Progress Review (Component A) contributes 25% to the overall module

The Projects’ Final Report Marking Scheme, found on Blackboard in section “Assignments – Final Report/Dissertation”, identifies the criteria that will be used to mark your Final Report / Dissertation. Next is a breakdown of the different criteria in the marking scheme and the impact of the pandemic on this year’s projects.

## Breakdown of the Marking Scheme and the Pandemic

Here is a breakdown of the different criteria of the marking scheme. The more in-depth and the greater attention to detail you provide, the better the mark you will achieve. Below is a summary of what is required throughout your report. There will be many of you who have had their project impacted by the pandemic. The limitations have prevented practical work and there have been issues with IT. Detailed below are suggestions on what alternatives you may incorporate into your project and Final Report to combat the pandemic restrictions.

These are some tips but remember to keep your eye on the marking scheme. Look at the distribution of marks.

The marking scheme is broken down into the following sections:

### 9.1 Aims and Objectives

You will have provided the aims and objectives in your Interim Research Proposal. In this section you extend upon what you reported then. Describe in detail the scope and level of difficulty.

Over the course of the year we have all been operating in uncertain circumstances and you have had to think on your feet and adapt. Therefore, discuss your rationale for any adaptations. If they didn’t work that’s not failure but you do need to discuss and reflect on it. The key is that the experience makes you stronger and wiser for the next time; future employers will be keen to hear how you were able to complete your Engineering Project when shackled by the 2020/21 pandemic restrictions.

**If you are struggling in this area because of the pandemic limitations consider:**

Discussing any adaptations made as a result of pandemic limitations.

Identifying what barriers you faced and discuss how they were dealt with.

### 9.2 Project Management

The list in the marking scheme is self-explanatory and detail is key. You will certainly need to discuss the pandemic in this section. Even if your project was not affected you will have hopefully factored in some contingencies (as recommended at the beginning of the academic year). Discuss the contingencies… Were they needed? Did they work? Would you have done anything differently in hindsight? If your project was heavily impacted by the pandemic the key is that you attempted to incorporate contingencies (whether they were successful or not).

**If you are struggling in this area because of the pandemic limitations consider:**

Discussing how you tried to adapt to the pandemic.

Discuss how successful you think you were in your attempts to adapt to the pandemic.

### 9.3 Context to the Work

This section should be achievable irrespective of the pandemic. Remember to cite all your sources and use UWE Harvard referencing style. As mentioned earlier, there will be library sessions on 19th and 26th March that I recommend you attend (particularly the 19th March session). The 19th March session will focus on critical writing, paragraph structure, evaluative language and referencing (it will be recorded for those that cannot make it). The 26th will be a Q&A session with the library and myself.

A question that always comes up is; Can you use the material from your Interim Research Proposal in your Final Report? Please don’t simply copy and paste from one to the other and leave it at that. You can use what you wrote in the Interim but as a starting point, you will need to expand on what you had written and go into much more depth. Think of your Interim as the appetiser and the Final Report as the main course. You will be adding more references and sources to your report, hopefully some of these sources will also be helpful in understanding your results and evaluating where your project sits in the subject field.

### 9.4 Research Methodology

Describe the theory behind the method, i.e. what methods have you used and why? How you arrived at these is key and referring to the literature will add depth. With the pandemic you may have been restricted to particular methods and so you could describe methods you would have liked to use but were not able. This may even be the development of your own Test Design Specification, one that you can’t physically test yourself but may be invaluable to UWE technicians. This would be a very desirable output for a project where practical work was not possible.

When discussing your research methodology please mention the pandemic restrictions and how they have influenced your journey i.e. what you could and couldn’t do. If you had to change course because of lockdowns or any unforeseen circumstances describe how you tried to adapt the methods. Any adaptation you had to make is evidence of an engineer overcoming an engineering challenge. Many of you will have tried to develop new skills because of the limitations imposed by Covid, this shows resilience and adaptability.

**If you are struggling in this area because of the pandemic limitations consider:**

* Developing your own Test Specification.
* Discussing methods you would have used in absence of pandemic.
* Describing the adaptations made to your methodology due to the Covid restrictions.

### 9.5 Results – Technical Content

Present your results, findings and data. Can you provide evidence from a wide range of sources? For those impacted by the pandemic, there may be a number of alternative routes you could take to achieve your goal such as: using historic data, developing Test Specs, modelling and running simulations. You can also present predicted results. If you are using graphs/figures make sure they are clear and labelled.

It may not have been the scenario you envisaged at the outset but demonstrate that you have still found a way to address the research question. It doesn’t matter if the answer to your research question(s) is not what you hoped for. This isn’t failure but a consequence of any research. A negative result paradoxically is still positive and you should frame it that way because your findings are helping to solve a wider issue (whatever that might be).

**If you are struggling in this section due to pandemic limitations consider:**

* Using historic data if available
* Modelling/Simulation
* Present predicted results (support your predictions through critique of the literature)

### 9.6 Analysis and Scientific Argument

The previous section referred to the presentation of your data/results and this section is all about what your findings mean. In scientific journals, some publishers prefer articles to have a combined Results and Discussion section where the author presents the data and discusses it at the same time, while other publishers prefer distinct sections i.e. a Results section where all the data is presented without any interpretation followed by a Discussion section where the data is discussed. It’s up to you (and your supervisor) how you structure your report, there are so many different types of project that one size doesn’t fit all. Section 3.3 details some suggested titles you might use and there will no doubt be others that are more relevant to your project. However, when you do analyse your data be sure to use the literature to support your arguments.

**If you are struggling on this section because of the pandemic restrictions consider:**

* Discussing predicted results, use the literature to develop your scientific argument. The more sources you critique the stronger your case.

### 9.7 Evaluation and Accomplishment

You should reflect on your project experience, what you have learnt, what skills have you honed, what links to UK-SPEC competencies? At the beginning of the academic year you were asked to factor in contingencies, how did things go even though you knew there would be disruptions? As I’ve already alluded; you may not have accomplished what you wanted, through lack of lab time, IT issues, etc but you should not consider this a failure. Your experience is equally as important and so reflect on the issues, it’s the evidence of logical problem solving that’s important. How you lay out this section is up to you, for example you could have an Evaluation section with sub-headings; such as ‘Evaluation of method’, ‘Evaluation of project’ etc. As mentioned earlier the more in-depth you go the more marks you can hope for.

**If you are struggling on this section because of the pandemic restrictions consider:**

* Provide a comprehensive section on the sustainability/ethical/system engineering elements of your work. Link this back to the UK-SPEC and were appropriate consider the Sustainable Development Goals.
* If appropriate discuss the conclusions you hoped to reach (but were prevented by Coronavirus restrictions)
* Consider risk management in relation to past and present 'Force Majeure' events

### 9.8 Citation

Pandemic or no pandemic you must still focus on accuracy and citing all your sources. Be sure to familiarise yourself with UWE Harvard referencing, see the link below:

<https://www.uwe.ac.uk/study/study-support/study-skills/referencing/uwe-bristol-harvard>

### 9.9 Report Presentation

You get marks for presentation. Read the guidance in section 4 of this document on the style and what to include. Try and save marks by proof-reading your report. As I mentioned earlier, get someone else (a friend or family member) to have a read through as well, they will see mistakes that spell-checker has ~~messed~~ missed.

## Project Feedback

As your project module is completed after submission in April, you may get your feedback by the end of May 2021. However, the collation of marks can take time, so watch out for announcements letting you know when the marks are available.

You will receive the final, confirmed module mark after the full marking, moderation and field board process is completed, normally mid-June. You should expect - and should ask for, if not given – comments on your projects. You are entitled to an email copy of the main points made.