

Assignment Brief

For more information on the details of this module, please see the teaching materials, module forum and other files and information posted on the CO7100 Moodle space. These will include (among many other useful things) details which change from year to year, such as lists of supervisor-student allocations, information about the department and faculty seminar series, and links to information about the university's study skills web pages and training events.

You are required to undertake an approved dissertation in an area relevant to your programme of study (i.e., Cybersecurity, Computer Science or Advanced Computer Science). This must involve a major study on an area not covered by previous modules, or an application of something already learned to a new situation. You will be allocated a member of staff to supervise your dissertation work, who will offer guidance and expertise. However, a Level 7 dissertation is an independent piece of work, and you will have to do a substantial amount of work on your own initiative.

A dissertation is a report, written in a **set academic style**, describing work undertaken to solve a defined problem. It should be **10,800 to 13,500 words** in length, excluding all appendices, illustrations and software. All citations and references **must** be in APA style. For further details, see the CO7100 Moodle page and Study Skills pages on Portal.

Cybersecurity and Advanced Computer Science students please note: your degrees are accredited by the British Computer Society (BCS), who have specific requirements about what kinds of project are acceptable. In their words, **“Projects must include the students undertaking practical work of some sort using computing/IT technology. This is most frequently achieved by the creation of an artefact as the focus for covering all or part of an implementation lifecycle. Dissertations based solely on literature review activity and/or user/market surveys are not acceptable.”** This does not mean that your project has to be highly technical, but it does mean that it must at least include (e.g.) detailed software designs and / or prototypes, using a recognised software development methodology. Students on other courses should note that although the BCS requirements do not apply to you, in practice it is very difficult to produce a dissertation of the standard required to pass at Level 7 if you do not include any practical computer science work.

The Structure of a Dissertation

A dissertation is normally made up of three main parts:

- Preliminaries (Do not count these in the overall word limit)
- Main Body (10,800 – 13,500 words)
- Appendices (Do not count these in the overall word limit)

In a dissertation, each of these main parts may consist of several sections; the addition of appendices and the division of the main parts into sub-parts require common sense and good taste. To get a feel for what is required, read as many academic papers and academic textbooks as you can. Your supervisor can help you with advice about layout and formatting, as can staff from the Study Skills team.

Preliminaries

The preliminaries may be subdivided into:

Title Page

Use the standard title page document for this year, which is available from Aula.

Abstract

The abstract is normally included with, but not numbered with, the preliminaries and no page number is displayed. The Abstract is a statement of the aims, method and results of your research i.e. it is a short summary of the dissertation, designed to help the reader know whether the rest of the document is likely to be useful to them.

Disclaimer

The following statement must be included on the page after your abstract: "This work is original and has not been previously submitted in support of any other course or qualification". This must be signed and dated.

Dedication

When present the dedication should be no more than a few lines and should be placed upon its own page.

Acknowledgments

This is an opportunity to thank the people who have made your dissertation possible. Acknowledgments should be placed upon their own page and may take up several paragraphs, but should not be too effusive.

Table of Contents

This should illustrate the document structure as well as providing pointers into the document. After the abstract, the ToC is the first thing your reader will look at. It should help them to understand what information your dissertation contains, and how it is structured.

Main Body

Subsections

Within a chapter, sections, subsections, and sub-subsections are given titles called sub-headings, which are designated respectively *First-, second-, third-level, sub-headings*.

The different levels of sub-heading are usually visually differentiated from one another, e.g. using the different formatting levels available in MS Word. The purpose of sub-sections (and sub-headings) is to help both you and your reader see and understand the structure of your document, and to make the document as a whole easier to read and understand.

Introduction

Your first full chapter should be an introduction to the dissertation as a whole.

It should include brief descriptions of the following:-

- Why was the work undertaken?
- What scope was given?
- What were the limits imposed?
- What work has already been done in the field (without duplicating your literature review, which comes later)?
- An outline the problem being investigated, leading up to a statement of your hypothesis
- Finish your introduction with a list of the remaining chapters of your dissertation, with a brief description of the contents of each.

Chapters or their equivalents:

The main body of the dissertation is usually divided into chapters, each chapter beginning on a new page and having a title. Every chapter should have its own short introduction section, which explains how it follows on from the previous chapter, as well as a paragraph at the end which summarises the contents of the current chapter, and explains how it relates to the next one.

The structure of the rest of your dissertation should be structured as follows:-

- The *Literature Review*, which must be clearly relevant to the hypothesis, and cover your research methodology as well as the technical background to your project. Depending on your topic, you may need to include literature from other fields, covering social, legal, ethical, business or psychological aspects (for instance).
- The *Methodology* chapter explains what methods you will use to prove or disprove your hypothesis. You need to provide evidence that the methodology you have chosen is appropriate for your type of project, and will allow you to prove or disprove your hypothesis.
- The *Implementation* chapter (which might be divided into several chapters if the length requires it) describes the artefact you have created. This could involve programming,

scripting, databases, web technology, or a more analytical / human-centred approach such as systems analysis or user-centred design. It should contain a clear description of what you have built / created and how, along with references back to the information in your literature review. You must make it clear how your artefact is relevant to your hypothesis. It is also important to demonstrate how you have used the computer science / cybersecurity skills you have learned during your M.Sc. **Do not rely only on a literature review or survey without first consulting your supervisor, as these approaches are not allowed for BCS-accredited courses, and are extremely difficult to carry out to Level 7 standard in any case.**

- *Testing & Results*: You can only prove or disprove your hypothesis if you have done testing and / or theoretical analysis of some sort. Your testing methodology, test plan, results, and analysis of those results, are very important. They should have their own chapter.
- The *Discussion and Conclusion* chapter brings together information from your whole dissertation. You should remind the reader of the reasons why you undertook the project, your hypothesis, and key points from your literature review and methodology chapters. You should then summarise the work described in your implementation chapter, and refer back to the results described in your testing & results chapter. You can then discuss whether you have completely proved your hypothesis, partly proved it (or proved part of it), or completely disproved it. The chapter should be completed with a reflection on the importance of your results, what you have learned, and recommendations what next steps should be taken by other researchers building on your work.

References – Citations in the text

You **must** follow the APA Guidelines, or you will lose marks.

Reference List

As with in-text citations, you **must** follow the APA Guidelines, or you will lose marks. Do not include references which have not been cited in your text.

Appendices

The appendices should be reserved for detailed material that would spoil the flow of the presentation that is found in the main text. They are traditionally labelled using letters e.g. Appendix K, or roman numerals, Appendix XI. As usual, follow the APA referencing guidelines.

Examples of the kind of material usually put into appendices include:-

- Program code
- Ethical approval documents
- Large Tables for example:
 - Raw data
 - Raw results

- Statistical analysis
- Original qualitative analysis
- Extensive quotations from other authors, e.g. description of some methodological tool from a research paper

Generic Marking Criteria for Level 7

Explanatory Notes

The University classifies Level 7 Postgraduate Degrees with Distinction, Merit and Pass. Classifications are made at the point of award, using a formula set out in the Principles and Regulations. Further details and examples may be found on the Registry Services Portal pages.

The criteria offer descriptions of standards of achievement relating to six types of learning outcomes:

1. Knowledge and Understanding of the academic discipline, field of study, or area of professional practice
2. Research 1. Reading and Use of Appropriate Sources
3. Research 2. Methodology
4. Critical Analysis & Interpretation
5. Communication Skills: Creative, Written & Presented
6. Reflection: Critical Reflection and/or Personal and Professional Application

There are various descriptors under these headings, describing different aspects of understanding or skill and in marking bands of 0-100%. Assessors use the ones that apply to the particular outcomes you should demonstrate: if the learning outcomes of your module do not require (for example) critical self-reflection and professional skills, then those criteria do not apply.

	Distinction 90–100% <i>Evidence of...</i>	Distinction 80–89% <i>Evidence of...</i>	Distinction 70–79% <i>Evidence of...</i>	Merit 60–69% <i>Evidence of...</i>	Pass 50–59% <i>Evidence of...</i>	Fail 40–49% <i>Evidence of...</i>	Fail 30–39% <i>Evidence of...</i>	Fail 20–29% <i>Evidence of...</i>	Fail 10–19% <i>Evidence of...</i>	Fail 0–9% <i>Evidence of...</i>
<p>Knowledge</p> <p>Knowledge and understanding of the academic discipline, field of study, or area of professional practice.</p> <p>SCOPE: critical engagement with the primary and secondary sources used to answer the question.</p>	<p>Insightful and sophisticated engagement with research and/or practice pertaining to field(s) and disciplines of study;</p> <p>Sophisticated demonstration and application of knowledge, offering innovative and/or original insights, possibly unparalleled in their application;</p> <p>A sophisticated degree of synthesis, quite likely of complex and disparate material.</p>	<p>Advanced engagement with research and/or practice pertaining to the field(s) and disciplines of study;</p> <p>Accomplished demonstration of knowledge, contributing towards innovative and/or original insights;</p> <p>Extremely high degree of synthesis of research material.</p>	<p>A high degree of engagement with research and/or practice pertaining to field(s) and disciplines of study;</p> <p>Excellent demonstration of knowledge, with the possibility for new insights;</p> <p>A high degree of synthesis relating to research material.</p>	<p>Sustained engagement with research and/or practice pertaining to disciplines of study;</p> <p>An assured understanding of current problems, supported by critical analysis with the potential for new insights;</p> <p>A sustained application and depth of research material and accuracy in detail.</p>	<p>Engagement with relevant knowledge pertaining to discipline and key issues;</p> <p>Satisfactory understanding and conceptual awareness enabling critical analysis;</p> <p>Response is appropriate and addresses the range of learning outcomes; where the knowledge is accurate. Work may lack sustained depth.</p>	<p>Unsatisfactory engagement with relevant knowledge pertaining to discipline and key issues;</p> <p>Insufficient understanding and conceptual awareness of knowledge(s) pertaining to the field;</p> <p>Response does not address the full range of learning outcomes, inaccurate and/or missing knowledge at times.</p>	<p>Inadequate coverage of relevant issues, inconsistent understanding shown;</p> <p>Inadequate understanding of underpinning issues, weak and underdeveloped analysis;</p> <p>Response does not address learning outcomes, inaccurate and missing knowledge.</p>	<p>Lack of relevant research and little understanding shown;</p> <p>Very weak understanding of key issues, work lacks critical oversight;</p> <p>Substandard engagement with research material, misunderstanding evident.</p>	<p>Severely lacking in relevant research and underpinning knowledge;</p> <p>Slight understanding of key issues, little attempt at critical analysis;</p> <p>Slight engagement with research material, inaccurate knowledge and misunderstanding throughout.</p>	<p>Negligible understanding of key issues, which is likely to show no critical analysis or engagement with the learning brief;</p> <p>No engagement with research tasks.</p>

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Sources Reading and use of appropriate sources. SCOPE: accurate and consistent acknowledgment and referencing of sources.	Extensive range and sophisticated use of appropriate sources; Unparalleled standard of research both in breadth and depth, which demonstrates a very high intellectual engagement and rigor.	Extensive range and use of appropriate sources; Extremely well referenced research both in breadth and depth, which demonstrates high intellectual engagement and rigor.	Substantial range and sophisticated use of sources; Well-referenced research both in breadth and depth, which demonstrates clear intellectual rigor.	An assured range of reading, with sustained reference to key and core texts. The work may include current research at the leading edge of the discipline; Very good referencing in breadth and/or depth, which shows a very good level of intellectual rigor; Sources acknowledged appropriately according to academic conventions of referencing.	A satisfactory range of core and basic texts, which references current research in the discipline; Sources acknowledged appropriately according to academic conventions of referencing. The work may contain minor errors and be limited in breadth, depth and intellectual rigor.	Insufficient range of source reading of core and basic texts; Sources not acknowledged in line with academic conventions of referencing.	Reading material is inadequate and may not include core and basic texts; Sources inaccurately referenced.	Very weak engagement with source reading of core and basic texts; Inconsistent and/or limited referencing of sources.	Severely lacking source reading; Sources either not present and/or not referenced.	Negligible attempt to identify source material; No indication of source reading.
Methodology SCOPE: critical engagement with methodologies underpinning original research or current developments in the discipline.	Insightful and sophisticated interpretation, application and evaluation of the possibilities and limitations of the methodologies used by the student and key scholars/practitioners	Advanced interpretation, application and evaluation of the possibilities and limitations of the methodologies used by the student and key scholars/practitioners	Excellent interpretation, application and evaluation of the possibilities and limitations of the methodologies used by the student and key scholars/practitioners	A comprehensive understanding shown and a sustained application of established methodologies and methods applicable to the student's own research;	A satisfactory application of research techniques and enquiry that are used to create and interpret knowledge in the discipline; Research work planned	Unsatisfactory application of research techniques pertaining to the discipline; Unsatisfactory research undertaken, resulting in underdeveloped and poorly	An underdeveloped understanding of established methodologies and those used by the student; Research work is weak and executed inaccurately.	Very weak understanding of established methodologies and those used by student; Substandard research, methods mainly erroneous.	Research works show very little planning and understanding; Erroneous use of methods to explain the work.	Negligible understanding of established research methods and those used by the student; No research methods evident.

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	pertaining to the field(s) of study; Methods used offer new insights and contributions to knowledge.	pertaining to the field(s) of study; Methods used contribute towards new insights to knowledge.	pertaining to the field(s) of study; Methods used may offer new insights or contributions to knowledge.	Research work planned in scale and scope so that robust and appropriate evidence can be gathered and articulated.	systematically in scale and scope so that appropriate evidence can be gathered.	executed work.				
Analysis Critical analysis and interpretation. SCOPE: appropriate analytical discussion and interpretation of source material.	A sophisticated command of imaginative, insightful, original or creative interpretations; An unparalleled level of analysis and evaluation; A sophisticated cogent argument offering new and original contributions to knowledge.	Advanced command of imaginative, insightful, original or creative interpretations; Accomplished level of analysis and evaluation; A highly developed cogent argument with the potential to bring new and original contributions to knowledge.	An excellent command of imaginative, original or creative interpretations; A high degree of analysis and evaluation; A sustained argument with the possibility for new insights to knowledge.	A convincing and sustained command of accepted critical positions; A developed conceptual understanding that enables the student to find new meanings in established hypotheses; A developed and sustained argument with the possibility for new insights to knowledge.	An ability to deal with complex issues both systematically and creatively; A satisfactory evaluation of current research and critical scholarship in the discipline; Ability to devise a coherent critical/ analytical argument is supported with evidence.	A lack of ability to deal with complex issues; Judgements not fully substantiated and understood; The ability to construct an argument is underdeveloped and not supported fully with evidence.	A lack of ability to deal with complex issues; Judgements are not substantiated or understood and the critical position is not made clear; Weak interpretation of research and work is not supported with evidence.	Very weak analysis, possibly limited to a single perspective; Substandard argument, work lacks scholarly analysis and interpretation; Episodes of self-contradiction and/or confusion.	Slight indication of ability to deal with key issues; Slight analytical engagement and reflection, work lacks criticality throughout; Lacks evidence, work shows self-contradiction and confusion.	Negligible coverage of learning outcomes; No attempt to interpret research material.
Communication Communication skills: creative, written and presented. SCOPE: communication of intent, adherence to academic	A sophisticated response, the academic form matches that expected in published and professional work; Mastery and command of specialist skills pertaining to the	Persuasive articulation, where the academic form largely matches that expected in published work; Accomplished command of specialist skills pertaining to the	A high degree of skill, the academic form shows exceptional standards of presentation or delivery; A high command of specialist	Secure and sustained expression, observing appropriate academic form; Fluent and persuasive expression of ideas, work shows flair;	Good expression, observing appropriate academic form; Predominantly accurate in spelling and grammar, ideas communicated appropriately	Unsatisfactory demonstration and application of key communication skills; Recurring errors in spelling and grammar, ideas limited and underdeveloped, possibly poor	Significant errors evident in the academic form; Weaknesses in spelling and grammar, lacks coherence and structure, possibly poor paraphrasing;	Very weak observation of academic conventions; Severe deficiencies in spelling and grammar and expression undermines meaning, possibly	Slight observation of academic conventions; Weak expression, mostly incoherent and fails to secure meaning, poor paraphrasing; Slight engagement with the	Negligible observation of academic conventions; Incoherent and confused expression, poor paraphrasing; No discernible demonstration

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subject discipline protocols.	academic form; Idiomatic and highly coherent, scholarly expression.	academic form, discipline and context(s);	skills pertaining to the academic form, discipline and context(s).	Assured interpretation of the style and genre, content, form and technique for specialist and non-specialist audiences as appropriate.	and satisfactorily; Satisfactory application of specialist skills with effective technical control.	paraphrasing; Skills demonstrated are insufficient for the task and work may lack technical judgement.	Work lacks technical judgement.	poor paraphrasing; Substandard relationship between content, form and technique.	work.	of key skills (pertaining to the discipline); No engagement with the work.
Reflection Critical reflection and/or personal and professional application. SCOPE: Intellectual engagement with the processes by which the work is realised.	Insightful response to critical self-evaluation, reflecting exemplary professional and/or personal standards of engagement and conduct throughout; Sophisticated application of new insights (or highly advanced application of established ways of working pertaining to the discipline).	Advanced level of critical self-evaluation, reflecting professional and/or personal standards of engagement and conduct throughout; Accomplished application of new insights (or advanced application of established ways of working pertaining to the discipline).	A high degree of critical self-evaluation, reflecting professional and/or personal standards of engagement and conduct; Excellent application of new insights (or a highly skilled application of established ways of working pertaining to the discipline).	An assured level of self-evaluation, reflecting sustained professional and/or personal standards of engagement and conduct; Assured application of new or established ways of working; Work evidences thorough independent planning and execution of key tasks.	A satisfactory self evaluation, reflecting appropriate standards of professional and/or personal engagement and conduct; Satisfactory engagement with established ways of working pertaining to the discipline; Independent planning and execution.	Unsatisfactory self-evaluation of professional and/or personal engagement and conduct; Unsatisfactory engagement with established ways of working pertaining to the discipline; Insufficient planning, work not executed in full.	Weak self-evaluation of professional and/or personal engagement and conduct; Weak engagement with established ways of working pertaining to the discipline; Inadequate planning.	Very weak self-evaluation of professional and/or personal engagement and conduct; Substandard engagement with established ways of working; Inappropriate execution of work.	Slight evidence of self-evaluation of professional and/or personal engagement and conduct; Inappropriate execution of key tasks and work may be a cause for concern.	Negligible evidence of self-evaluation of professional and/or personal engagement and conduct; No engagement with established ways of working; In professional or equivalent contexts the work will be cause for concern.