

School of Science and Technology

**COURSEWORK ASSESSMENT ELEMENT**

[Details of Module and Team](#module)

[What Learning Outcomes are assessed?](#module)

[What are my Deadlines and how much does this assessment contribute to my Module Grade?](#contribute)

[What am I required to do in the assessment?](#required)

[What are my assessment criteria? (What do I have to achieve for each grade?)](#criteria)

[Can I get formative feedback before submitting ? If so, how?](#formative)

[What extra support could I look for myself?](#extra)

[How and when do I submit this assessment?](#module)

[How and when will I get summative feedback?](#summative)

[What skills might this work evidence to employers?](#skills)

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| --- | --- |
| **MODULE CODE** | COMP30151 |
| **MODULE TITLE** | Project |
| **MODULE LEADER** | Dr. Andrew Pierson |
| **TUTOR(S)** | All staff |
| **COMPONENT** | 2 of 2 |
| **COURSEWORK TITLE** | Project Report and Demonstration |
| **LEARNING OUTCOMES**  **ASSESSED** | K1-3, S1-3 |
| **CONTRIBUTION TO ELEMENT** | 90% of the overall module mark |
| **DATE SET** | Monday 30th September 2019 |
| **DATE OF SUBMISSION** | 5pm on Friday 24th April 2020 |
| **METHOD OF SUBMISSION** | NOW Drop box |
| **DATE OF FEEDBACK** | Three weeks after submission |
| **METHOD OF FEEDBACK** | NOW drop box and meetings with supervisor |
| Work handed in up to five working days late will be given a maximum Grade of Low Third whilst work that arrives more than five working days will be given a mark of zero.  Work will only be accepted beyond the five working day deadline if satisfactory evidence, for example, an NEC is provided. Any issues requiring NEC [**https://ntu.ac.uk/current\_students/resources/student\_handbook/appeals/index.html**](https://ntu.ac.uk/current_students/resources/student_handbook/appeals/index.html)  The University views **plagiarism and collusion** as serious academic irregularities and there are a number of different penalties which may be applied to such offences. The [**Student Handbook**](http://www.ntu.ac.uk/current_students/resources/student_handbook/index.html) has a section on Academic Irregularities, which outlines the penalties and states that **plagiarism** includes:  'The incorporation of material (**including text, graph, diagrams, videos etc.**) derived from the work (published or unpublished) of another, by unacknowledged quotation, paraphrased imitation or other device in any work submitted for progression towards or for the completion of an award, which in any way suggests that it is the student's own original work. Such work may include printed material in textbooks, journals and material accessible electronically for example from web pages.'  Whereas **collusion** includes:  “Unauthorised and unacknowledged copying or use of material prepared by another person for use in submitted work. This may be with or without their consent or agreement to the copying or use of their work.”  If copied with the agreement of the other candidate both parties are considered guilty of Academic Irregularity.  **Penalties for Academic irregularities range from capped marks and zero marks to dismissal from the course and termination of studies**.  To help you avoid plagiarism and collusion, you are permitted to submit your work **once** to a separate drop box entitled “Draft report” to view both the matching score and look at what areas are affected. It is then down to you to make any changes needed.  Turnitin cannot say if something has been plagiarised or not. Instead it highlights matches between your text and other Turnitin content. There is no Good or Bad score , it depends on the piece of work  If you find your text matching there may be a problem, see the examples below.   1. The reference section is highlighted. This may mean you have referenced correctly and this has been matched with other well referenced documents online. 2. A table containing class data is highlighted. This is acceptable as long as any text accompanying the table is not similar picked up as identical 3. Paragraphs of text in the introduction or conclusion sections are highlighted. This may mean they have been copied exactly from another source. Even if this source is referenced this is bad practice, see advice below 4. A sentence, or part of a sentence is highlighted. Sometimes there are few ways to write a sentence, especially straightforward ones. As long as this does not occur throughout a paragraph this may be acceptable. There will be occasions where a few words within a sentence produce a match. This is acceptable but ensure that this not a common occurrence or a patchwork of copied statements from different sources.   Overall when you look at the work, put yourself in the place of the marker. Is a lot of the work highlighted so it does not really look like the author’s work? If so, then you need to work on it some more  For help, **do not contact the setter of the work**, but use these links ([**Plagiarism Support**](https://www4.ntu.ac.uk/library/developing_skills/referencing_plagiarism/Plagiarism_support/index.html) and [**Turnitin**](https://www4.ntu.ac.uk/library/developing_skills/referencing_plagiarism/turnitin/index.html)support) to book time with staff and students to help with | |

**I.** **Assessment Requirements**

### Introduction

The Final Year Project Report and Demonstration is a major piece of work in Computing and/or Technology that is related to the title and taught modules of your degree course. You will need to read the ‘Project Guide’ for further information on the choosing and planning of your Final Year Project.

**Your project MUST align with your course of study in order for you to proceed with your idea.**

Project reports are a record of what you 'did for your project'. They must be a self-contained record of everything you did, initial thoughts, investigation, planning, design, implementation, testing, proof of correct functioning of any software or hardware, analysis of results, conclusions and recommendations. They must demonstrate your ‘professionalism' and thus include the application of relevant problem analysis and evaluation methods, software engineering principles and indeed project management techniques employed to manage the project itself. Reports must also demonstrate an awareness of relevant legal, ethical, social and professional issues (LESPIs) affecting the area of the project. A section must be included reflecting on future employability aspirations and how skills have been developed through the project that will aid in achieving this aspiration.

Any program code need not be reproduced in full in appendices but must also be submitted.

The report is the only written proof of your achievements, the only written record of how cleverly you used your 400 hour time allocation to produce your project. The report must stand as evidence in its own right without any supportive demonstrations. Screen shots may be included to show that the software does indeed achieve what it is supposed to do. There should be a testing plan including sample output from any tests you deem necessary to show correct functionality. There must be adequate information included for another person to reconstruct your project work should they wish to confirm your findings. Your project report will be the only evidence of what you discovered for your project so it is vital that you include everything in your written report.

Any demonstrations or presentations you make of your project must use exactly the same material as in your project report and not introduce anything extra to the report.

Copying a lot of information does not make a project. Showing that you understand a lot of information does make a project. Understanding is not demonstrated by copying, it is demonstrated by your own views, comparisons, criticisms, and ability to adapt and extend ideas.

Note: COPYING MATERIAL from books, magazines, newspapers, manufacturers' pamphlets, the internet, etc. IS NOT ALLOWED and will be classed as ACADEMIC MISCONDUCT (see section 6).

Note: Loss of work due to system failure will not be treated sympathetically – keep regular backups

### Submission

You must submit an electronic copy of your final year project report along with two bound copies of the report. The electronic version of your report will be used for the project report database and TurnItIn plagiarism detection. Use the dropbox facility within the Final Year Module on NOW. Note: After the closing submission deadline, this drop-box will close and an alternative drop-box – classified as LATE SUBMISSION – will be available for late submissions.

Reports are prepared with a variety of applications, (i.e. Word, OpenOffice, etc.). However, only Portable Document Format (PDF) and Microsoft Word Document (DOC or DOCX) can be submitted as part of your electronic report submission. Please note that the entire report should be saved as one file only. To create a PDF version of your report, you may use WORD (alternatively use OpenOffice). Name your report file <id number>\_report e.g. N01234567\_report.pdf

Source code or any supporting document should be submitted to a second dropbox separately as a compressed ZIP file. Please do not include your report in this file. Name your source files <id number>\_source e.g. N01234567\_source.zip

Source code or any supporting document should be submitted, either in the NOW dropbox, if less than 512Mb or standard storage media such as CD or USB memory.

### Report Secification

### Structure

The main 6 Chapters of the project report must follow items 1-6 of the "Scientific Method" below. This is a way of organising a large piece of work, in a step-by-step manner, by breaking it down into a sensible set of achievable stages that follow logically one after the other. The basic steps of the methodology and corresponding chapters of your Project Report are:

1. INTRODUCTION - Select an area of knowledge for investigation and identify an existing method(s), technique(s), algorithm(s) or system(s) suitable for improvement. Plan, and therefore timetable, a program of research and development, as laid out below.
2. CONTEXT - This should include a literature review in order to detail the State-of-the-Art in the field and the main areas for improvement/further research and determine the LIMITATIONS of the existing method(s), technique(s) or algorithm(s), system(s) (hardware, software, database, etc). These limitations may be in areas or customers currently using the technology as well as in the current functionality of the technology.
3. NEW IDEAS - Propose a NEW method, technique, algorithm or system to eliminate or reduce existing limitations.
4. IMPLEMENTATION or INVESTIGATION – DEVELOP AND IMPLEMENT suitable software, hardware, database or other 'tools' for testing the validity of the newly proposed ideas. This must be performed in a professional manner using the correct tools and techniques for the problem in hand. OR a properly conducted INVESTIGATION based on scientific principles and demonstrates the use of appropriate tools, techniques and standards.
5. RESULTS AND DISCUSSION - Use these tools to obtain RESULTS to show the quality of the new ideas. Results may be graphs, tables or pictures and require DISCUSSION to explain their significance.
6. CONCLUSIONS AND FUTURE WORK - Summarise the project achievements as a set of CONCLUSIONS and suggest how they may lead to FUTURE WORK. Discuss the impact of **all four areas** of LESPIs relevant to the project as implemented and for the future plans. Explain why some areas have high or low impact and how you addressed the impact in each area. You should also include a synoptic assessment in this chapter. This will comprise a reflection on the project in relation to employment aspirations and the skills developed toward this through engagement with the project.

The size of the report will vary depending on the type of project. Typically project reports are somewhere between 10,000 and 20,000 words.

The weightings of chapters below are VERY ROUGH GUIDLINES.

The standard report format is (in strict order):

Title Page

i. Abstract page

ii. Acknowledgements page

iii. Contents page/s

iv. List of figures and tables page/s

Chapter One: INTRODUCTION 5%

Chapter Two: CONTEXT 15%

Chapter Three: NEW IDEAS 25%

Chapter Four: IMPLEMENTATION or INVESTIGATION 15%

Chapter Five: RESULTS AND DISCUSSION 15%

Chapter Six: CONCLUSIONS AND FUTURE WORK 5%

References

Bibliography

Appendices - relevant manufacturer's product details/leaflets, fine details of program/hardware design (perhaps program design diagrams), large tables of results that are summarised in the main work, the very important user documentation, etc.

Keep to this standard format as it helps anyone reading through it to extract information quickly and easily and it creates a good impression of disciplined work.

### Report Template

The report template **‘Final Year Project Report Template’** must be used.

**Details of what should be written in each chapter of the report and the report formatting are given in the report template (and not in this document).**

### Report Title

The title of your project should have been established when the project was agreed with your supervisor. Try to restrict it to 6 or so words. There used to be a limit of 36 characters (the greatest number of letters that would fit down the spine of the report along with your name and year) and that is still about right.

Avoid unnecessary words in your project title, make it concise. A title 'The specification, design, implementation and testing of a Virtual CPU Simulation System' may be very precise but holds little more information than 'A Virtual CPU Simulation'.

However it is most important that the title is accurate, there is little point in titling a report as 'A Virtual CPU Simulation' when what you actually did was to establish a design for one. The title should then be 'A Design for a Virtual CPU Simulation'.

### Writing the report

Avoid making the report too long by "padding out" with text book material or notes: this is easily spotted (and may well constitute academic misconduct!) and only wastes your time and money. The technique of citing references avoids this for it refers the reader to the original material rather than your version of it.

### Some aspects of writing style.

Avoid the use of the first person singular, that is "I". You should never report that "I did this" and "I did that". The whole report should be impersonal, written in the passive voice, "the such-and-such was somethinged".

Not "I wrote a section of C code to" .......WRONG

but "A section of C code was written to" .......RIGHT

If you must refer to yourself, and this is as a very last resort, then you refer to yourself as "the author". For instance:

"The author thought that..."

Even this type of reference can be avoided with:

"It was considered that..."

However this use of third person passive tends to be overused and does become very tedious. An acceptable alternative, that still avoids reference to "I", is to ascribe actions to objects, e.g.: 'A section of C code produced a value in the range.....' or 'For this part of the process a section of C code ....' Here the 'section of C code' is doing something. It is assumed that the section was written by the author of the report.

For reporting what was observed there is the 'lab report style', still using the 3rd person passive, e.g.: 'The temperature was observed to rise to...'. In just the same way as making the C code do something above, here we make the 'object' temperature more active, e.g.: 'Relevant readings were as follows. Temperature rose to ... Pressure dropped to ...'

Much has been written about readability, that is the ease with which the general reader can read your report. It has long been thought that long words and long sentences make for 'foggy' or difficult reading. Indeed the Fog Index attributed to Gunning [1]

Fog Index=0.4\*(Average sentence Length+ % words more than two syllables in length)

attempts to measure how easily a text can be read. A value of twelve is seen as the upper limit, beyond this the text becomes difficult to read.

Another aspect of readability is the length of paragraphs. A general recommendation is that paragraphs shall be short, not so much for clarity as for textual appearance. They should include a particular idea and perhaps contain three or more sentences.

**II.** **Assessment Criteria**

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| Class/grade  Assessment criteria | First (Excellent) | | | Upper second (Very Good) | | | Lower Second (Good) | | | Third (Sufficient) | | | Fail (insufficient) | | | Grade/ Comment |
| **\*Exceptional 1st** | | | High 2.1 | Mid 2.1 | Low 2.1 | High 2.2 | Mid 2.2 | Low 2.2 | High 3rd | Mid 3rd | Low 3rd | Mar’ fail | Mid Fail | Low Fail |
| High 1st | Mid 1st | Low 1st |
| Subject matter – type of work undertaken  (used as basis level – grade may be higher or lower, depends on degree of attainment of goal) | Research, investigative, or trial of novel idea, representing a real intellectual challenge.  Or commercial project with real customer & complex/unfamiliar requirements  **\*Publishable Research** | | | Relatively novel implementation or analysis of a pre-existing topic using an implementation as a test-bed. Or commercial project with real customer in close contact, hard deadlines and requirements. | | | Mainstream, low risk implementation/trial with no external analysis eg ‘doing a database’, ‘investigating phishing’  Commercial customer in theory - but no hard requirements or deadlines. | | | Small-scale implementation eg Front end for database/ superficial investigation with minimal scope and ill-defined question.  No "customer". | | | Lack of understanding of problem. | | |  |
| Project Size | A substantial piece of work requiring the construction of a significant piece of software or the solution of difficult problems  **\*Project requiring the acquisition and use of expertise in more than one specialist area.** | | | The size of the project fully equates to the allocated time of **400hrs** of work.  Some problems require quantitative analysis. | | | Project could have been completed in ~250hrs.  Less than 1000 lines of code written /no quantitative analysis required. Problems are qualitative in nature. | | | About 100 hrs work.  Less than 300 lines of code written or basic investigation undertaken. No significant problems to solve | | | Appears <50 hrs work. Minimal implementation/  investigation - i.e. sub level 3 c/w | | |  |
| Achievement | All main targets completed**/ \*exceeded, or failures analysed and understood in a creative or surprising way.** | | | Most initial targets met or project turned out harder than anticipated and actual progress good (with hindsight) | | | Software only partially working or investigation not completed. Some targets met. Student errors partly responsible. No failure analysis | | | Some software functionality or trials carried out. One target met. Student errors responsible for failures. | | | No functionality. Investigation random or minimal trial carried out.  No targets met | | |  |
| Overall lucidity and information density | High density – every sentence adds value and aids understanding.  **Demonstrates “ownership” of subject.\*** | | | Clear and easy to understand. Occasional circumlocutions occur or additional description required | | | Mostly clear, but somewhat verbose and repetitive | | | Very little information – fails to explain work except in the most general terms. Information poorly organised. | | | Scale of Project so small that little to discuss. Or inability to put over project content | | |  |
| Analytical skills/discussion | Critical skills applied **in depth**\* to every area of document – from survey of existing work to results achieved | | | Reasoned argument in areas of own work, but not necessarily applied to pre-existing or future work | | | Lacks criticism, or comments relatively obvious in nature. Reference to other sources mostly qualitative | | | No critical skills applied – just descriptive. Discussion limited to restating results. Few references to other work | | | Scale of project so small that little to discuss. No sources used, no evaluation. Poor description | | |  |
| English – style, grammar, spelling | Literate, appropriate to content**\*Enjoyable to read** | | | Minor difficulties with English grammar | | | Frequent problems with grammar or reliance on automated spell-check | | | Some incoherent sentences implying difficulty in articulating. Frequent errors | | | Inability to create sentences - points rather than phrases | | |  |
| Boiler plate – Format, Size, Refs., Biblio, Appendices, Outline, Demo | Everything present, numbered & formatted for easy navigation. **Key sections found instantly\*** | | | Some minor problems eg lists of figures, missing biblio, but structure otherwise professional | | | Level of problems indicate rush or sloppy work, though most of structure attempted. | | | Many aspects missing, or document very short. Referencing inadequate though attempted | | | No attempt at presentation. Most aspects missing. | | |  |

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| Class/grade  Assessment criteria | First (Excellent) | | | Upper second (Very Good) | | | Lower Second (Good) | | | Third (Sufficient) | | | Fail (insufficient) | | | Grade/ Comment |
| **\*Exceptional 1st** | | | High 2.1 | Mid 2.1 | Low 2.1 | High 2.2 | Mid 2.2 | Low 2.2 | High 3rd | Mid 3rd | Low 3rd | Mar’ fail | Mid Fail | Low Fail |
| High 1st | Mid 1st | Low 1st |
| Introduction / Scene setting for project (Ch1) | Right level of review for general reader, giving good overview of material to come.  **\*Generates enthusiasm and anticipation in the reader** | | | Reasonably good coverage, but missing some details or too quickly into technical areas | | | Some elements of uncertainty which need resolving by subsequent chapters. Project itself has different emphasis. | | | Coverage leaves new reader in doubt as to direction of report - no clear overview. Significant mismatch with project. | | | Major mismatch between introduction and project. | | |  |
| Context / literature Survey / research on current limitations (Ch2) | Detailed in-depth review of relevant literature and/or products and/or techniques, with pertinent comments  **\*Literature survey reveals new or surprising information.** | | | Good review, but comments or criticisms not sufficiently analytical | | | Review somewhat limited - perhaps to textbooks rather than journals and comments descriptive | | | Appears to have been gained from standard course book or net and regurgitated uncritically | | | Review of "state of the art" with no "limitations" described | | |  |
| New Idea / explanation of new ideas or research (Ch3) | Clear counterpoint to Ch2, justifying idea and explaining its basis as well as content.  \***Idea with true novelty** | | | Idea well defined and explained but not set fully in context or justified as reasonable solution. Idea an extension rather than entirely new | | | Idea not new but a new spin or implementation of an existing well-founded idea. Described but not justified | | | No novelty offered. Description of product unimpressive and fairly obvious, but does specify it | | | No solutions offered –implementation /investigation inadequately specified | | |  |
| Implementation (Ch4) [Relevant where the project involves the implementation of software or hardware] | Relevant level of detail supplied - of design, algorithms etc. Sufficient for reader to understand structure and reproduce without being verbose. Clear impression of process followed. **\*Elegant design/novel implementation** | | | Good description of implementation. Some detail missed or others over-elaborated. Software/scientific method seems to have been performed | | | Design described in outline, but does not give a clear impression of a methodology either scientific or software | | | Reads like a diary of software generated rather than design | | | Reads like a diary unconnected with the rest of the report. | | |  |
| Investigation (Ch4) [Relevant when the project requires an investigation e.g. of client’s requirements or is being used to test a hypothesis] | A properly conducted investigation based on scientific principles and demonstrates the use of tools, techniques and standards for an investigation in this area to a high standard. **\*Develops novel investigation techniques** | | | A properly constructed investigation based on scientific principles that demonstrates the use of tools, techniques and standards for an investigation in this area. | | | A reasonably constructed investigation that may have flaws but does provide useful data for evaluation. | | | An investigation that has substantial flaws and provides only a limited amount of useful data for evaluation. | | | A poorly constructed investigation that fails to yield useful results. | | |  |
| Results and evaluation (Ch5) | Clear experimental method. Results detailed where necessary but overview when appropriate. Rational discussion of good and bad results \***Surprising Insights.** | | | Clear method and description of experiments. Discussion may be less analytical, more descriptive | | | Experimental method not clear though testing appears adequate. Results described but not explained adequately | | | Experiments appear fairly arbitrary and limited, eg may be just a survey of 'friends' on HCI aspects | | | Regurgitation of taught material on testing, no evidence of having actually carried any out. | | |  |
| Own critique and future work, discussion of LESPIs, synoptic reflection in relation to employment aspirations.  (Ch6) | Sets own work in context of aims and prior work in field. Shows good understanding of what is best course of future action. In-depth insights into LESPIs. Comments on success backed up by reference to results.  In depth reflections on skills developed in relation to employability aspirations.  **\*Surprising Insights** | | | Reasonably analytical summary of work, though maybe not fully contextualised. Future work plan reasonable though not properly justified. Good discussion of LESPIs. Clear reflections on skills developed in relation to employability aspirations. | | | Summarises work without. Future plans may lack sense of priorities. LESPIs discussion limited. Some reflections of employability aspirations with limited depth. | | | Purely descriptive. Comments trite and unsubstantiated. Future plans relate to trivial. LESPIs discussion trivial. Limited to no reflective comments on career aspirations in relation to the project. | | | Conclusions incompatible with project itself. Future plans impractical. Lack of understanding of LESPIs. No reflective comments. | | |  |
| Initiative  (Supervisor only) | Student solved major project problems independently. Student presented project in a novel or slick manner. **\*Major idea came from student, or student significantly extended the proposed subject.** | | | Student solved detailed technical problems independently but relied on supervisor for major issues. | | | Student performed basic coding etc independently but used supervisor to solve problems. | | | Student left problems unsolved, resulting in poor performance or relied on supervisor for trivial matters to the extent that supervisor almost did the project. | | | No contact with supervisor or ignored supervisor's suggestions- despite obvious problems | | |  |

**III. Feedback Opportunities**

**Formative (Whilst you’re working on the coursework)**

Meetings with supervisor.

Feedback at review points.

Feedback on marking sheet for the Project Planning Document.

Verbal feedback on the project progress and draft report extracts.

**Summative (After you’ve submitted the coursework)**

Feedback will be given on the marking form and grid for your project and made available on NOW.

**IV. Resources that may be useful**

Referencing styles please use Harvard as detailed [here](https://www4.ntu.ac.uk/library/developing_skills/referencing_plagiarism/referencing_styles/index.html)

Guide to planning your time [here](https://www.kent.ac.uk/ai/ask/index.php) and an automated planner [here](https://now.ntu.ac.uk/d2l/le/content/52836/Home?itemIdentifier=D2L.LE.Content.ContentObject.ModuleCO-1577785)

Further guidance on avoiding cheating is [here](http://www4.ntu.ac.uk/current_students/studying/skills-for-success/copyright-plagiarism/plagiarism.html)

Remember to use Outlook or physical calendars to block out time between lectures and labs to work on this coursework.

**V. Moderation**

**The Moderation Process**

All assessments are subject to a two-stage moderation process. Firstly, any details related to the assessment (e.g., clarity of information and the assessment criteria) are considered by an independent person (usually a member of the module team). Secondly, the grades awarded are considered by the module team to check for consistency and fairness across the cohort for the piece of work submitted.

**VI. Aspects for Professional Development**

The report itself covers examples of:

Writing a scientific-style report

Researching existing literature

Referencing appropriately

Construction and proper labelling of figures

Many of these are useful transferable skills for employment applications or your Skills Portfolio. Similarly, the practical class protocols provide several examples appropriate for use in the Skills Portfolio as bioscience (i.e. subject-specific) skills.