

Honours Project

Module Handbook Semester 1 2021-22

School of Engineering,
Computing and
Mathematics

FACULTY of
Technology Design
and Environment

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1 Module introduction

1.1 Module leader contact details

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Office hours: Please see google calendar

1.2 Academic Liaison Librarian

Name: Penny Robertson
Email: probertson@brookes.ac.uk

1.3 Changes made to the module (if any) in response to student and other feedback

No changes were suggested in response to student feedback.

However, some changes have been made to the assessment and feedback schedule in response to feedback from staff. The intention is to clarify the documentation procedure and to make assessment targets clearer.

1.4 Module Titles and Codes

The Honours Project includes the modules:

- COMP6013 Computing Project
- COMP6020 Cyber Security Project
- ROBO6003 Robotics Project
- COMP6012 Computing Interdisciplinary Project
- COMP6035 Artificial Intelligence Project

1.5 Honours Project Introduction

The Honours Project in computing subjects is a scholarly piece of work concluding in a final report of 8,000-10,000 words. The report will typically describe the research and development of a software artefact, and must meet the BCS requirements listed in Appendix E. The topic must be chosen in accordance with your programme of study. You will also produce a poster presentation and give a demonstration of the software.

1.6 Topic Selection

Students are given a selection of potential topics. These are normally based on the supervisors' own interests or projects suggested by industry. Where the topic is suggested by an external body to the Department, there must be a Brookes supervisor to supervise the dissertation. Students may choose their own dissertation topic provided this is discussed with and approved by the project supervisor. The student topic is further approved by the project supervisor after

submission of the project proposal. At each of these points the proposal is checked for validity for the requirements of the specific programme of study of the student.

Students are expected to apply practical and analytical skills to design, implement and critically evaluate a solution to a problem that meets a real need. Students will demonstrate in-depth technical, problem-solving skills, innovation and creativity. Students will have to conform to the appropriate university codes of practice and ethical requirements. The project must satisfy the BCS, The Chartered Institute of IT, Requirements (see Appendix E).

For students on BSc Computer Science for Cyber Security course the project topic must be relevant to cyber security and within the scope of the subject areas Secure Programming, Low lever techniques and tools, Networks, Systems programming, Operating Systems and Embedded Systems. These areas are in relevant modules at Level 5 and 6.

1.7 Supervision and Academic Support

Arrangements for supervision are allocated by the module leader after discussion with the student. With the guidance of your supervisor, you will set up a plan with you for your dissertation. Your supervisor will be able to assess the level of work required and scope for a suitable dissertation.

The supervisor is available to help and discuss progress but the ultimate responsibility for the project rests with the student. It is for the student to arrange appointments with their supervisor and not for the supervisor to chase students. The student is expected to have weekly meetings with his/her supervisor.

The supervisor should:

- Help the student to clarify the topics and focus the project work;
- Direct the student to relevant areas of information;
- Recommend appropriate methodologies;
- Read and comment on draft versions of parts of any written reports;
- Advise the student about managing the timetable of project activities;
- Provide formative feedback throughout the project process.

It is **not** the role of the supervisor to manage the dissertation or the student's time or to motivate the student. The student should manage his or her time, do the work and write the dissertation. The supervisor should give guidance and direction, not do the project for the student.

Additional project academic support is available via the schedule provided by academics for office hours. Academics will be able to advise on specific specialist areas as indicated in their schedules.

1.8 Ethical Review

All honours and masters level projects in the university are now subject to ethical review. Project ethical review form E1 (and E2 if necessary) must be filled in for each project and submitted to

the Project Supervisor. After the Project Supervisor approves the form the student must submit the form via Moodle.

The forms can be found on the project module's Moodle page. The E1 form is intended to help the student to undertake an initial self-assessment of any ethical issues arising from the proposed project. The student should identify any such issues and discuss them with their supervisor. In general, any project that involves personal interaction with a third party, particularly if these are underage, or that involves interference with computing and network systems that are accessible to a third party, will require an ethical review, and possibly formal ethics permission.

1.9 Duration of the Project

The duration of the project is two semesters i.e. commencing in the first teaching week of the first semester, ending towards the end of the second semester with the presentation component. A schedule of project milestones is given in the next section.

The University typically equates each academic credit point with 10 hours of student effort. The Honours Project therefore requires 30 credits x 10 hours = 300 hours of student effort. This translates to 10-15 hours per week during the entire project period.

Lectures

Lectures take place throughout Semester One and are intended to guide you through the key parts of the process. Indicative topics covered include:

- Introduction to the Project
- Project Management, Project proposal, Ethics Form
- Search Strategies, Referencing and Plagiarism
- Academic writing and literature review
- Testing and Evaluation
- Code Versioning, backups, maintaining code
- Entrepreneurship/Agile Development
- The Tech Show, poster and demo

In advance of the first teaching week, the student should contact their supervisor to arrange a meeting in that week. They should supply the supervisor with a draft of their topic title in advance, if available, to allow it to be discussed at the meeting. This, and subsequent meetings should be documented in the Project Log. Each weekly log entry should contain planned objectives for each week at the start of the week. It should also contain tasks undertaken/completed, targets achieved and records of meetings with supervisor.

2 Student Study Plan

2.1 Semester One Schedule

Please note that the order of these topics may change, depending on staff availability.

Week	Topic	Reading / Activity Online	Submission Deadlines
1	Introduction	1 hrs Lecture 0.5 hrs Tutorial (supervision)	
2	Project Management, Project Proposal, Ethics Form	1 hrs Lecture 0.5 hrs Tutorial (supervision)	
3	Library Induction & Referencing in EndNote	1 hrs Lecture 0.5 hrs Tutorial (supervision)	
4	Literature Reviews & Critical Thinking	1 hrs Lecture 0.5 hrs Tutorial (supervision)	Project Proposal Ethics Form E1
5	Q & A	1 hrs Lecture 0.5 hrs Tutorial (supervision)	
6	Software Version Control	1 hrs Lecture 0.5 hrs Tutorial (supervision)	
7	Testing	1 hrs Lecture 0.5 hrs Tutorial (supervision)	
8	Progress Report, Academic writing, Professional issues	1 hrs Lecture 0.5 hrs Tutorial (supervision)	
9	Academic Poster Presentations	1 hrs Lecture 0.5 hrs Tutorial (supervision)	
10	Employability	1 hrs Lecture 0.5 hrs Tutorial (supervision)	
11	Q & A	1 hrs Lecture 0.5 hrs Tutorial (supervision)	
12		0.5 hrs Tutorial (supervision)	Progress Report

2.2 Semester Two Schedule

Week	Topic	Reading / Activity Online	Submission Deadlines
1-7	Project supervision	0.5 hrs Tutorial (supervision)	
8			Final Report & Presentation

3 Module syllabus

3.1 Module Aim

An individually supervised project to investigate a chosen problem to form an extended study of a topic selected **from a suitable area of the student's programme of study** and that involves the solution of a practical problem. The project is intended to culminate the course giving the students an opportunity to present the breadth and the depth of knowledge gained in their specialist topic.

3.2 Learning Outcomes

On successful completion of this module, students will be able to:	Brookes Attribute developed	Other GAs developed, if applicable
Create, design, manage, plan, carry out, and evaluate a project involving the solution of a practical problem set in an appropriate social and economic context, taking into account other relevant factors such as risk	Academic literacy	Research literacy
Apply practical and analytical skills acquired in the programme to the investigation of a substantial topic	Academic literacy	Research literacy
Apply the scientific method and report findings using accepted formalisms	Research literacy	
Identify and utilise trustworthy information sources, such as the ACM Digital Library to develop a coherent understanding of issues in the domain	Research literacy	Digital and information literacy
Demonstrate the ability to carry out a substantial piece of work independently and critically evaluate the student's achievements and their own personal development	Critical self-awareness and personal literacy	
Use appropriate technologies such as online libraries and databases to find, critically evaluate and utilise both non specialist and technical information pertinent to the project	Digital and information literacy	Research literacy
Demonstrate an awareness of and work in a manner guided by the legal, professional, ethical, security and social issues relevant to the IT and telecommunications industry	Active citizenship	Academic literacy

3.3 Outline Syllabus

The overall aim of this module is to enable the student to produce a substantial piece of work on a topic of special interest chosen from those forming the core of the studied field.

It is expected that by doing so the student will consolidate knowledge and strengthen the skills acquired throughout their period of study.

For a list of possible projects and staff areas of expertise and further guidance on the specific fields see the Project module website which includes the project handbook.

The syllabus will include consolidatory lectures at the start of the module covering project planning, research methods, literature survey and report writing

4 Assessment information

This module follows the principles of the University's Assessment and feedback policy developed in conjunction with the Student Union, to ensure good practice and transparency in assessment and feedback processes. The Assessment and feedback policy can be found in your Programme Handbook or on your Programme's Brookes Virtual site and is also held on the Regulations page in the A-z of Policies section: <https://www.brookes.ac.uk/regulations/>.

4.1 Project Deliverables and Assessment

The summative assessment is divided into two components: **Presentation: 10%, Final Project Report: 90%**. The overall Final Project Report will be assessed according to the requirements below.

Project Log

The Project Log should contain planned objectives for each week at the start of the week. It should also contain tasks undertaken/completed, targets achieved and records of meetings with supervisor. The student should decide on the content with advice from the supervisor. *A recommended practice is for the student to share the supervision record with their supervisor.* Weekly meetings should take place and a record of the meetings included in the logbook.

Interim Deliverables

All interim deliverables should be submitted via the appropriate links on Moodle by the stated deadline. Each document should be headed by a title paragraph stating the student's name, course and matriculation number, the project title and the supervisor's name. These deliverables will inform the grading of the Conduct of the Project Process in the final assessment of the project report.

4.1.1 Detailed Project Proposal and Ethics Forms

The project proposal should be drawn up after a preliminary investigation of the literature. The project proposal is a detailed description of the work to be done. The aim is to help you refine your objectives down to a well-focused and achievable piece of practical work. The detailed requirements and the formative marking criteria are in **Appendix A**. The ethics forms E1 and E2 are available on Moodle.

This deliverable is formatively assessed and will contribute to the final report mark via the "Professional Conduct" requirement.

4.1.2 Progress Report

This deliverable is part of the formative assessment and will help students improve their final reports. The purpose of this submission is to help you with writing your final report and understanding the wider issues related to the project. The introduction and literature review should be drafts of these chapters as they will appear in the final report. The literature review should provide justification of your project and set the context by discussing and critically evaluating the past and current relevant literature sources. The detailed requirements and the formative marking criteria are in **Appendix B**.

This deliverable is formatively assessed and will contribute to the final report mark via the “Professional Conduct” requirement. Both the Proposal and Progress Reports are designed to obtain feedback for your final submission. As such, the content can be polished for re-use in the final report.

4.1.3 Project Presentation and Demonstration

The student will give a presentation, illustrated by a poster and a practical demonstration to the project supervisor and assessor, with a video and an opportunity for questions. The poster summarises the goals and achievements of the project, and are used to illustrate the Project. Demonstration is always required. This will be marked as 10% of the final grade. The detailed requirements and the marking criteria are in **Appendix C**.

4.1.4 Final Report

This comprises one file that consists of the Final Project Report and links to any repositories. The project report will include the literature review, design, implementation, testing, project management issues, reflection and evaluation of the solution/artefact. The final project report, product/artefact and conduct constitute 90% of the final grade. The detailed requirements and the marking criteria are in **Appendix D**.

The report comprises a complete and clear explanation of the problem to be solved. The background should be relevant and placed in context. Evaluation of outcomes in the conclusion should be thorough and critical. Reflection should show insight into mistakes made and lessons learned. If you are not sure what that means, ask yourself these two questions: If I did this project again, what would I do differently? When I next tackle a software project, how will I change my approach? This should extend to reflection on process and methodology. Was your approach to tool selection effective? Was your design methodology appropriate for your project? Was your testing procedure adequate? (These are sample questions to consider, not a tick-list.) Finally, where appropriate, your report should show proper consideration of legal, social, ethical and environmental and any other professional issues relevant to the project.

The problem should be analysed accurately and in depth. There should be evidence that the design process has been carried out using professional tools and methods such as those presented in the taught modules.

The implementation should follow the design and conform to the specification presented earlier. Important issues arising during this phase should be discussed in detail. The implementation should be thoroughly tested (and where appropriate user-evaluated) and that testing (and evaluation) should be documented. It should be clear exactly what has been implemented from the report alone: evidence from other sources, such as the demonstration, may not be assumed to fill in any gaps. Conversely, an inaccurate description of the implementation will be penalised. Any feature of the implementation described in the report must be demonstrated on request. In summary, to count towards this grade, the implementation must be both delivered in reality and described clearly in the report.

The report should be neatly word-processed and conform to the stated document specifications. Spelling, punctuation and grammar will be taken into account. The narrative should be clear and unfold in a logical manner. Appropriate use of images, diagrams and tables enhances a report. These should be numbered and captioned. Background material that is useful, but would disrupt the exposition, should be placed in appendices. References must be cited in the text.

Legal, Social, Ethical, Environmental and Professional Issues

The Honours project brings together all of the skills that you have learned over the course of your study. This applies to your appreciation of professional or 'external' issues as much as it does to your application of technical skills. It should be evident from your conduct and your report that you are fully engaged with the legal, social, ethical, environmental and risk management issues that impact on aspects of your dissertation.

The Chartered Institute for IT (formerly British Computer Society - BCS) provides offers useful guidance to professional issues via its Code of Conduct:

<http://www.bcs.org/category/6030>

Similar codes of practice / ethics can be found online for other professional bodies, including:

- IET - Institution of Engineering & Technology
- ACM -Association for Computing Machinery
- IEEE - Institute of Electrical and Electronics Engineers

The process for conducting Risk Management is outlined in various international standards such as ISO/IEC 27005, which is available via the library.

Report Front Cover Page

This must be completed using the template on Moodle and signed electronically by the student. The work will not be accepted for assessment unless the front cover and its declaration has been included and signed. See link for university project and dissertation requirements:

<https://www.brookes.ac.uk/students/your-studies/projects-and-dissertations/>

4.2 Presenting coursework for assessment

Your written assignments must be presented in the following format:

- It must be word-processed in 11 point Arial font
- It must be black text on a white or ivory background
- All pages must be numbered
- Margins must be as follows: Top: 1 inch, Bottom: 1 inch (2.5 cm), Left: 1.25 inches, Right: 1.25 inches (3.2 cm)
- Use a line spacing of 1.5
- Numbers and captions to figures and tables should be at the bottom of the figure or table. If the figure or table is mounted sideways into the report, then its bottom is on the right-hand side of the report.
- The report itself should not normally contain more than 80 tables / figures.

4.2.1 Assignment length

The length of each written assignment is limited by a set number of words to contribute towards the development of writing skills and to ensure all work is assessed equitably. We therefore require you to complete your assignments within the number of words specified in the assignment brief.

The specified word count refers to the main body of the report and does not include front cover, title page, contents page, abstract, reference list, bibliography or appendices. The word count does include headings, tables and in-text citations, but not equations or diagrams.

Appendices will be taken into consideration when awarding the final mark.

Words that exceed the maximum allowed by more than 10% will not be marked. If in doubt, you should discuss this with the Module Leader **before** submission.

4.2.2 Turnitin

Assignment(s) for this module will be submitted through Turnitin. Turnitin is a web-based tool that supports the development of good academic practice when preparing written work for assessment. This text-matching tool allows academic staff to check assignments for improper use of sources or potential plagiarism by comparing it against continuously up-dated databases (including web-pages and other student work).

You will have the opportunity to use Turnitin formatively on a draft submission of your literature review.

The new Turnitin policy effective from September 2020 can be found via this link. You are expected to be familiar with it.

<https://www.brookes.ac.uk/regulations/>

Guidance to help with interpretation and use of Turnitin is provided here:

<https://www.brookes.ac.uk/students/your-studies/turnitin/>

4.2.3 Submission date and instructions

All submission deadlines are on Moodle.

Please give the files which you upload a name which begins with your student number. For example '12345678_annotatedbibliography_moduleXXXXX'

Please ensure you submit your assignment no later than the deadline on Moodle (these are fixed deadlines, but students may exceptionally secure an extension if last minute untoward circumstances affect your ability to submit on time). Please see your Programme Handbook for more details. Please note the use of this extension is monitored and restrictions in place for overuse.

<https://www.brookes.ac.uk/students/your-studies/exceptional-circumstances/>

The Blue Marking Card adjustment is only available to students who have an Inclusive Support Plan (ISP) specifying this adjustment. Eligible students who wish to use this adjustment must:

['Add Blue Card' when submitting work through Moodle and Turnitin.](#)

Recommendations for Reasonable Adjustments are made in accordance with the provisions of the Equality Act 2010. These are detailed in Inclusive Support Plans (ISPs) and need to be implemented unless there is a clear rationale for this not being possible, in which case we are accountable as an HEI for this decision. Alternatives should be considered, and further advice sought from the Disability Advisory Service to ensure we are compliant, consistent, and following best practice.

Inclusive Support Plan (ISP) extensions of up to 3 weeks are applicable to all assignments in this module. If you have an Inclusive Support Plan you can check the full details of the adjustments, including whether you have coursework extensions in [Student Self Service](#).

If you have a coursework extension as part of an Inclusive Support Plan, contact your module leader if you are unclear about your deadlines.

Students who have an extension because of an ISP or a successful exceptional circumstances application (or both) can also use an extension if the need arises.

4.2.4 Marking and moderation of your work

Following internal moderation, a sample of work is reviewed by the External Examiner for the programme to ensure that the standards applied are comparable to those at other institutions. To read how your work is moderated please go to your programme handbook for details.

4.2.5 Feedback

Feedback on your work will be provided in a range of ways at various times throughout this module, and different feedback will serve slightly different purposes. Feedback is designed to support your learning and help you to improve subsequent work, so you need to engage and get the most out of the feedback provided.

Please note that feedback is provided throughout the module not just on formal tasks. It will be provided on your work and contribution in class, on the formal assessment tasks and, in some circumstances, during staff office hours.

If you would like further information about feedback, or how to use it, please talk to your tutor on this module or your Academic Adviser or Programme Lead.

Formative feedback will be provided in tutorial sessions.

Summative feedback will be provided in accordance with the marking scheme and marking rubric detailed in the assignment briefs.

Formative feedback will normally be provided within 14 working days of submission.

Please note that all marks are provisional until they are ratified by an Examination Committee.

4.3 Resit coursework requirements

Refer to the University Resit and Retake Policy

<https://www.brookes.ac.uk/students/your-studies/resits-and-retakes/>

Resit submissions must be accompanied by a detailed summary of the changes that have been made, in response to supervisor feedback.

5 Working on Your Dissertation

Whatever type of dissertation you are considering, you will need to research the background of the subject. However, before you even start to carry out your literature search there are a number of things you will need to consider:

- Where might I find the information?
- What time span am I thinking of. How up-to-date must it be?
- Should I only consider what is happening in this country, or internationally?
- Should my research be limited to publications in English?
- What sources could I use to begin my search?
- What help can I get (or shortcuts can I take)

Having thought about these, you can now start to look for information, see Section 5.2 for more details. Examples of past dissertations are available in the library or on Moodle.

5.1 Project Management

Managing a project plan forms a key component of the dissertation development process and will enable students to anticipate problems to ensure that work is completed on time. Additionally, some basic management in recording regular progress and backing up data is essential to managing the dissertation.

Project Plan

The timescale for designing, creating and evaluating the artefact that you will produce during your project is quite tight, so it is important to create a realistic plan right at the start. You might begin by articulating your overall product vision: Who is it for? What will it do? How will it work? This can be refined later into an overall project **aim**: a single sentence summarising the broad, over-arching goal and the potential user group(s). This should be supported by a short list of measurable **objectives** that are designed to meet the aim. Further details may include a list of **activities** or tasks that need to be fulfilled to accomplish each objective. Finally, you should document each of the key **deliverables** that will be produced. All of the above will depend on which particular software development methodology (e.g. Agile, Waterfall) you have chosen in order to undertake your work. Once the details have been established, the deadlines should be summarised in a concise chart of activities and milestones, with time allocation (e.g. Gantt, or PERT), development goal deadlines (e.g. sprints), deliverable deadlines.

Data Management

You will find the task of writing up your project report much easier if you carefully manage your data right from the start, keeping notes of any critical design decisions and the rationale behind them. You should create repositories for all of the data that you will create during the course of the module. For example, requirements or user stories, sprint plans and reviews, evaluation and testing documentation should all be carefully managed and shared with your supervisor. Literature that has contributed to your Background Review should also be stored and annotated

systematically. The repository should be stored safely, e.g. on Google Drive, to avoid any issues of data loss. As part of this process, it is recommended that you maintain a logbook from the planning stage onwards.

Logbook

This should prove invaluable throughout the dissertation. It can record day to day events such as strategic decisions, references to articles and other work and literature searches, practical design considerations, experimental data, useful addresses, etc. It could be paper-based or electronic, depending on which is found more convenient.

Additionally, a record should be maintained of your supervisions, whether face to face or email etc. Students should record the date and purpose for each arranged supervision or communication and then give the conclusion, decision or actions agreed. A recommended practice is for the student to share the supervision record with their supervisor. Records in your logbook will also allow students to discuss concrete details and problems with the supervisor in a more structured way, thereby optimising the time available.

Careful note-taking in the logbook will save effort in the long run because at the writing-up stage you should find all the relevant information in your logbook where details of events that occurred several months earlier could be lost.

Version management

Students are responsible for producing regular backup copies of any electronic files produced as part of the dissertation. Students should organise backups to ensure putting yourself in the position where you could be devastated by the loss of electronic files stored on a single source. Remember computer crashes and disk failures are not an adequate excuse for late or missing work. It is recommended that you use an industrially-recognised version control system, such as Git, to keep track of your software development versions.

5.2 Library Resources

For details of resources and guides available in the Brookes library for literature searching see: <http://www.brookes.ac.uk/services/library/subject.html>. Note that one lecture will cover these also.

Beginning your search

Textbooks may give excellent background information, but they will not provide detailed information about current research – you'll need to use a range of other sources. Review articles may give you a good starting point, and journals will be essential in giving you more detail on the subject you're interested in.

Reviews and Subject Encyclopaedias

A review covers the entire scope of a topic, outlining what has been done and what is known about it. If you are fortunate enough to find a recent review, then you can search back using the references it cites and find other papers on the same topic.

You will also find a number of review journals in the Library, which contain review papers and surveys of particular technologies.

Journals

Journals may provide an important source of information for your dissertation, as they contain details of current research and recent developments in a subject. Articles in journals tend to focus on specific aspects of a subject in detail and often cover topics that are not written about elsewhere.

The Library holds a selection of relevant journals in your subject area and some of these can now be accessed electronically. Journal titles are listed on the Library. Electronic journals can also be accessed from the Library homepage, by clicking on Electronic Library.

Databases – abstracts and indexes to journals

The topic you choose for your dissertation may be covered by a large number of journals. Rather than browsing through individual journals, an online database will allow you to search through the contents of many journals at once, to find out what has been written in your subject area.

When you search a database, you will see the bibliographic details (author, article title, journal title, volume, page numbers), or citation, of all the articles published on your subject in the journals monitored during the time period covered. Most databases will also include a short summary, or abstract, of the article. Frequently the abstract will give sufficient information to enable you to decide whether or not you need to see the original article.

In some cases, there will be a link from the database to the full-text of the article itself. In most cases, however, you will need to check the Library Catalogue to find out whether the journal is held in Brookes Library.

Some key databases for computing subjects are:

- ACM Digital Library <http://dl.acm.org> – for journals, articles, ebooks, conference proceedings and full text journal articles
- IEEE Xplore Digital Library <http://ieeexplore.ieee.org/Xplore/guesthome.jsp> – The IEEE publish many of the top journals in electronic engineering, telecommunications, and computing. The Brookes database provides access to abstracts only.
- Springer Computer Science <https://www.springer.com/gb/computer-science/>
- Sciencedirect <http://www.sciencedirect.com>

Learning to use these facilities

You will be able to use electronic databases more efficiently if you first go on a short training course. Regular training sessions are offered by the Subject Librarian. You can also contact the Subject Librarian for individual help using library resources or finding materials on a particular subject area.

Accessing information not held at Oxford Brookes University Library

As you search for information, you will almost certainly encounter references which are not held in the Library.

Other libraries

Oxford is the home to many specialist and research libraries, including the Radcliffe Science Library (RSL), the science part of the Bodleian Library. You may apply to use the Bodleian for reference purposes, but you do not have an automatic right of access. To apply, you must be recommended by your supervisor and your Subject Librarian. Application forms and more information are available from the Library Enquiry Desk. You should not visit any of these libraries without first consulting your Subject Librarian.

Inter Library Loan (ILL)

This is a system by which books or journals may be borrowed from other libraries. To request an ILL you need to fill out form, available from, the Library Enquiry Desk giving details of the reference you want to borrow. You are entitled to submit up to 40 requests per year at a subsidised cost.

6 Regulations and Policies

The following regulations are important policies which you need to be aware of in relation to your studies and in relation to this Module. They are also detailed in your Programme Handbook.

Exceptional Circumstances: Do ensure you are familiar with the Exceptional Circumstances policy and how it operates if you need to access it for this module.

<https://www.brookes.ac.uk/students/your-studies/exceptional-circumstances/>

Resit and Retake Policy: Do ensure you are familiar with the policy and how it operates if you have a resit for this module.

<https://www.brookes.ac.uk/students/your-studies/resits-and-retakes/>

Student Conduct including Academic Conduct: The University takes this issue very seriously. You are expected to have familiarised yourself with these regulations.

<https://www.brookes.ac.uk/students/sirt/student-conduct/academic-misconduct/>

Turnitin Policy: The new Turnitin policy effective from September 2020 can be found via this link. You are expected to be familiar with it.

<https://www.brookes.ac.uk/regulations/>

7 Intellectual Property and External Clients

Intellectual Property Rights are defined in your Terms and Conditions of Enrolment.

<https://www.brookes.ac.uk/about-brookes/structure-and-governance/policies-and-financial-statements/terms-and-conditions-of-enrolment/>

Some dissertations are developed in collaboration with external clients and this section provides guidelines for students and clients to be aware of to ensure a successful collaboration. Such 'live' dissertations are encouraged since becoming involved in real development and business can provide valuable experience and can add positively to the student's professional development and CV.

When setting up a client-based dissertation it is important for the student to understand the client's expectations and deadlines as well as the dissertation requirements and for the client to understand the student's expectations and particularly the assessment requirements and timings. The supervisor must first assess the content, relevance, and level of proposed external project to ensure that it meets BSc dissertation requirements.

The dissertation assessment must be undertaken by Brookes staff as supervisor and second assessor. This is required to ensure that the assessment for each student is fair and equitable. Client contact for different dissertations varies from minimal to those with a strong client focus. Usually there is an individual client contact to liaise with the student. Such client representatives may be invited to meet to discuss dissertation issues with the Brookes dissertation supervisor and may be invited to attend student presentations etc. Such client contact is encouraged but is not compulsory or essential. Also, although clients do not formally contribute to the student assessment, informal feedback from the client may be considered in the overall assessment. Clients will generally have an expectation as to the technical competence and professionalism of a student.

It is understood that the university does not have control over the way the client interacts with the dissertation. If things start to become difficult the student needs to keep the university supervisor informed.

Finally, since the work is being undertaken for an external client then any copyright will be held by the client so that they can make further developments as needed. Should the work be of a confidential nature then appropriate arrangements, such as setting up formal non-disclosure agreements and excluding technical reports from public access can be arranged by the module leader. Please contact the module leader if you are in this situation and would like some guidance.

8 Useful Resources and Links

Library: Your Academic Liaison Librarians can help in relation to your Subject. Please follow the link below and select your subject area where you will find specific help for your discipline.

<https://www.brookes.ac.uk/library/subject-help/>

You are welcome to contact us for one-to-one help with:

- finding relevant information for assignments and dissertations
- using online resources
- referencing your sources

The Centre for Academic Development offers confidential one-to-one tutorials on study skills, maths and stats, Academic English modules and courses, writing retreats and a wide variety of online resources to help you succeed. Find out more at <https://www.brookes.ac.uk/students/academic-development/>

Academic Integrity:

Academic integrity means doing your own work and giving credit to others for their work. It involves following good practice in all of your assignments and avoiding academic conduct problems such as plagiarism and other forms of cheating.

Academic integrity course <https://moodle.brookes.ac.uk/course/view.php?id=40559>

Before doing any assignments, you should complete the Brookes academic integrity course, designed for you to understand academic integrity and what it means in your approach to assessment.

Guidance from Centre for Academic Development on Academic Skills development

including online resources about academic integrity and 1-1 support for students with understanding academic integrity issues in their work, such as when problems with plagiarism have been identified. The link below takes you to the A-Z of online study resources and you could find this really useful during your studies:

<https://www.brookes.ac.uk/students/upgrade/online-resources/academic-integrity>

Library guidance on citing references and plagiarism

<https://www.brookes.ac.uk/library/library-services/information-skills/citing-references-in-your-work-and-plagiarism/>

CiteThemRight Oxford Brookes uses CiteThemRight for automatic guidance on how to reference sources

<https://www.brookes.ac.uk/library/library-services/information-skills/citing-references-in-your-work-and-plagiarism/>

Referencing and understanding plagiarism (library e-book). <https://www.dawsonera-com.oxfordbrookes.idm.oclc.org/abstract/9781137530721>

Williams, K., & Davis, M. (2017). *Referencing and understanding plagiarism* (2nd ed). London: Palgrave Macmillan.

This book provides guidance about referencing any source in any system, and guidance about understanding good practice and avoiding plagiarism.

Student Investigation and Resolution Team (SIRT) student academic conduct

The SIRT team are responsible for academic conduct investigations at Oxford Brookes. The link provides information about the regulations and procedure for investigations.

<https://www.brookes.ac.uk/students/sirt/student-conduct/>

Academic conduct regulations

<https://www.brookes.ac.uk/regulations/current/appeals-complaints-and-conduct/c1-1/>

It is important to be aware of the academic conduct regulations to follow, in order to avoid problems with academic integrity.

Proofreading: The University Policy [here](#) and access to useful resources

<https://www.brookes.ac.uk/students/upgrade/online-resources/editing-and-proofreading/>

Equality, Diversity & Inclusion: <https://www.brookes.ac.uk/staff/academic/inclusion/>

9 Appendix A Project Proposal Outline and Mark Scheme

The following is a suggestion of a possible layout for your Proposal. **You do not have to use this layout** if it is not appropriate for your work.

Length = 1000 – 1500 words.

Sections and subsections should be numbered for cross-referencing purposes.

Cover page: *Title, Name, Student number, Table of Contents*

1. Introduction

- 1.1. Background (overview of topic and motivation)
- 1.2. Aim
- 1.3. Objectives
- 1.4. Product Overview
 - 1.4.1. Scope (What will it do? How will it work?)
 - 1.4.2. Audience (Who is it for?)

2. Background Review

- 2.1. Summary of existing approaches (e.g. Competitive analysis, if appropriate)
- 2.2. Brief summary of related literature (e.g. Annotated bibliography, or initial literature review, with brief summary of sources)

3. Methodology

- 3.1. Approach (Description of the research and development methodology, e.g. Software development model, requirement gathering method, test and evaluation process)
- 3.2. Technology (Implementation tools & resources such as hardware, software)
- 3.3. Version management plan (e.g. Git repository or shared drive)

4. Project management

- 4.1. Activities: tasks required to complete each objective
- 4.2. Schedule i.e. Gantt or other, showing activities, deadlines
- 4.3. Data management plan (e.g. Google folder for project logs, reports, literature etc)
- 4.4. Deliverables

5. Bibliography (Citations and references adhering to University guidelines or IEEE)

Project Proposal Marking Rubric

Criteria	Fail	C/D	B	A	Weighting 100
Introduction	Inadequate introduction which fails to outline the scope of the project and product overview.	Introduction lacks some detail and there is limited outlining of the scope of the project and product overview.	Introduction shows a good understanding of background, aims and objectives of the report, but greater detail or clarity is needed. Product overview needs improvement.	Excellent introduction which outlines the background, aims and objectives of the project in a clear, concise and comprehensive manner. Well-described product vision and rationale.	20
Background Review	Inadequate review	Some knowledge of the research area but lack of analysis or sources.	Good knowledge of the research area with some analysis of sources.	Excellent knowledge of existing approaches and current literature, with strong analysis of relevant sources.	20
Methodology	Little or no plan for methodology.	Limited plan for methodology.	Good plan for R&D methodology, with appropriate technology and version control. Adheres to a recognised model.	Excellent plan for R&D methodology, with appropriate technology and version control. Adheres to a recognised model.	20
Project Management	Little or no project plan, or data management plan.	Limited project plan, and data management plan.	Good project plan, showing activities, deadlines and deliverables. Good data management.	Excellent project plan, showing key activities and deadlines. Concise list of deliverables, corresponding closely to objectives. Well-organised data management plan.	20
Written Presentation	Poor written presentation. Missing or incorrect citations and referencing style.	Adequate written presentation. Incorrect citations or referencing style.	Good written presentation, citations, correct referencing style.	Excellent, concise written presentation and referencing style. Clear & logical presentation.	20

10 Appendix B Progress Report Outline and Mark Scheme

The following is a suggestion of a possible layout for your Progress Report. **You do not have to use this layout** if it is not appropriate for your work.

Length = 2500 – 3500 words.

Sections and subsections should be numbered for cross-referencing purposes.

Cover page: *Title, Name, Student number, Table of Contents*

1. **Introduction:** Draft of the introductory chapter as it will appear in your final report. This should be based on an updated *Introduction* in your proposal, using the feedback you received from your supervisor together with your subsequent ideas and research as they have developed.
 - 1.1. Background
 - 1.2. Aim
 - 1.3. Objectives
 - 1.4. Product Overview
 - 1.4.1. Scope
 - 1.4.2. Audience
2. **Background Review:** Draft of the Background Review chapter as it will appear in your final report. This chapter is based on the *Background Review* in your proposal, expanded using the feedback you received from your supervisor. Compare existing approaches and include a themed literature review, with a critical appraisal of the sources. You can add any additional key sources that you have discovered since the proposal.
3. **Technical Progress:** Technical progress overview in context of chosen topic & methodology, as defined in your proposal e.g.
 - Project plan update, indicating completed tasks and deliverables on Gantt or other chart.
 - Problems encountered with solutions proposed
 - Progress with respect to development approach (e.g. requirements or user stories, specification, design and / or sprint plans, test plan, product versions)
 - Use of supervision
4. **Professional Issues and Risk:**
 - 4.1. **Risk:** Risk analysis as informed by current progress; Resolved risks and the success of the mitigation strategy; Changes to project plan as a result of risks; Future risks.
 - 4.2. **Professional Issues:** Identification and discussion of relevant legal, social, ethical and environmental issues in the context of the project. Refer to professional codes of conduct, e.g. BCS, ACM.
5. **Bibliography:** Citations and references adhering to University guidelines or IEEE

Progress Report Marking Rubric

Criteria	Fail	C/D	B	A	Weighting 100
Introduction	Inadequate introduction which fails to outline the scope of the project and product overview.	Introduction lacks some detail and there is limited outlining of the scope of the project and product overview	Introduction shows a good understanding of background, aims and objectives of the report, but greater detail or clarity is needed. Product overview needs improvement.	Excellent introduction which outlines the background, aims and objectives of the project in a clear, concise and comprehensive manner. Well-described product vision and deliverables.	20
Background Review	Inadequate review	Some knowledge of the research area but lack of analysis or sources.	Good knowledge of the research area with some critical analysis of sources.	Excellent knowledge of existing approaches and current literature, with strong critical analysis of relevant references.	20
Technical Progress	Little or no technical progress.	Adequate technical progress, related to the project plan.	Good technical progress, with some reference to the project plan. Good use of supervision.	Excellent technical progress towards a difficult project, with clear reference to the project plan. Excellent use of supervision.	20
Professional Issues	Little or no risk, legal, social, ethical and environmental issues have been identified. No citation of sources.	Limited risk, legal, social, ethical and environmental and professional issues have been identified.	Many risk, legal, social, ethical and environmental issues have been identified, with cited sources. Good critical analysis.	Highly relevant risk, legal, social, ethical and environmental issues have been identified, with cited sources.	20
Written Presentation	Poor written presentation. Missing or incorrect citations and referencing style.	Adequate written presentation. Incorrect citations or referencing style.	Good written presentation, citations, correct referencing style.	Excellent, concise written presentation and referencing style. Clear & logical presentation.	20

11 Appendix C Presentation Requirements

Timing & deadline	15 minutes. Time includes Q&A.
Demo	Presentation (max 10 min video), to include: <ul style="list-style-type: none">• Project overview: you can use the content of your poster as a visual aid.• Demo of current implementation, showing level of technical achievement.• Consideration of accessibility (e.g. video captions, narration).
Poster	Statement of problem; context, aim, objectives; research background; description of achievements; appropriate use of examples. URL of video demo.

In awarding a grade, the following elements will be considered:

Delivery	Materials, clarity, layout, interest and structure. Speed of delivery, use of pauses, time-keeping. Use of visual aids, images and video.
Demo	Does the demo clearly show the aim of the project and give a walkthrough of the created solution, highlighting the achievement?
Content	Context, aim, objectives and organization, research background, description of achievements; appropriate use of examples, development work, results and implication of work, achievement in terms of planned objectives. Consideration of accessibility.
Response to Questions	Knowledge and understanding. It is important that students can demonstrate understanding of the subject material in their response to questions.

See Appendix D for the Mark Scheme.

12 Appendix D Final Report Requirements and Mark Scheme

The following is a suggestion of a possible layout for your Final Report. **You do not have to use this layout** if it is not appropriate for your work.

Length = 8000-10000 words. Word count excludes bibliography, cover sheet, title, keywords, appendices.

Sections and subsections should be numbered for cross-referencing purposes.

6. **Cover page (compulsory):** Please use the template on Moodle
7. **Table of Contents**
8. **Glossary:** definition of any abbreviations used in the report
9. **Abstract:** Up to 250 words, concise outline of background and aims, results and achievements.
10. **Acknowledgements:** An opportunity to thank those who have provided you with assistance and support.
11. **Introduction:** This is an update of the *Introduction* from your Progress Report, using the feedback you received from your supervisor, and any subsequent ideas or research.
 - 11.1. Background
 - 11.2. Aim
 - 11.3. Objectives
 - 11.4. Product Overview
12. **Background Review:** This chapter is an update of the *Background Review* from your Progress Report, using the feedback you received from your supervisor. Compare existing approaches and include a themed literature review, with a critical appraisal of the sources.
13. **Methodology:** Description of the research and development methodology
 - 13.1. Research or software development process (e.g. agile approach, requirements, specification, design, implementation)
 - 13.2. Technology (Implementation tools & resources such as hardware, software)
 - 13.3. Version management (e.g. Git repository or shared drive) Link to the full program source. Relevant extracts may also be placed in the text where appropriate. Such extracts should be as short as possible and be treated as figures.
14. **Results:** Detailed documentation of results and testing. Critical evaluation and discussion of results, issues encountered, constraints, limitations and originality.
15. **Professional Issues**
 - 15.1. Project Management: Activities; Schedule (i.e. Gantt or similar); Data management (Project logs, reports, literature etc); Deliverables.
 - 15.2. Risk: Risk analysis as informed by current progress; Resolved risks and the success of the mitigation strategy; Changes to project plan as a result of risks; Future risks.
 - 15.3. Professional Issues: Identification and discussion of relevant legal, social, ethical and environmental issues in the context of the project. Refer to professional codes of conduct, e.g. BCS, ACM.
16. **Conclusion:** Summary of what was achieved and potential future work.
17. **Bibliography:** Citations and references adhering to University guidelines or IEEE.
18. **Appendices:** Essential data that are necessary to be included within the report but that would disrupt the flow of the main argument. This section is not marked. Examples include links to data and software repositories, questionnaires, raw survey results, wire frames.

Final Report and Oral Presentation Marking Rubric

Criteria	Fail	C/D	B	A	Max
Introduction & Background Review	<ul style="list-style-type: none"> Inadequate introduction which fails to outline the scope of the project and product overview. Inadequate review. 	<ul style="list-style-type: none"> Abstract and Introduction lack some detail and there is limited outlining of the scope of the project and product overview. Some knowledge of the research area but lack of analysis or sources. 	<ul style="list-style-type: none"> Good Abstract and Introduction A good understanding of background, aims and objectives, but greater detail or clarity is needed. Product overview presentation could be improved. Good knowledge of the research area with some critical analysis of sources. 	<ul style="list-style-type: none"> Excellent Abstract and Introduction, with a clear overview of the subject. Background, motivation, aim and objectives are described in a clear, concise and comprehensive manner, well-referenced. Well-described product overview. Excellent knowledge of existing approaches and current literature, with strong critical analysis of relevant references. 	20
Technical Progress	<ul style="list-style-type: none"> Little or no technical progress. Methodology and results either missing or inadequate in all aspects. 	<ul style="list-style-type: none"> Adequate technical progress. Sufficient description of research and development methodology. Some results, testing and conclusion. Partial reflection of results, issues, constraints, limitations and originality. 	<ul style="list-style-type: none"> Good technical progress. Good description of research and development methodology, using appropriate technology and version management. Well-presented results and testing. Critical reflection of results, issues, constraints, limitations and originality. Well-considered conclusion. 	<ul style="list-style-type: none"> Strong technical progress towards a difficult project; high academic achievement. Methodical description of research and development methodology, using appropriate technology and version management. Rigorous development and evaluation procedure, adhering to a recognised development model. Well-presented results with strong evidence of thorough testing. Critical reflection of results, issues, constraints, limitations and originality. Well-considered conclusion. 	40
Professional Conduct	<ul style="list-style-type: none"> Poor professional or ethical conduct. Little or no project management, risk, legal, social, ethical or environmental issues. 	<ul style="list-style-type: none"> Adequate professional and ethical conduct. Some project management and data management. Limited risk, legal, social, ethical and environmental issues identified. 	<ul style="list-style-type: none"> Good professional and ethical conduct. Good project management, with some activities and deliverables. Well-organised data management, including log. Good response to feedback. 	<ul style="list-style-type: none"> Excellent professional and ethical conduct throughout the project process. Excellent project management and adherence to the schedule, with well-defined activities and deliverables. Well-organised data management, with excellent project log. Reflective response to feedback on proposal and 	20

			<ul style="list-style-type: none"> Some risk, legal, social, ethical and environmental issues identified. 	<p>progress report, as well as supervision.</p> <ul style="list-style-type: none"> Highly relevant risk, legal, social, ethical and environmental issues identified, with cited sources. 	
Written Presentation	<ul style="list-style-type: none"> Poor written presentation and structure. Missing or incorrect citations and referencing style. 	<ul style="list-style-type: none"> Adequate presentation, but referencing style may be incorrect. Report has reasonable structure. Adequate grammar and spelling. 	<ul style="list-style-type: none"> Good presentation, and referencing style. Report is easy to read, with a logical structure. Grammar and spelling are polished. Graphs, figures and tables are suitably captioned. 	<ul style="list-style-type: none"> Accomplished written presentation, with correct referencing style. Report flows and is concise, easy to read, with a logical structure. Grammar and spelling are polished, and report is complete. Graphs, figures and tables are suitably captioned and explicitly referred to in-text. 	10
Presentation	<ul style="list-style-type: none"> Very poor oral presentation. Failure to follow instructions or prepare in advance. Resulting talk clearly lacks overall the required aspects. 	<ul style="list-style-type: none"> Satisfactory oral delivery. Layout and legibility of poster is adequate. Demo shows some technical achievement. Suitable response to most questions. 	<ul style="list-style-type: none"> Good, well-paced, oral delivery, explaining the problem, research and achievement. Poster mostly well laid out and legible. Most aspects described and illustrated. Demo shows good technical achievement. Mostly clear response to questions. 	<ul style="list-style-type: none"> Clear, well-paced, excellent oral delivery, explaining the problem, research and achievement. Poster clearly laid out and legible. All aspects (problem statement, research, project achievement, future work) fully described and illustrated. Demo shows very strong technical achievement. Clear and concise response to questions, with deep understanding. 	10

13 Appendix E BCS Project requirements

An individual project is an expectation within undergraduate, integrated masters, and postgraduate masters programmes. Students must be provided with written guidance on all aspects of the project, including selection, conduct, supervision, milestones, format of the report and the criteria for assessment. All projects should reflect the aims and learning outcomes which characterise the programme to which they contribute as set out in the programme specification.

Project reports

Projects must involve the production of a report which should include:

- elucidation of the problem and the objectives of the project
- an in-depth investigation of the context and literature, and where appropriate, other similar products (this section is likely to be emphasised less for an IEng project)
- where appropriate, a clear description of the stages of the life cycle undertaken
- where appropriate, a description of how verification and validation were applied at these stages
- where appropriate, a description of the use of tools to support the development process
- a critical appraisal of the project, indicating the rationale for any design/implementation decisions, lessons learnt during the course of the project, and evaluation (with hindsight) of the project outcome and the process of its production (including a review of the plan and any deviations from it)
- a description of any research hypothesis
- in the event that the individual work is part of a group enterprise, a clear indication of the part played by the author in achieving the goals of the project and its effectiveness
- references

Undergraduate individual project requirements

It is expected that within an undergraduate programme, students will undertake a major computing project, normally in their final year and normally as an individual activity, giving them the opportunity to demonstrate:

- their ability to apply practical and analytical skills present in the programme as a whole
- innovation and/or creativity
- synthesis of information, ideas and practices to provide a quality solution together with an evaluation of that solution
- that their project meets a real need in a wider context
- the ability to self-manage a significant piece of work
- critical self-evaluation of the process

In the event of this major activity being undertaken as part of a group enterprise, there is a requirement that the assessment is such that the individual contribution of each student is measured against all the above learning outcomes.

For accreditation for CITP, CEng or CSci, the individual project should be worth at least 30 credit points at level 6 or above. The project must be passed without compensation.

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 life-cycle.

Dissertations based solely on literature review activity and/or user/market surveys are not acceptable.