



UNIVERSITY OF
LINCOLN

EGR3024: Level 6 Individual Projects Handbook

SCHOOL OF ENGINEERING

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Introduction

This document provides an overview of some important aspects of the level 6 individual project module. More detailed support and guidance will be given throughout the year by the module leader and project supervisors. You should study this document carefully, raise any questions with your supervisor, and check your email daily for further information.

Aim of the module

The aim of this module is to further develop the students' problem solving, investigative, technical, critical, and communication skills through their managing and accomplishing a substantial individual piece of work.

Learning outcomes

Upon successful completion of this module, students should be able to:

LO1	Demonstrate a broad knowledge and understanding of mechanical engineering, with detailed work in a specialist area that includes knowledge and understanding of current practice and research in that field
LO2	Integrate the knowledge acquired during their degree studies to propose creative and innovative solutions to an unfamiliar problem
LO3	Plan and conduct a research investigation using technical and other literature drawn from a range of sources, and use that information in the solution of an engineering problem
LO4	Systematically investigate and fully describe an engineering problem using the appropriate engineering, analytical or computer tools. Depending on the subject being studied, students will develop specific laboratory or manufacturing skills, or they will learn how to use computer software for analysis and design
LO5	Produce full documentation of the design process and demonstrate compliance with technical, commercial, quality and customer constraints and best practice in terms of health and safety. Students should also employ sustainable engineering techniques and give due regard to environmental issues in formulating a design
LO6	Work safely, learn independently, and make value judgements on the basis of their own research
LO7	Liaise with professionals in various fields, and communicate effectively via written reports and oral presentations using a range of ICT
LO8	Manage their time and resources in order to execute and complete a project to a satisfactory standard.

Nature and timings of project work

This is a 30-credit module and therefore represents a minimum of 300 hours of student learning. This is equivalent to at least 18 hrs project work per week, though the effort is unlikely to be spread evenly.

Types of project

Projects that have been allocated fall into one of three categories, as outlined below.

- Single, individual projects – projects worked on by one student only.
- Linked Projects – a collection of connected individual projects requiring collaboration between students, each student must have their own distinct objectives and deliverables. For example, students may all be working on different systems within a wider context (e.g. braking and steering of an electric vehicle)
- Theme-based Projects – a collection of individual projects addressing the same theme but NOT requiring collaboration between students. Students can work independently on projects that all sit underneath the same umbrella theme.

The type of project you have been allocated should be clear from the original selection choices. If you are unclear, please clarify this with your supervisor in the first instance.

In all types of project you are expected to produce a dissertation that embodies entirely your own work. In linked projects there may be reference made to another student's activities but it should be clearly indicated as work that is not your own. No credit should be sought for work done by another student; to do so would constitute an academic offence.

Stages of Assessment

Initial Stage (10%):

You will have been allocated a project theme. This initial assessment looks to pin down a research question within that theme. The submission comprises the project proposal and an online Ethics Form through the LEAS system.

The initial assessment will outline the projected format of attainment and delivery of the project. This provides common understanding between student and supervisor on the project's bounds and content. It also provides a reference for the student in later phases of the project. Once produced it should be a living document that is updated as the timeline changes. The initial stage is second marked.

Note: No project in the University can take place without ethical approval. Failure to submit an ethics form will result in a mark of zero for this element of assessment and the work must not continue until approval is in place.

Interim Stage (20%):

Typically by the interim assessment literature reviews are broadly completed and some initial practical work (e.g. in a lab; data collection etc.) may have commenced.

The interim comprises a progress report which captures the literature survey and future directions that the student intends to take the project based on this survey. The report is supported by a 20 minute oral examination where you must bring your logbook and a Self-Evaluation Form to demonstrate reflective practice. The Interim stage is 'Double Marked' (i.e. independently assessed by 1st and 2nd Marker).

Note: Before carrying out any practical work you will need to prepare an appropriate risk assessment and also consider whether a second, more detailed ethics application is required.

The oral assessment must be organised by the student, to take place no later than 15 working days after the written submission date. Both markers must be present at the oral assessment.

The purpose of the interim assessment is to ensure that this foundation is appropriate for the student to commence their design activity and provides confidence that the project is on time, the student has grasped the fundamentals of the project and has a clear vision of achieving completion. It should contain an evaluation of relevant literature surrounding the project, thereby setting the project context. It should demonstrate understanding of relevant theory and methodology involved in the project, drawing on information from a properly referenced range of sources. It should include a clear indication of future activities for the project, confirming their achievability with reference to the previously delivered timeline, including updates and modifications as required.

The Interim Stage Assessment provides a challenge for the student to communicate technical information to a third party.

Dissertation (60%):

The Dissertation (worth 60%) will be a concise, professional report, detailing the investigation, development and analysis carried out, with recommendations for further work generated from the project. It is 'Double Marked' (i.e. independently assessed by 1st and 2nd Marker).

The word count guidance for the dissertation is 10,000 words (not including front matter or appendices). If the word limit is exceeded by more than 10%, the markers may stop marking at the word limit.

Project Dissertation structure is not definitive, but should adhere to British Standards and good practice as outlined in the General Projects Handbook.

In some cases, students may write their dissertation as a conference or journal paper (with agreement from their supervisor). In this case, the organizing body may specify a different template and referencing style which may be used. Submitting a paper is encouraged, as acceptance evidences a high standard of work. Possible avenues include the British Conference of Undergraduate Research (<http://www.bcur.org/>), the Proceedings of the IMechE, and subject-specific events.

Poster Presentation (10%):

The poster presentation should demonstrate the student's ability to concisely encapsulate the detail of the project in both visual and oral formats. It is marked by a panel of two or more academics, who may or may not be the supervisor.

Where possible posters will be presented in a conference-style environment with poster boards provided for mounting posters onto. An electronic copy of the poster should also be submitted to the Blackboard site.

Lateness Penalties

Standard University lateness penalties¹ of 10% available marks for each whole or partial working day late will apply to all submissions.

If a student requires an extension or suffers extenuating circumstances, these must be applied for in the normal way (forms are on Blackboard). Your supervisor cannot grant you an informal extension.

¹ As specified in the Undergraduate Regulations

<https://cpb-eu-w2.wpmucdn.com/blogs.lincoln.ac.uk/dist/8/8024/files/2022/07/Undergraduate-Regulations-2021-22-1.pdf>

Key contacts:

Should you have questions regarding your project, you should first contact your project supervisor.

The School Admin Team is contactable on 01522 837900, soeadmin@lincoln.ac.uk. The module leader is (Dr Chris Phillipson), and he can be contacted at cphillipson@lincoln.ac.uk.

Supervisor relationship

It is important that from the beginning a professional working relationship is developed between the student and their supervisor. Some hints and tips are provided in the general projects handbook.

Staff are allocated 10 hours per individual project/dissertation over the year for Undergraduate Individual Project or Dissertation Supervision. This includes all contact time, preparation and marking. Students are therefore advised to plan for up to 6 hours contact time, which roughly equates to half an hour per week (or a one-hour meeting every fortnight) during term time.

The supervisor is responsible for setting the foundations of the project and giving a comprehensive initial briefing (including safety) via the synopsis. After that, it is the student who should take the lead in planning the work, obtaining the necessary resources and inputs, etc. The supervisor then becomes a consultant. It is the student's responsibility to arrange meetings with the supervisor. At regular meetings the student should be fully prepared to:

- outline briefly the progress they have made since the last meeting;
- outline their plans for the forthcoming weeks, at least until the next planned meeting;
- ask for advice on specific aspects of the project.

The student may wish to provide their supervisor with information before the meeting so that they have time to read it carefully. Sometimes the meetings may be quite short; at other times the student may need to arrange a longer session to discuss some aspects in more detail.

The student should agree regular meeting times in their initial timetable. Either side should inform the other (with some notice) if the appointment cannot be kept, and an alternative time should be arranged as soon as possible. If students call at their supervisor's office without an appointment, they may be disappointed.

- THIS IS YOUR PROJECT AND COMPLETION IS ENTIRELY YOUR RESPONSIBILITY.
- YOUR SUPERVISOR IS THERE TO PROVIDE ASSISTANCE AND GUIDANCE WHEN YOU ASK FOR IT.
- YOUR SUPERVISOR IS NOT THERE TO CHASE YOU FOR WORK, OR TO LEAD YOU THROUGH EACH STAGE OF THE PROJECT.

Project logbook

All professional engineers keep a logbook/journal/daybook: this is often a legal document that records every aspect of their working day. The year 3 Individual Project is an opportunity to develop this important skill and all students are required to keep a Project Logbook. This may well support and provide evidence for their PDP Portfolio.

Students should study the overview below and begin their Project Logbook immediately.

The purpose of the logbook is to record the day-to-day progress of the project and learning experience. Students must *always* have it with them whenever they are working on their projects, for example in the laboratory or the library; for meetings with their supervisor or others. Students should get into the habit of using it for *all* notes rather than scraps of paper. It is a working record and personal learning journal — date each entry, work reasonably neatly, but do not 'copy up neatly afterwards'. Printed material that you collect may be pasted in or put into a separate loose-leaf binder (suitably cross-referenced).

Put your name and address in the front and leave two or three pages for a list of Contents, with page references. Students often use the back of the book for references/ bibliography, contact names and addresses, etc. You are expected to number and date each page.

Your Logbook must also contain your signed Project Risk Assessment Form and any supplementary Risk Assessment Forms.

Typical contents of the Logbook are:

- Summaries of papers, reports or books (including full reference details)
- Notes of meetings with the Project Supervisor — preparatory notes, discussion points to follow up, agreed actions
- Experimental and other data obtained
- Calculations and analysis of technical problems
- Sketches of design ideas
- Project management issues (see checklist in Appendix B)
- Learning experience:
 - Knowledge and skills
 - Intellectual abilities
 - Practical skills
 - General transferable skills

The logbook should be an honest account of how the student's thoughts developed as the project progressed — it may therefore contain entries that subsequently proved to be wrong or unsatisfactory; this is perfectly acceptable and expected.

Indicative project timetable

The nominal Project Timetable is as follows. This gives the basic deadlines and timetabled events only: students are expected to add their own meetings, milestones, and “gates.”

Week	Date	Notes
1	September	Sharing project list with students
2	October 4 th	Deadline to select projects.
3		Kick-Off Lecture. Project begins.
4		Drop-in
5		Initial Stage Assessment due. Workshop: Literature Review
6	October 31 st	Careers Seminar & Proposal submission deadline
7		
8		Careers Seminar
9		
10		
11		Recommended to schedule Interim Presentations Workshop: Academic Writing
12		
13		
14		
15		
16		
17		
18		Workshops: Reflection & Leveraging your Project
19		Submission of Interim Report
20	February 3 rd	Interim report submission deadline
21		
22		All interim orals complete, and all interim paperwork must be with the school office.
23		
24		
25		
26		
27		Workshop: Posters and Presentation Skills
28		
29		
30		
31		
32		
33	May 9 th	Submission of Dissertation (may vary with Easter) Submission of Interim assessment for PT students taking project over 2 years.
34		Poster Presentations at CoS Undergraduate Research Conference.

What my grades mean

All project submissions are marked according to their marking sheets. The following points give an indication of what assessors look for when grading work²

90-100%: a range of marks consistent with a first where the work is exceptional in all areas;

80-89%: a range of marks consistent with a first where the work is exceptional in most areas.

70-79%: a range of marks consistent with a first. Work which shows excellent content, organisation and presentation, reasoning and originality; evidence of independent reading and thinking and a clear and authoritative grasp of theoretical positions; ability to sustain an argument, to think analytically and/or critically and to synthesise material effectively.

60-69%: a range of marks consistent with an upper second. Well-organised and lucid coverage of the main points in an answer; intelligent interpretation and confident use of evidence, examples and references; clear evidence of critical judgement in selecting, ordering and analysing content; demonstrates some ability to synthesise material and to construct responses, which reveal insight and may offer some originality.

50-59%: a range of marks consistent with lower second; shows a grasp of the main issues and uses relevant materials in a generally business-like approach, restricted evidence of additional reading; possible unevenness in structure of answers and failure to understand the more subtle points: some critical analysis and a modest degree of insight should be present.

40-49%: a range of marks which is consistent with third class; demonstrates limited understanding with no enrichment of the basic course material presented in classes; superficial lines of argument and muddled presentation; little or no attempt to relate issues to a broader framework; lower end of the range equates to a minimum or threshold pass.

35-39%: achieves many of the learning outcomes required for a mark of 40% but falls short in one or more areas; not a pass grade but may be sufficient to merit progression to the next level.

30-34%: a fail; may achieve some learning outcomes but falls short in most areas; shows considerable lack of understanding of basic course material and little evidence of research.

0-29%: a fail; basic factual errors of considerable magnitude showing little understanding of basic course material; falls substantially short of the learning outcomes for compensation.

² Taken from the secretariat & legal services academic policy summary sheet: Marking and Grading Policy (4th January 2010) <http://secretariat.blogs.lincoln.ac.uk/files/2013/08/Marking-and-Grading-Policy2.pdf>