FEEG6013 Group Design Project

Guidelines 2024 – 2025

Table of Contents

Introduction

This group project enables you to apply your engineering and science knowledge to an engineering design problem. The ideas are developed through detailed design, experimentation, computer modelling and/or manufacture. You will also consider and manage wider aspects such as the social, economic, political, legislative, environmental, cultural, ethical and sustainability issues related to the subject matter of the project.

Working in groups you will meet regularly with your supervisor and any external supporter, develop your team working, plan and manage your project, prepare and submit reports and give oral presentations. At all times you will monitor your progress as a team to ensure you are achieving the objectives set and ensuring quality of output.

Worth 45 credits, the Group Design Project (GDP) forms a major component of Part 4. It provides the opportunity for a group of students to develop an engineering design solution in response to a specific design brief. Students should expect to spend approximately 40% of their time on their GDP over the year.

The following document aims to provide a clear and concise resource for students, and staff, on several aspects of the group design project, including, for example, assessment (formative and summative), finances, resolving issues etc. It is, of course, not the only resource with the GDP Blackboard page providing supplementary material e.g. templates, forms, links to additional resources etc. Each GDP is unique and the following guide does not attempt to focus on the technical details of any one design brief but rather the generalities of the GDP applicable to all projects.

Who's Who

Beyond your supervisory team the GDP module as a whole is managed and administrated by a team of academics across each of the programmes. For general queries about the module not addressed by this document please contact either your discipline rep or the module lead.

Dr. David Toal
(Module lead)

Prof. Stefan Bleeck
(Acoustical discipline rep)

Prof. Blair Thornton
(Maritime discipline rep)

Dr. Hanna Sykulska-Lawrence
(Aero & Astro discipline rep)

Dr. Adrian Nightingale
(Mechanical discipline rep)

Prof. Tom Cherrett
(Civil discipline rep)

GDP Activity Overview

The general structure of any GDP consists of the key milestones listed below in Table 1. Split into a mixture of summative and formative activities these milestones represent opportunities for your group to receive feedback on your progress from various sources throughout both semesters ahead of your summative assessment. This includes, for example, your supervisory team, independent examiner and wider academic community. The design brief for each group is unique and depending on the nature of the project there will be other milestones that your group should define to ensure that the project remains on track. Defining these milestones and adhering to them will be a key part of the management of your project. A more detailed overview of project milestones including deadlines is provided in Table 2 on page 24.

Table 1: Summary of GDP milestones (those marked with an asterisk are not compulsory)

Semester(s)	Week(s)	Activity	Formative(F) or Summative(S)
1 & 2	All	Weekly supervisory meeting	F
1	4-5	Research group presentation	F
1	6-8	EDMC consultation*	F
1	6	Interim report submission	F
1	8	Semester 1 elevator pitch*	F
1	10-11	Formal review meeting with examiner	F
1	10-11	Semester 1 peer review*	F
2	19	Semester 2 elevator pitch*	F
2	30/31	Group output drop-in session*	F
2	30/31	Semester 2 peer review*	F
2	32	Individual design journal summary submission	S
2	32 & 36	Group report, video & presentation	S

Formative Feedback on Your Progress

Opportunities for formative feedback on your work can be incredibly useful in helping you to improve the quality of the outputs of your group. Often feedback from other academics or your peers can highlight, for example, where improvements could be made in your technical approach, presentation etc. There will be several opportunities for such feedback throughout the academic year please take full advantage of these.

Presentation at Research Group level

You must give a presentation of your project to the research group of your Primary Supervisor to receive feedback, by the deadline in Table 2 on page 24. These presentations will be open to all. Your supervisory team and discipline representative will help arrange this. After your presentation, you should be ready to answer questions on your project, provide clarifications and discuss details of your plans. You should make notes of any points raised.

Although we aim for your presentation to be given face-to-face, the logistics of this may not make it possible for some groups. The discipline representative for your project **will let you know in advance whether a face-to-face presentation will be possible**. If it is not, it may be possible to **give your presentation via Teams**, followed by a live Q&A and feedback session. Alternatively, you may be asked to submit your presentation as a **narrated Powerpoint file**, which must include an accompanying voice recording delivering the presentation; a live session will be organised subsequently via Teams for you to answer questions and receive feedback. All arrangements will be made by your discipline representative and communicated to you nearer the time.

Following your presentation, you should discuss the feedback you received with your supervisory team, your response to it, the course of action you propose and the plan forward you have formulated as a result. This discussion can form part of your groups next supervisory meeting and should be captured within the interim report.

Project Interim Report

All teams must complete and submit a project interim report by the deadline given in Table 2 on page 24. A template for this report can be found in the "Assessment" section of the module Blackboard page.

This short report aims to capture key information about your project including:

- Group members.
- Project title.
- Project aims, objectives deliverables & milestones (including Gantt chart).
- Required project resources including e.g. lab and technician time and build space but also virtual e.g. software.
- Required skills and identification of skills gaps and required training.
- Project risks in the form of a risk register and associated mitigations with probability and impact quantified. This includes security risks and mitigation.
- Safety, ethical, legal and welfare considerations.
- Aspects of equality, diversity and inclusivity with respect to both the design brief and group management.
- Feedback on your research group presentation and a copy of the presentation slides.

The report should be submitted via e-assignments with verbal feedback provided by your supervisory team during a subsequent supervisory meeting.

Risk Assessment

In parallel to the interim report and no matter the nature of your GDP, you must also complete the online Risk Assessment process by the deadline in Table 2 on page 24.

Guidance on completing the Risk Assessment process is given in the *FEE Safety: FEE Health and Safety Resource*, a link to which is provided in "General Resources" on the module's Blackboard site. Also provided are links to template forms and several presentations, videos and training resources which you may find helpful.

Add and upload all the documents you agreed with your supervisor for approval to [Planon]. Only pdf files will be accepted for uploading. There is a size limit of 1MB. Ensure that the saved file has no extra full stops or unusual characters. You must submit at least a method statement and risk assessment document. Once all documents are attached press the submit button. The process is then complete.

Approval or rejection will arrive in the form of an email. Remember you must have an approved risk assessment in place before you can start any activity.

Examiner Review Meeting (Feedback and Guidance)

A formal project review meeting, attended by all members of your group, the supervisory team, the examiner and any external supporters, must take place in December, by the deadline in Table 2 on page 24. **Your group is responsible for communicating with all relevant parties and organising the meeting content after consultation with your supervisory team.** Typically this meeting will last 1 hour comprised of a 30-minute presentation followed by 30 minutes of questions. It is preferable for this meeting to take place face-to-face however, it may take place over Teams (or in a hybrid format) if necessary.

Following the project review meeting, the examiner & supervisor will fill in a feedback form (found in the "Form Store" on Blackboard) and return this to the students and the school office. Feedback will cover:

- The overall technical achievement to date including the formulation of realistic project objectives
- Research carried out in support of the design process
- Understanding of the wider social (ethical, welfare & legal) & environmental (inc. life cycle) aspects of the design proposal, equality, diversity & inclusivity
- Risk & security management
- Project planning & management
- Management of resources (inc. financial)
- The groups' evaluation of their effectiveness and performance
- Effectiveness of communication

In summary, this represents an important opportunity for your group to gain detailed feedback against the final assessment criteria from someone outside your supervisory team.

Peer Feedback

Peer feedback aims to develop self-awareness about group work skills and in particular to identify skills that should be improved. Its purpose is to improve the quality of individual contributions to the group and so improve the overall group processes and outcomes.

Peer feedback is given by each student completing **anonymously** an electronic form, the URL to which will be sent to you nearer the time. The form enables each member to comment on how the group functioned and on the contribution of all members, including his/her own. The collated peer feedback results for your group will be emailed to your supervisor as soon as possible after the deadline who will then discuss the feedback with you either as a group or on an individual basis.

To support the peer feedback process, groups must maintain evidence of their group work. This could include, for example, project plans, individual roles and responsibilities, notes of meeting actions with attendee lists and a signed statement by all members agreeing that this evidence represents an accurate record of proceedings.

Peer feedback must be submitted on two occasions, by the times given in Table 2 on page 24:

- Halfway through the project, to allow the group to identify and address any issues. It is expected that this feedback will be discussed within the group and appropriate action will be agreed where necessary.
- At the end of the project, to provide a reflection of how the group functioned and also make apparent any changes since the previous round of peer feedback.

Peer feedback **does not** directly affect the marks awarded. However, it can be used **in conjunction with other supporting evidence** to decide whether an individual student has made a significantly higher, or significantly lower, contribution to the group outputs, and thus whether that student's group mark should be higher or lower than the one awarded to the rest of the group. To support this remember to maintain evidence of your group work e.g. project plans, individual work etc. Actions relating to the resolution of issues within your group can be taken independently of this formal peer feedback process. In other words, **do not leave it to the point at which peer feedback is formally requested to make your supervisor aware of any issue**. Please see the later section covering the resolving problems on page 15.

Weekly Supervisory Meetings

The weekly meeting between your GDP and your supervisory team is the primary opportunity for formative feedback on your project. These meetings should take place weekly, to review progress, report on any issues that may arise and to agree a set of actions for the coming week.

Your group should prepare a set of slides ahead of each supervisory meeting, a template for this along with an example has been provided on the GDP Blackboard page under the "Assessment" section. These slides aim to capture the work done by each individual, progress against milestones, questions, risks, personal development and any resulting actions. These slides provide structure to the meeting enabling your group to maximise the amount of feedback on your work to date and help greatly when preparing your individual design journal summaries.

A typical supervisory meeting will last at least one hour and will normally consist of:

- A review of previously agreed-upon actions and their current status
- **A single overview slide from every student** outlining
    - A summary of feedback from the previous meeting
    - Their activities since the previous meeting
    - Planned activities for the coming week
    - Any identified risks to their work
    - Any personal development or training they need or have performed
- More detailed technical slides which aim to prompt discussion amongst the group and supervisory team around particular approaches, issues etc.
- An update and agreement on the actions for the coming week

There is no need to stick completely to this sample agenda, for example, you may find it more useful to present your single overview slide and follow this immediately with a more detailed technical discussion on a particular aspect of your work. However you choose to structure your meetings or manage your action plan, **each student is expected to produce a single overview slide every week.** These slides will form an appendix within your design journal summary (see page 12) and will provide your examiner with an overview of your progress throughout the year.

To aid in the preparation of these slides and to aid in the management in general it's highly recommended that your group create a group on Teams with an associated SharePoint site. This will enable you to edit documents such as your weekly slides in parallel. It is also recommended that during each meeting one student is responsible for taking minutes and these are posted to a folder on your groups SharePoint site after every meeting.

Although the balance is for the group and supervisors to decide, it is expected that groups will work predominantly using face-to-face meetings and that online meetings will be used only in exceptional circumstances. Supervisory meetings are, of course, not the only time you should be meeting as a group. It may be beneficial to arrange separate meetings between the group or sub-teams within the group throughout the year to work on particular deliverables together.

Academic staff sometimes work away from the university. Generally, your supervisor will let you know if they are going to be absent for a period and explain any interim arrangements for supervision to you. However, occasionally they may have an unplanned absence for personal reasons (e.g. illness) and may be unable to make arrangements with you in advance. If you are unexpectedly unable to contact your supervisor over a period of two weeks or more, you should contact your discipline rep for assistance.

Summative Assessment of Your Project

Overview

The module is assessed on the basis of two different types of submitted outputs: group outputs and individual student outputs. You must submit:

1. Group output, co-authored by all students, consisting of:
    a. Group report.
    b. Group presentation.
    c. Group video.
2. Individual student output in the form of an individual design journal summary.

Output (1) will represent 60% of the module mark. Students are given a group mark for it, although on exception different marks may be awarded to one or more students if there is sufficient evidence that this is appropriate. **A single mark is given** for the combination of report, presentation and video: **there are no partial marks** awarded for them, and the examiners will look at all three holistically to arrive at a mark.

Output (2) will represent 40% of the module mark. Students are given an individual mark for it.

All outputs will be assessed independently by your primary supervisor and examiner. Each will independently propose a group mark and, for each member of the group, an individual mark, to the GDP moderation panel for ratification. The moderation panel will have oversight of all group and individual outputs and associated marks. Significant differences in marks will either be flagged up for discussion by the original examiners or proceed to adjudication by an independent 3rd marker depending on the level of disagreement. Your final mark is thus to be confirmed by this panel.

More details on each item of the submission, as well as the assessment criteria, are given below and within the appendices referenced. Examples are available on Blackboard, within the "Assessment" section.

Group Assessment Criteria

The assessment of the group outputs focuses on three key criteria: *Innovation*, *Process* and *Communication*. The criteria and their assessment are detailed in Appendix B.

Group Report

You are required to submit a report, co-authored by all students. It aims to communicate your project design and the key aspects of your engineering design process in the form of a professionally presented report. It should be highly illustrated. Guidance on the Group Report is available in Appendix C.

Group Video

You are required to submit a video, co-authored by all students, that communicates your design project output to a broad range of audiences: what have you designed and why? Guidance on the Group Video is available in Appendix D.

Group Presentation

You are required to submit and deliver a visually supported, oral presentation co-authored by all group members, which communicates your design. The presentations will be given during dedicated sessions organised in week-36, between the **2ⁿᵈ and the 4ᵗʰ of June 2025**. A schedule will be posted on Blackboard ahead of time. **Make sure you are available those days,** as you are expected to attend a number of other presentations in addition to yours. **Note that you are required to submit your presentation well in advance of the event, at the same time as the other assessed outputs.** The presentation file will be made available to you on the day, as well as the means for projecting your presentation. You will not be permitted to use a different file to the one you submitted or to use your own equipment (e.g. a laptop.)

During the presentation, each presenter should introduce himself or herself, or be introduced. Although not all members of the group need to speak during the presentation, all should be present and all should participate in answering questions.

Project supporters should be invited to attend where possible and they should be looked after during their time on campus, welcomed at the start of the presentation, and properly acknowledged. This also applies to others who have made a significant contribution to the project.

Guidance on the Group Presentation is available in Appendix E.

Individual Design Journal Summary

You are required to submit an individual design journal summary which will consist of a report containing:

- Your overall technical (and non-technical) contributions, progression, design outputs and progress towards agreed work.
- How you have co-ordinated your work within the overall group design
- A reflection on the individual/group performance, final design proposal and limitations of the approaches used to reach it.
- A reflection of your self-learning activities.

Attached to this report will be **an appendix containing the collected weekly overview slides** from each of your weekly group meetings (details of which can be found on page 9). These slides can be referenced within the main report to help illustrate or explain any technical or non-technical contributions.

Guidance on the individual design journal summary is given in Appendix F.

Final Submission

The Group Report, the Group Presentation and your individual Design Journal Summary should be submitted via e-assignments by the deadline set out in **Error! Reference source not found.**, on page 24. Note that this is the **latest** date for submission; you are welcome to submit earlier if you prefer. Late submissions will be subject to the University late submission policy. Please include a signed copy of the generative AI declaration form with both your group (for each individual) and individual design journal summary submissions. Details of this can be found on page 22.

The Group Video should be submitted in Panopto, through Blackboard, by the same deadline. To submit it, log into Blackboard and select the FEEG6013 module. Click on the "Recorded Sessions" link, which appears on the side-menu on the left. You should see a folder named "dropbox"; click on it once to enter. At the top of the page you should see a search box, and next to it a button named "Create". Click on it once; from the menu that appears select "Upload media". Upload your Group Video by following the instructions that appear. Depending on file size, it may take a few minutes to a few hours for the video to process. You may edit the file name while it is uploading. Do not close the window until the message "It is safe to close this window" appears.

Any member of the group can submit the Group outputs on behalf of the group, however it is advisable that a single member is made responsible for this and the decision is minuted, so that there is no confusion on the day. Individual students remain responsible for the submission of their own Design Journal Summary.

Each submitted item (Group Report, Group Presentation, Group Video and Design Journal Summary) should consist of a single file. All files should **strictly adhere** to the following naming convention and should be of the following types:

Group report: GDP_XX_group_report.pdf
Group presentation: GDP_XX_group_presentation.pd/.ppt/.pptx
Group video: GDP_XX_group_video.mp4
Individual Design Journal Summary: DJS_XX_YYYYYYYY_Surname_Firstname.pdf

In the above, XX is the number of the group using two digits, e.g. "09", "10" etc, YYYYYYYY is the 8-digit ID number of the student, while Surname and First name are self-explanatory.

Organising and Running Your Project

Planning

A timetable of key activities is set out in Table 2 on page 24. Each group will have a supervisory team, comprising of a Primary Supervisor and possibly also a co-supervisor who will have expertise in specific areas. The Primary Supervisor will be the first point of contact for problems and queries. An independent examiner will be appointed during Semester 1.

After meeting their Primary Supervisor, each group is expected to begin the process of self-organisation. The group should identify and elect team members to project organisational roles as well as each member being assigned a specific engineering role. Organisation roles include, for example, a project lead, treasurer, meeting minute taker etc.

Groups should meet with their academic supervisory team once every week and a regular weekly meeting time and place should be agreed as part of the first meeting. More information on the recommended format of supervisory meetings can be found on page 9. Although the balance is for the group and supervisors to decide, it is expected that groups will work predominantly using face-to-face meetings and that online meetings will be used only in exceptional circumstances.

Running a Project

There are no hard and fast rules on how you organise the running of your GDP, but there are some practical points to help you make it a success.

- Read and abide by the Faculty's Safety Guidelines, available on Blackboard.
- Each group must produce a formal Risk Assessment before undertaking the project. This is mandatory for all projects.
- Keep records of meetings and agreed actions and get your paperwork organised.
- Make sure you know where to find each other on and off campus.
- Establish effective communications between the group and with your supervisor(s), external supporter(s) and the technical staff (if appropriate).
- Create a dedicated MS Teams group for the group and supervisors. This helps with communication, file transfer/storage and enables documents to be worked on in parallel
- Draw up a programme of work with staged targets and try to work to this programme.
- Ensure that all group members have clear engineering roles and associated work packages.
- Make sure the targets you set can be achieved in the available time.
- Make sure you know the deadlines you are working to.
- Where appropriate keep a photographic and video record of your work from the outset.
- Maintain a log-book, either as a paper book or a digital log or a combination of both, to record your project work notes, actions, observations and ideas. Apart from aiding communication with other group members, supervisors and stakeholders, your log-book can be the basis of your weekly supervisory meetings.

There is resource material to support effective group working located on the FEEG60013 Blackboard site, within "General Resources".

Resolution of Problems

You are expected to proactively work to avoid problems occurring within your group and to apply your best efforts to resolve problems should they arise. There are two stages to resolving a problem:

Stage one: The group recognises the problem and works to resolve it themselves. The Team Leader must produce and retain a short written summary outlining the problem and the resolution/action agreed.

Stage two: If stage one does not resolve the problem, the Team Leader should arrange a mediation meeting with the project supervisor. On exception, an individual group member may request a meeting. In both cases it must be evident that efforts within the group to resolve the problem have already been undertaken.

Funding for Your Project

There are costs attached to running a Group Design Project successfully, including (but not limited to) costs for purchasing raw materials, purchasing or manufacturing components, travelling to and spending time on external sites, interfacing with industry, hospitality to external supporters, etc. There are up to six complementary funding streams for covering those costs:

1. A core budget provided by the School.
2. Use of school facilities.
3. Additional school funding awarded on a competitive basis at an Elevator Pitch, to which all groups are eligible to apply.
4. Industrial support.
5. Funds raised using crowdfunding.
6. Discretionary funds at the disposal of the supervisory team.

The group treasurer is responsible for ensuring that the funds at the group's disposal are properly managed. Teams who exceed their budget will be expected to settle the difference personally.

To ensure that all groups and all students are treated equally, a Group Design Project brief is approved and offered to students **only if it can run successfully** within the core School-provided budget, with the addition of any industrial support and/or discretionary funds already committed. **No additional funding is necessary** to ensure the success of a project, and so the use of any other funding stream (with the exception of Elevator Pitch funds, where appropriate) for delivering the assessed outputs of the module **is not allowed.**

For some groups additional funding may be desirable for activities related to the project, which add value to its outcomes. For this reason groups are allowed to raise funds through crowdfunding, i.e. by pitching to the general public through a dedicated website, provided certain conditions are met.

Details on the different funding streams and their constraints are given below.

Core School Funding

Each project qualifies for funding at a level of **£850** in cash.

Expenditure against core School funding should be made using the processes in Appendix A, on page 25, and charging **sub-project code 510667101**, which holds core funding as well as any funds awarded through the Elevator Pitches.

The above cost code **should not** be used for expenditure against funds provided by an external supporter or through crowdfunding. See the following Sections for relevant details.

Use of School facilities

In addition to providing core funding in the form of cash, the School supports all projects by providing access to School facilities. Use of these facilities is costly; depending on the size and level of user support (i.e. technician time) required for a facility, it may normally cost several hundred, or even a few thousand pounds per day to use it. For example, using TSRL facilities typically costs £200-£600 per session, while larger facilities, like the towing tank or the wind tunnels, typically cost £1,200-£3,000 per session.

GDP groups are not charged for using School facilities; their use is an in-kind contribution, which, in view of the above, can be very significant for some projects. As a rule, each group is allowed to use a total of two days of technician time per member of the group.

Facility time is an expensive resource, which should be used efficiently. Groups must think in advance what they want to achieve during each session and arrive prepared to make the most of the time allocated to them. Groups needing to use School facilities, such as labs or the EDMC, will need to discuss access with the person in charge of the lab well in advance. Some facilities will need to be booked several weeks in advance (See section "Workshops" on page 21 for guidance specific to EDMC.)

Elevator Pitch Funding

All groups will have the opportunity to bid for extra funds to enhance their project via two elevator pitch events. Each project can bid for a maximum of £1,000 extra funding from the School at each event. Bids for extra funding are evaluated of the basis of the **value they add to the project** and **the potential return to the school and wider University**. This money is strictly not to be used as a core funding enhancement; the project must be able to proceed with the core funding plus any funds provided by external supporters and/or supervisors.

Guidance on the elevator pitch, including some background on how the term arose, is available in Appendix G, on page 41.

Expenditure against elevator pitch funding should be made in the same way as for core School funding, as above, using the same process and charging the same AGRESSO cost code.

Third-Party Project Support

Many projects benefit from third-party/industry support. This may consist of funding and/or in-kind contributions, such as materials, manufacturing services, access to data, staff time, etc. Industrial supporters are normally approached by the supervisory team. If work done as part of an externally supported project may lead to commercially exploitable ideas, the guidelines of the section "Third-Party Support" on page 22 must be followed.

Expenditure against funds provided by an external supporter should be arranged in consultation with your Primary Supervisor and should be made using the same process as for core School funding. Your Primary Supervisor will be able to provide the relevant AGRESSO cost code you should use. You **should not use** the school GDP cost code given above.

Crowdfunding

In **exceptional circumstances** to support **extra-curricular activities** related to your project, you are allowed to raise additional funds via crowdfunding, i.e. by using an electronic platform to advertise your project and solicit donations from the general public. Donations can also be made, through the electronic platform, by friends, family, and even members of the group if they are so inclined.

Raising funds in this manner **must have the prior approval of the module lead** and any funds raised this way **cannot be used to deliver the assessed outputs** of the module.

Expenditure against funds raised by crowdfunding should be arranged in consultation with your primary supervisor, who will formally be the budget holder of your crowdfunding account, and should be made using the same process as for core School funding. Finance and/or the Module Coordinator will be able to provide the relevant AGRESSO cost code you should use, once the funds are available. You **should not use** the School GDP cost code given above.

Guidance on crowdfunding is available in Appendix H, on page 44.

Discretionary Funds

It is possible that your supervisory team has access to funds they are able to use at their discretion, such as research grants, funds previously secured through consultancy, etc. which they may be willing to use to support your project. However, please note that this is by no means the norm.

Your supervisory team are under no obligation to provide additional funds. Expenditure against such funds should be arranged in consultation with the budget holder, who will be able to provide the relevant AGRESSO cost code you should use. Most likely this will be your Primary Supervisor. You **should not use** the School GDP cost code given above.

Reimbursement of Project-Related Expenses

In the course of your project you may need to purchase materials and components, or travel for the purposes of the project, or even host a project supporter. Purchasing should be done via the University's Purchasing Department. GDP students may be allowed, as an exception, to purchase directly urgent items of limited cost and be reimbursed using an expenses claim; details of what is allowed are in Appendix A.

Expenses claims can now be made by students electronically through the University's Business World service. Claims made in this way will be paid directly into the UK student's bank account. The following website provides details of how to make such claims. When submitting an electronic claim please remember to attach:

- All receipts/invoices related to the claim
- The expenses authorisation letter – available under "general resources>expenses claims" on Blackboard.

All expenses claims are first checked and approved by the module lead and then the University's finance department. To minimise delay to the reimbursement please remember:

- The claim will be rejected if the person making the claim is different from that on the invoice.
- Claims for mileage etc. will need to include the names of those travelling in the car.
- The sub-project code is 510667101.
- Reimbursement via this online portal cannot be made to a non-UK bank account. See the above website for further details.

Claims must be submitted in a timely manner. It is best to claim within a week of expenditure, or as soon as possible thereafter. Do **not** "save" expenses to submit a single, big claim later in the

academic year, as the University may refuse to reimburse you. Note that, as a rule, **the University will not reimburse expenses claimed more than three months after they occurred**.

Miscellaneous

Project Options and Allocation Process

Project options are proposed by members of academic staff or may be self-proposed by a group of students, provided a member of academic staff has been consulted and has agreed to supervise it. Projects may have external supporters and are often related to staff research interests.

As far as possible, projects are allocated in accordance with students' preferences. Students who have not submitted their preferences by the stated deadline may have a project selected for them. Late entrants to the programme may find their choices are limited.

Feedback

Over the course of your project you will receive feedback on your progress often and in many different ways.

Regular meetings with your supervisors are a place to get feedback, so you should organise these promptly and aim to make the most of them by preparing in advance. The presentation to your supervisor's research group is designed so that you receive feedback from other members of academic staff, who are external to the project. The formal review (see Table 2 on page 24) is another place where feedback is provided, this time not only by the supervisors but also the external supporter (if applicable) and the examiner. Also, there are two rounds of peer feedback, where the anonymised forms will be made available to you via your supervisor.

Finally, as you start producing a draft of your group report, you can expect your supervisors to provide some feedback on it. You must send the draft in a timely manner, agreed with the supervisor. Faculty guidelines on feedback prescribe that supervisors will give general feedback on the report structure and overall logical flow. Specific feedback will be given on one chapter. Supervisors will not correct spelling mistakes or grammatical errors but will comment on the content, although on occasion they may, by illustration, demonstrate how grammar and spelling can be improved.

Safety Guidelines

These guidelines are not intended to replace Faculty and University safety practices, which are available on Blackboard.

Students undertaking group projects need to have a clear understanding of the safety policy and rules, and must obey them. This is equally important whether they are working in laboratory or workshop areas, or anywhere else in the University.

Students and supervisors should ensure that they are aware of the safety policies and rules, and liaise with those responsible for safety in the area of activity. Formal risk assessments must be undertaken and submitted, as per Section "Risk Assessment" on page 8, before any work commences. If there is a need to amend the risk assessment, this must be done before the additional activities the amended assessment is meant to cover are carried out.

Where project students are working in laboratory or workshop areas in another School or Faculty, the local safety policy will apply.

Special care must be taken where students are working off-site. If the location where they are working is subject to local safety rules, these must be obeyed. Where there are no specific rules applied by the site owner/manager, the students should carry out a risk assessment and draw up their own safety policy/rules, which should be discussed with and agreed by the supervisor.

Students should consider the safety aspects of their activities and record these as specific safety statements in the minutes of meetings. This may be particularly appropriate for testing of equipment or devices that teams have designed and constructed.

Workshops

Where projects require manufactured items, students should consider the potential load on technicians and space in the School's workshops and laboratories in advance of drawings being prepared. Workshop requirements should be discussed with the supervisory team and communicated in a timely way to the relevant technical head of the workshop or laboratory. There is a standard allocation of two days of technician time per student. This will be monitored to ensure that no project makes excessive demands on the workshops.

The Engineering Design and Manufacturing Centre (EDMC) Mode of Operation and EDMC Engineering Drawing Requirements & Guidance, as well as Solidworks FEE drawing templates, are available in the Documents folder at the FEE Engineering, Design and Manufacturing Centre Sharepoint Group site. This can be accessed through a link on Blackboard, under "General Resources".

Groups that will want EDMC to make something for them, or will want to use the student workshop in EDMC to make something themselves, will need to have a **consultation with Kevin Smith or one of his team** by the deadline shown in Table 2. The supervisor should also attend this consultation. Details on how a meeting can be booked will be circulated in due course. **Groups that do not have a consultation cannot have anything manufactured at/by EDMC**.

In all cases expect **at least a four-week, and probably longer, lead time** for work to be completed. This can be considerably longer during busy periods.

Communications with Outside Bodies

Follow these guidelines when dealing with outside bodies:

Communications should be polite and succinct. Keep a record (or copy) of all communications.

When organising meetings with outside bodies, stick to your arrangements and go prepared. When in doubt about the dress code, dress smartly.

If you want to write a letter to an external supporter that may commit you (and hence the University) to something, check first with your primary supervisor. If the contents of a letter to a supplier may be interpreted as an order, add the following to the bottom of the letter: *Nothing in this letter shall be interpreted as an order for goods or services unless accompanied by an official, duly authorised University order.*

Make allowance for the fact that delivery times quoted by suppliers may be optimistic.

Third-Party Support

Where, in a project supported by a third party, work is being done which may lead to commercially exploitable ideas, the following guidelines apply:

- The academic progress of students must take precedence over all other considerations.
- The University has the rights to all intellectual property created by its students and employees in the course of their studies or employment.
- The supporter has first refusal to negotiate these rights.
- Students are treated in the same way as employees of the University in the commercial exploitation of intellectual property developed by them, and therefore may be eligible for revenue sharing as described in the current university IPR regulations.
- The supporter should be sent a copy of the full report of the project only after the formal examining process has been completed.
- The University cannot promise to produce any particular item for a supporter, e.g. a working prototype, apart from a copy of the final report.
- Should work be conducted on the supporter's premises, an exclusion letter under the HSAW from the supporter to the University will be required.
- The external supporter and the University should agree with each other on any details relating to the project which are released for publication or passed on to a third party.
- Project outputs are not made available to the public or any other third party without consent from the primary supervisor and the approval of the external supporter.

These final two points are quite important as they may limit the GDP's participation in the design show and, in some extreme cases, require the group's presentation to be held in private. The module lead should be informed of any potential IP restrictions as they arise. The industrial sponsor should also be made aware of the GDP assessment processes and potential involvement in the design show early in the project.

Copyright, Confidentiality and Intellectual Property

Drawings, project reports and other material that may go outside the University must contain a copyright/confidentiality statement as follows:

COPYRIGHT UNIVERSITY OF SOUTHAMPTON 2023/2024
All Rights Reserved. No part of this document/software may be reproduced, stored in a retrieval system or transmitted in any form or by any means electronic, mechanical, optical, photocopying, recording or otherwise without the prior written permission of the University.

There are issues regarding copyright and Intellectual Property that you should also keep in mind when producing your Group Video. Relevant guidance is available in Appendix D.

Generative AI

The school has produced a policy which breaks GenAI usage into three tiers:

- Tier 1: No GenAI use
- Tier 2: Allows for specific, customisable GenAI use cases that do not compromise learning outcomes

- Tier 3: Requires specific, customisable GenAI use cases to achieve learning outcomes

Detailed information on the definition of these tiers can be found on the GenAI SharePoint site. This policy requires acceptable GenAI usage to be defined for the assessments of each module within a GenAI declaration form. These can be found on the module Blackboard site within the form store. For both the group and individual summative outputs, these should be completed and submitted along with the associated reports to e-assignments. Each individual group member should include a declaration form covering all three of the group outputs as well as a completed form for their individual design journal summary. For all formative aspects of the GDP, each individual group member should include a declaration form covering their use on each formative output. For the presentation and interim reports, these should be submitted to the supervisor, and for the examiner report, these should be submitted to the examiner.

GenAI usage within the GDP falls under Tier 2 i.e. it is acceptable for specific aspects of the GDP which do not compromise learning outcomes. GenAI can, for example, be used in an assistive manner to critique spelling or grammar and help with debugging code but cannot be used to write sections of your reports or presentations or generate images/figures.

It is recognised that given the breadth of topics covered by the module these declaration forms may not cover every potential usage of GenAI and in some cases, the use or creation of a GenAI tool may be part of the module brief. For those cases not covered by the forms the group should, in the first instance, consult with their GDP supervisory team (and sponsors if appropriate) about their plans. This should then be brought to the attention of the module lead, associated discipline rep and finally the group's examiner. Usage of GenAI technology not covered by the declaration form should then be highlighted clearly in the groups summative outputs.

Key Activities and Dates

Table 2: List of activities, those involved and the respective deadlines. Weeks are University weeks.

Week/Date	Action by	Activity
Weeks 1 – 3	Supervisors and Team	- Arrange appointment with Primary Supervisor. - Ensure team understands project brief. - Exchange contact details. - Fix dates for future meetings. - Plan project details. - Attend lab inductions where applicable.
Week 4 or 5	Team and Supervisors	Research-group-level presentation.
End of week 4	Team and Supervisors	- Meeting with project supporter if applicable. - Supporter to receive project & contact details.
Week 5 or 6	Supervisors and Team	Discuss with supervisors the course of action in view of the feedback received after the presentation.
Weeks 6-8	Team, Supervisor, EDMC	**Mandatory consultation** regarding manufacturing at/by EDMC. Groups not engaging **will not be allowed to have anything manufactured** at/by EDMC.
7/11/2024, 23:00	Team	Deadline for submission of the interim report.
13/11/2024, 18:00	Team	Deadline for expressing interest for Elevator Pitch-1.
Week 8	Team	Attend Elevator Pitch-1 (if applicable).
Week 10	Team, Supervisors, Examiner (External supporter)	**Formal review meeting** with examiner (and supporter) and all team members. - Submit drawings to EDMC (if applicable).
13/12/2024	Examiner & Supervisor	Emial the examiner review form to the student office and group.
Week 10, 11	Team	Fill in **Peer Feedback Forms**
Week 11	Supervisors	Discuss the results of the peer feedback with the team or individuals as appropriate, ensuring anonymity.
29/1/2025, 18:00	Team	Deadline for expressing interest for Elevator Pitch-2.
Week 19	Team	Attend Elevator Pitch-2 (if applicable).
8/5/2025, 23:00	Team	**Submit all project outputs** (Group Report, Group Presentation, Group Video, Design Journal Summary). - Submit **Peer Feedback Forms**.
2 - 4/6/2025	All	**GDP presentations**

Appendix A. Purchasing

Over the course of your project you may need to purchase materials and components, or travel for the purposes of the project, or even host a project supporter. Expenditure can be covered by your budget, which you should manage prudently so that your project is delivered within it. Whether a particular item is charged to your core funding, any Elevator Pitch funds, or any funds available through a supporter or crowdfunding, depends on the type and purpose of the expenditure; section "

Funding for Your Project" on page 16 provides some guidance on what is acceptable in each case.

The processes you need to follow are outlined below.

Purchasing via the University's Purchasing Department

As a general rule, all purchases should be made via the University, by emailing the Purchasing Department at buy@soton.ac.uk ; they are available 8:30-4:30 Monday to Friday over email, Teams and phone. They will arrange the purchase for you and pay directly. In your communication you should provide your group number (e.g. "GDP09", "GDP10", etc), details of the items/services you wish to purchase, the details of the supplier, any other details that may be relevant, and the sub-project code to which expenditure is to be charged. Make sure you identify your primary supervisor in the email and you CC him/her.

Once the details of your purchase are received, the Purchasing Department will respond within 48hrs (excluding weekends and bank holidays), but usually much sooner, with a response time of 3-4 hours being typical. The response may be either a request for clarification or confirmation that a requisition has been sent. If you are requesting items that need to be paid via a University Purchasing Card the response times are very similar.

The University has a list of suppliers it uses, whose details are already in the purchasing system. If you need to use a supplier not already in the system, they can be added very quickly if a request is received with all the required details. If you have something that is really urgent it is best to call the team at (2)5328, so they can confirm the details and start the request immediately. However, you should consider just how urgent your request really is before calling the team, and only do it in a genuine emergency.

Purchasing Directly

Although going through the Purchasing Department should be the rule, there are times when this may not be feasible. For example, you may need urgently something of relatively small value and available through a local store. For cases like this you have the flexibility to pay for the item yourselves, and then file an expenses claim against your budget to be reimbursed. However, the following rules should be **strictly** adhered to, otherwise **you will not be reimbursed**:

1. **As an exception to the standard University rules**, GDP students are allowed to be reimbursed through expenses for the purchase of individual items that need to be unavoidably sourced at very short notice, and which cost **less than £50** (i.e. up to and including £49.99).
2. **Up to three (3) items**, each costing less than £50, can be purchased and reimbursed for in any one claim, and by any one student member of each group.
3. You should attach a letter from the budget holder authorising you to claim expenses, which will be issued to you at the beginning of the academic year. The letter will state a limit for each claim. This can be found on the Blackboard site.
4. Claims must be submitted in a timely manner. It is best to submit them within a week of expenditure, or as soon as possible thereafter. Under no circumstances should you "save" expenses to submit a single, big claim late in the academic year, as you may not be reimbursed. **Claims must be submitted to the Student Office, who will arrange for them to be signed by the budget holder and forwarded to Finance.**

5. The purchase of items costing £50 or more should necessarily go through the Purchasing Department as above.
6. **Note that reimbursement of expenses for some items/services may be denied even if they cost less than £50.** This includes Airbnb claims or items/services for which a contracted supplier should have been used. **Always ask the Purchasing Department for advice when in doubt.**

Details on how to submit expenses claims can be found in Section "Reimbursement of Project-Related Expenses" on page 18.

Appendix B. Group Output Assessment Criteria

The assessment of group outputs focuses on the key criteria of: Innovation (25%), Process (50%),and Communication (25%).

Innovation

Designs demonstrate the application of creativity to achieve recognisable cost-benefit from understanding and responding to stakeholder needs. *Demonstrating:*

- attempts to apply new design ideas
- development of design brief from understanding stakeholders and responding to their needs & interests
- technical performance related to the design brief/ specification
- consideration of financial aspects and (meeting) criteria for market viability

Process

Designs have been developed through the application of relevant techniques to progress and systematically develop a final design proposal. The engineering development process uses and coordinates available resources, and responds to the design's environmental, social and economic context, criteria and opportunities. *Demonstrating:*

- evidence of systematic progression from identified and researched needs, through initial concepts and design development to reflection on a final proposal
- evidence of systematically applying observation, prototyping, testing and analysis using relevant techniques
- evidence of considering and responding to the environmental aspects of the design, including the designs life-cycle
- evidence of considering and responding to social (ethical, welfare and legal) responsibilities
- available project resources coordinated and used

Communication

The quality and impact of the design outputs produced to communicate the design process and the final design proposal to technical and non-technical audiences**.** *Demonstrating:*

- Clarity of communication of the <u>design process</u> achieved through suitable use of a range of appropriate techniques
- Impact of communication of the <u>final design output</u> achieved through suitable use of a range of appropriate techniques

The extent to which these criteria are met will affect the overall grade given to your project. The final assessment is made on the basis of the quality of your project as a whole.

Table 3: Innovation. Designs demonstrate the application of creativity to achieve recognisable cost-benefit from understanding and responding to stakeholder needs. Demonstrating:

	0-24%	25-39%	40-49%	50-59%	60-69%	70-79%	80-100%
Attempts to apply new design ideas	Very few attempts e.g. passively copying an existing solution.	Some attempts e.g. modifying an existing solution (while other alternatives possible).	Acceptable attempts. Formulaic design options considered.	Competent attempts. (Perhaps optimistic) Design options competently compared.	A good range of new design ideas evident and applied (ongoing). Realistic design options well compared and some favourable features combined.	A comprehensive range of new design ideas evident and the most suitable applied (partly ongoing). Realistic design options very well compared and favourable features combined.	A comprehensive range of novel design ideas evident and the most suitable applied (ongoing). Exceptional comparison of realistic options and combination of the best features.
Development of design brief from understanding stakeholders and responding to their needs & interests	Very little understanding and responding e.g. design brief adopted passively.	Some understanding and responding e.g. design brief adopted passively.	Acceptable identification of some stakeholders Design brief considered but hardly developed from the project proposal. Acceptable responses to assumed stakeholder needs & interests.	Sound description of most conventional stakeholders. Design brief developed in a competent way. Sound responses to assumed stakeholder needs & interests.	Good description of all typical direct stakeholders. Brief developed in a useful way to reflect expected needs and interests. Good reflection on assumed stakeholder needs & interests.	Comprehensive description of all typical direct and some indirect stakeholders. Brief developed in a comprehensive way to reflect stakeholders' needs and interests. Comprehensive (incl. primary) understanding of well justified stakeholder needs & interests.	Exceptional description of all typical direct & indirect stakeholders Brief developed in a exceptional way to reflect stakeholders' needs and interests. Comprehensive (primary) understanding from testing real needs & interests.
Technical performance related to the design brief/ specification	Very limited evidence of technical performance	Some evidence of technical performance	Acceptable evidence of technical performance, related to some aspects of the design brief/ specification.	Competent evidence of technical performance, related to most aspects of the design brief/ specification.	Good evidence of technical performance, related to most aspects of the design brief/ specification.	Comprehensive evidence of technical performance, related to all aspects of the design brief/ specification.	Very comprehensive evidence of technical performance, related to all aspects of the design brief/ specification.
Consideration of financial aspects and (meeting) criteria for market viability	Very little discussion.	Some discussion.	Acceptable consideration – limited focus perhaps just on (any) project & prototype cost. Acceptable discussion of criteria for viability in an existing market with unsubstantiated assumptions.	Sound consideration, beyond consideration of (any) project & prototype cost. Sound discussion of basic criteria for viability in an existing or speculative market with a recognisable basis.	Good evidence of considering many and responding to some of the financial aspects of the design. Good discussion of a fair range of criteria for viability in an existing or potential market with a recognisable basis.	Comprehensive evidence of considering many and responding to a reasonable selection of financial aspects. Comprehensive discussion of a good range of criteria for viability in an existing or potential market with a defensible basis.	Very comprehensive evidence considering many & responding to all applicable financial aspects. Very comprehensive discussion of a full range of criteria for viability in an existing or potential market with a realistic basis.

Table 4: Process. Designs have been developed through the application of relevant techniques to progress and systematically develop a final design proposal. The engineering development process uses and coordinates available resources, and responds to the design's environmental, social and economic context, criteria and opportunities. Demonstrating:

	0-24%	25-39%	40-49%	50-59%	60-69%	70-79%	80-100%
Systematic progression from identified and researched needs, through initial concepts and design development to reflection on a final proposal	Very little progression.	Some progression. Design stages described, but without clear links.	Acceptable progression. Design stages described, with some explanation of links.	Sound, systematic progression. Design stages competently described with sound explanation of links.	Good systematic progression. Design stages well described with good explanation of links.	Comprehensive systematic progression. Design stages comprehensively described with highly competent explanation of links.	Exceptional systematic progression. Design stages comprehensively described with very highly competent explanation of links.
Systematically applying observation, prototyping, testing and analysis using relevant techniques demonstrating an understanding of the associated limitations	Very little evidence of applying relevant techniques.	Some evidence of applying some relevant techniques.	Acceptable evidence of acceptable application of some relevant techniques.	Sound evidence of competent, systematic application of most relevant techniques.	Good evidence of highly competent, systematic application of all relevant techniques.	Comprehensive evidence of highly competent, systematic application of all relevant techniques.	Comprehensive evidence of exceptional, systematic application of all relevant techniques.
Evidence of considering and responding to the environmental aspects of the design, including the designs life-cycle	Very little evidence of consideration. Very little response evident in the design.	Some evidence of consideration. Some response evident in the design.	Acceptable evidence of consideration. Acceptable evidence of responding in the design.	Sound evidence of considering a limited range of the environmental aspects of the design. Competent responses in the design, though limited effect on likely environmental performance.	Good evidence of considering a range of the environmental aspects of the design. Tangible responses, leading to evidence of some beneficial performance.	Comprehensive evidence of considering a wide range of the environmental aspects of the design. Proactive and tangible responses, leading to beneficial performance recognisable by interested stakeholders.	Comprehensive evidence of considering all reasonable environmental aspects of the design. Proactive and tangible responses, leading to beneficial performance recognisable by all stakeholders.
Evidence of considering and responding to social (ethical, welfare, inclusivity and legal) responsibilities	Very little evidence of consideration. Very little response evident in the design.	Some evidence of consideration. Some response evident in the design.	Acceptable evidence of consideration. Acceptable evidence responding in the design.	Sound evidence of considering a limited range of the social aspects of the design. Competent attempts to respond, though limited effect on likely 'social performance'.	Good evidence of considering a range of the social aspects of the design. Tangible responses, leading to evidence of some beneficial 'social performance'.	Comprehensive evidence of considering a wide range of the social aspects of the design. Tangible responses, leading to beneficial social performance recognisable by interested stakeholders.	Comprehensive evidence of considering all reasonable social aspects of the design. Tangible responses, leading to beneficial performance recognisable by all stakeholders.
Project management and coordination (inc. available resources, risks & security)	Poor coordination and very limited use.	Some coordination and some use.	Acceptable coordination and acceptable use.	Competent coordination and sound use.	Good coordination and good use.	Comprehensive coordination and highly competent use.	Exceptional coordination and use.

Table 5: Communication. The quality and impact of the design outputs produced to communicate the design process and the final design proposal to technical and non-technical audiences. Demonstrating:

	0-24%	25-39%	40-49%	50-59%	60-69%	70-79%	80-100%
Clarity of communication of the <u>design process</u> achieved through suitable use of a range of appropriate techniques	Communication is hardly clear. Unsuitable use of communication techniques. Inadequate range of appropriate communication techniques	Communication is sometimes clear. Some suitable use of communication techniques. Some appropriate selection of communication techniques.	Clarity of communication is acceptable. Acceptable use of communication techniques. Reasonably appropriate selection of communication techniques.	Communication is competent in clarity. Competent use of communication techniques. Competent selection of communication techniques.	Good clarity in communication. Good use of communication techniques. Good selection of communication techniques.	Communication is highly competent in clarity. Highly competent use of communication techniques. Highly competent selection of communication techniques.	Communication is exceptional in clarity. Exceptional use of communication techniques. Exceptional selection of communication techniques.
Impact of communication of the <u>final design output</u> achieved through suitable use of a range of appropriate techniques	Communication has very little impact.	Communication has some impact.	Communication has acceptable impact.	Communication demonstrates impact at a competent level.	Communication has good impact.	Communication demonstrates impact at a highly competent level.	Communication demonstrates exceptional impact.

Appendix C. Guidance on the Group Report

Each group is required to submit a Group Report, co-authored by all students within the group.

Aim

The aim of the Group Report is to communicate your project design and the key aspects of your engineering design process in the form of a professionally presented report.

Objectives

Your Group Report should be a highly-illustrated document that effectively communicates your design process, your final design proposal, and that critically reviews your project as a whole. What have you designed? How have you designed it? How successful is the design?

Format

Fundamentally, the formatting of your report is up to you. However there are a number of criteria that you should meet:

- The report is **limited to 30 sides of A3 paper**. It should be A3 landscape orientation.
- The minimum text size is 11 point.
- The minimum blank margins should be 20mm.
- The report must have the following sections: (you may have additional sections to those listed below)
    - Front Cover: Please use the template provided on Blackboard, under "Assessment", and complete its sections as required. Its left half should be left blank. Please note that this Front Cover does **not** count as part of your document page allowance.
    - Table of Contents: If you wish to include a Table of Contents, this should be done within the 30-page limit.
    - Design brief and design specification: The design brief and design specification that your group developed and worked to.
    - Design Process: The engineering design process that the group went through, including key iterations and key milestones.
    - Final Design Proposal: Description of the final design, to a sufficient level of detail to demonstrate how well it met the design brief and design specification.
    - Project Review: A critical, review of your group's final design proposal. In your opinion, what are its pros and cons and how does it fit the GDP Design Assessment Criteria, which are detailed in the module guide?
    - List of relevant References: This should be included within the 30-page limit.
    - Appendices: A single appendix is allowed, however its use is strongly discouraged for anything other than documenting expenditure (see also "Content" below). All other information necessary for assessing the report should be in the main body. You should work under the assumption that nothing in the appendix will be read by the examiners, except the documentation of expenditure. The appendix can be up to 10 sides of A3 long in total.

Content

Your report should be succinct and communicate the information necessary to address each one of the assessment criteria (Appendix B). There is no need to add text or illustrations simply to fill in the available space; the inclusion of more or less content does not necessarily correspond to a better or a worse report.

You may find it helpful to first produce an outline of each section, setting out what it needs to communicate: once you know "what" to say, it should be easier to decide "how" to say it succinctly.

The report should use illustrations wherever possible to clearly and succinctly communicate your project. You should choose to how to illustrate your reports but suggested methods are: sketches, diagrams, 2D drawings, 3D model views, precedents, visualised data and analysis and photographs. You should ensure that all illustrations have a clear purpose for inclusion – what are they communicating?

Think carefully about how you can employ the A3 sheets at your disposal to communicate your project, making effective use of illustrations, accompanied by concise text that succinctly conveys information additional to the illustrations or tells the parts of the story illustrations cannot tell. Some pages could be reserved for full-size illustrations; others could be split down the middle and used as two A4 pages, yet others could have a wide illustration at the top spanning the whole page and split into two columns at the bottom, etc.

You may be tempted to put in the report everything you did for your project, as if it were a journal, however, this is not the point of a report. A lot of the details of the work you did will be in your individual design journal summaries. The report should communicate your project as a whole, but without retelling it in every single detail.

In the appendix you should document your expenditure on a spreadsheet, so that all funding used, from School or other sources, is accounted for. The total cost of your project must be clearly shown. You should provide enough detail to facilitate a light-touch audit per funding stream (i.e. School core funding, Elevator pitch, sponsors, etc.) but you should also use generic headings (e.g. "nuts, bolts, nails etc.") where appropriate rather than report separately the purchase of large numbers of generic, low-cost items. It is expected that the spreadsheet will take no more than the space corresponding to one or two A4 pages.

Submission

Detailed guidance on the submission of your Group Report, along with the relevant deadline, is given in Section "Final Submission" on page 12.

Assessment and Assessment Criteria

The Group Report is assessed in tandem with the other group outputs (i.e. presentation and video); the group outputs are assessed holistically and no partial mark is attached to the Group Report. The assessment criteria are detailed in Appendix B.

Appendix D. Guidance on the Group Video

Each group is required to submit a Group Video, co-authored by all students within the group.

Aim

To produce a video that effectively communicates your design project output to a **broad range of audiences** – **What have you designed and why?**

Objectives

Your video should be a professional, coherent production, able to engage with, and effectively communicate your design proposal to a broad range of audiences (varied age groups, technical and non-technical) who have not previously seen your project.

You will direct your video content, however, we would recommend that you consider the:

- scope, nature, and focus of your design project
- context of the project (social, economic, political, legislative, environmental, cultural, ethical, sustainability)
- physical scale of your project
- human interface and perception (end users – public/ private, individuals/ communities, manufacturers/ maintainers/ decommissioners)
- overall functionality and performance of your design, its components, systems, sub-assemblies, and sub-systems
- technical specification
- aspects of your design that are specifically innovative and of importance

Content

The production of an effective video requires considerable planning and editorial thought to ensure that proposals are clearly and succinctly communicated – considering the narrative and content **throughout** your project will help support the development of videos that are engaging and deliver your message effectively. This process will also aid the focus of your project overall.

- You should aim to produce the most succinct video possible, whilst also effectively communicating your design proposal. It should have a clear beginning, middle, and end.
- Your video should be appropriate for public release. This means you should obtain the written agreement of all persons appearing in it, using the "Video or photo model release form" found on Blackboard, within the "Forms Store". Also, for all material you use (e.g. music, images, logos, etc) you should have the permission of the owner of its intellectual property rights.
- As long as the above rule is adhered to, the source of content is your choice. It may be filmed activity or animated CAD/ computational simulation or a combination of both. You may also integrate still images, however, these should not interrupt the flow of your video and you should avoid your video becoming a slideshow.

Duration, File Type and Size

- The total duration of your video should be between 90-180 seconds.

- A longer video does not necessarily equate to a higher mark, nor does a shorter video necessarily equate to a lower mark.
- Videos should be in MP4 format, without DRM protection, in 16:9 (widescreen) aspect ratio and a minimum of 1280x720 pixels (i.e. 720p) The preferred codec is H.264.
- It is expected that the file size will be below 100MB, so that e.g. the video can be easily downloaded and played on a smartphone. You will not be penalised for uploading a larger file (e.g. files as large as 300MB have been accepted in the past), however the file size should be within reason.
- After uploading your video to Panopto, see the instructions on page 12, it's recommended that you confirm it has uploaded correctly by watching it through.

Support

You can find information, guidance and example videos on Blackboard, under "General Resources/Creating video".

Submission

Detailed guidance on the submission of your Group Video, along with the relevant deadline, is given in Section "Final Submission" on page 12.

All model release forms relevant to your video should be scanned and uploaded as an additional zip file with your group report/presentation to e-assignments. This should be done by the time of final submission at the very latest. You should maintain the originals.

Assessment and Assessment Criteria

The Group Video is assessed in tandem with the other group outputs (i.e. report and presentation); the group outputs are assessed holistically and no partial mark is attached to the Group Video. The assessment criteria are detailed in Appendix B.

Appendix E. Guidance on the Group Presentation

Each group is required to submit and deliver a visually supported presentation co-authored by all students within the group.

Aim

To produce a presentation that effectively communicates your design project output. What have you designed and why? How have you designed it?

Objectives

You should aim for a professional, coherent presentation, able to effectively communicate your design proposal to a technical audience (examiner, staff and peers) who have not previously seen your project.

You are responsible for the content of your presentation, its structure and the order in which the content is presented. However, we would recommend that you consider the:

- scope, nature, focus and context (social, economic, political, legislative, environmental, cultural, ethical, sustainability) of your design project brief, process and proposal.
- The organisation of your project team, the roles of individuals within the team and the project relationship to any additional project supporters.
- human interface and perception (end users – public/ private, individuals/ communities, manufacturers/ maintainers/ decommissioners).
- the design process that you have followed and the important processes, actions and decisions.
- overall functionality and performance of your design, its components, systems, sub-assemblies, and sub-systems (including relevant technical specification)
- aspects of your design that are specifically innovative and of importance

We expect your presentation to be based on the content of your Group Report and Individual Design Summary Reports.

Support

The production of an effective presentation requires planning and careful preparation, to ensure that proposals are clearly and succinctly communicated, in a way that is engaging and delivers your message effectively. You can find information and guidance on giving presentations at: https://www.southampton.ac.uk/learnwithustransition/academic-skills-guides/presenting-your-work.page.

Format

Duration
- The total duration of your presentation should be between 25 and 30 minutes.
- Your presentation will be followed by approximately 30 minutes of questions, mainly from the supervisors and the examiner, but also others present, including other GDP groups.

Content

- You should aim to produce a professional presentation that is succinct, whilst also effectively communicating your design proposal. The presentation should be clearly structured.
- The first slide should have the heading "FEEG6013 Group Design Project" and contain the number and title of your project, the names of the Group members and the supervisors, as well as the year. Other than that, the style of the presentation is up to you.
- You should not use in your presentation links to external content, such as youtube videos or other material that can be accessed over the internet. Links in principle make the contents of your presentation possible to modify after submission, which is not acceptable. Besides, there is no guarantee that an external internet connection will be available on the day.
- You should show your Group Video as part of your presentation, within the time allowed for it. This could be at the beginning, but not necessarily: how you accommodate your Group Video is up to you.

File Requirements

- Your presentation should be submitted as a single, stand-alone file, including all the necessary information and functionality. For example, if some of your slides rely on short videos and/or audio, that content should be embedded in the file. However, without careful curation of video/animation quality etc. the size of the file can become extremely large. If you do embed such content please check that they play on a University PC before submission.
- **You should not** embed your Group Video into the presentation file, as it will be provided to you separately on the day.

Constraints

- The as-submitted Group Presentation and Video files will be made available to you on the day, as well as the means for projecting them. **You will not be able to use different files to the ones you submitted, or to use your own equipment (e.g. laptop.)**
- You will not be allowed to use any additional material, such as handouts, posters, prototypes, 3D-printed components, etc., to support the presentation. (Using physical items is anyway inappropriate for a presentation given to a large audience, as they cannot be seen by the whole room; a projected 3D-CAD model, short video or even photos would be much more effective.)

Submission

Detailed guidance on the submission of your Group Presentation, along with the file types allowed and the relevant deadline, is given in Section "Final Submission" on page 12.

Assessment and Assessment Criteria

The Group Presentation is assessed in tandem with the other group outputs (i.e. report and video); the group outputs are assessed holistically and no partial mark is attached to the Group Presentation. The assessment criteria are detailed in Appendix B.

Appendix F. Guidance on the Individual Design Journal Summary

Each group member is required to produce an independent design journal summary report at the end of the project which includes a copy of each of the weekly summary slides in an appendix.

Aim

The design journal summary aims to compile a record of your individually attributable work, and its coordination with the overall group design, throughout the project. Sharing your weekly summary slide with your group and supervisors enables you, your group and your supervisor(s) to critically reflect on your project input, promptly and to suggest improvements.

Objectives

Your individual design journal summary should be a professional, succinct and coherent document that effectively communicates:

- your overall technical (and non-technical) contributions, progression, design outputs and progress towards agreed work.
- how you have co-ordinated your work within the overall group design
- a reflection on the individual/group performance, final design proposal and limitations of the approaches used to reach it.
- a reflection of your self-learning activities.

Format

There is a standard format for the submission and a blank template for you to use. This can be found on Blackboard, under "Assessment".

The report is to be submitted at the end of your project and is to provide an overview of your project contribution. It is limited to **fifteen sides of A4** (excluding weekly summary slides and reference section) with minimum text size 11 points, and will be read in conjunction with your weekly summary slides. You should aim to summarise your project contribution as succinctly as possible - more or less content does not necessarily correspond to good or bad project contribution. You should include sufficient detail to communicate your contribution succinctly and effectively.

The content of your Design Journal Summary should follow the titled sections and associated guidance within the template. Details on the submission are given in Section "Final Submission", on page 12.

Assessment and Assessment Criteria

The assessment criteria for the individual design journal summary covers four aspects, technical performance (60%), critical review (15%), self-learning review (15%) and communication (10%).

- Technical performance – demonstration of the selection, application and interpretation of appropriate testing and analysis methodologies to drive design decision-making.
- Critical review – understanding the limitations of the final design proposal, the methods used within the design process and how these could be addressed in a future iteration. This includes the impact of individual/group performance and interactions.

- Self-learning review – demonstration of the complete continual professional development (CPD) cycle e.g. identification and planning, learning, reflection and application.
- Communication – effectiveness of the communication of the individual student's technical output and their contribution to the overall design process.

The individual summary marking criteria are outlined in detail in Table 6.

Log-books

It is recommended that you keep an ongoing log-book throughout your project and that this may be in the form of a paper book or a digital log, or a combination of the both. Your log-book should use visual content and concise text as appropriate that records your project work notes, actions, observations and ideas to show the ongoing development of your design process.

Your log-book will not be assessed but should be accessible throughout your project to aid communication with team members, project supervisors and stakeholders. It is envisaged that your Design Journal will contain extracts from your log-book.

Table 6: Individual design journal summary assessment criteria

Degree Classification Mark Range: Performance:	(Fail) 0-39 Unsatisfactory - poor	(3rd) 40-49 Adequate	(2.2) 50-59 Fair	(2.1) 60-69 Good	(1st) 70-100 Very good – excellent, outstanding
Technical Performance (60%)	Inappropriate or incorrect engineering processes adopted (inc. design processes, simulation, experimentation, manufacture etc.). Little/no justification for the methods used or decisions made based on either the literature or experimentation within the GDP. Insufficient analysis or interpretation of results. Little evidence of integration with the wider group.	Basic application of appropriate engineering processes (inc. design processes, simulation, experimentation, manufacture etc.). Limited evidence-based decision-making e.g. the appropriate literature and/or experimentation within the GDP is used in a limited way to justify the selection of engineering processes or assumptions or to validate/verify results. Weak analysis or interpretation of results. Results are unrelated to background data/theory/literature. Weak integration with the wider group.	Application of appropriate engineering processes (inc. design processes, simulation, experimentation, manufacture etc.). Some evidence-based decision-making e.g. the appropriate literature and/or experimentation within the GDP is used to justify the selection of some engineering processes or assumptions and to validate/verify some results. Basic analysis or interpretation of results. Results are uncritically related to background data/theory/literature. Evidence of basic integration with the wider group.	Application of appropriate engineering processes (inc. design processes, simulation, experimentation, manufacture etc.). Evidence-based decision-making e.g. the appropriate literature and/or experimentation within the GDP is used to justify the selection of most engineering processes or assumptions and to validate/verify most results. Some originality shown in the analysis or interpretation of results. Results related critically to background data/theory/literature. Evidence of integration with the wider group.	Systematic application of appropriate engineering processes (inc. design processes, simulation, experimentation, manufacture etc.). Robust evidence-based decision-making e.g. the appropriate literature and/or experimentation within the GDP is used to justify the selection of any engineering process or assumptions and to validate/verify results. Insight and/or originality shown in the analysis or interpretation of results. Results related critically to background data/theory/literature. Evidence of strong integration with the wider group.
Critical Review (15%)	Very little evidence of understanding of the strengths, flaws or limitations in the design process (inc. management), prototype or proposal. Incorrect/inappropriate suggestions on how any flaws could be addressed.	Incomplete understanding of the strengths, flaws or limitations in the design process (inc. management), prototype or proposal. Poor suggestions on how these could be addressed.	An understanding and appreciation of the strengths, flaws and limitations in the design process (inc. management), final prototype or proposal. With reasonable suggestions on how these could be addressed.	An understanding and appreciation of the strengths, flaws, limitations or uncertainties in the design process (inc. management), final prototype or proposal. With reasonable suggestions on how these could be addressed.	Clear understanding and appreciation of the strengths, flaws, limitations, risks or uncertainties in the design process (inc. management), final prototype or proposal. With reasonable suggestions on how these could be addressed.
Self-learning Review (15%)	There is very little evidence of the identification of learning needs in support of the project nor an appreciation for any gaps in knowledge that remain.	Limited evidence of the identification of learning needs to support the project and any actions taken to address these needs.	Evidence of the identification of learning needs to support the project and actions taken to address these needs.	Clear evidence of the identification of learning needs to support the project and actions taken to address these needs. Some understanding of the gaps in knowledge that remain.	Clear evidence of the identification of learning needs to support the project and actions taken to address these needs. A clear understanding of the gaps in knowledge that remain and how these can potentially be addressed in the future.
Communication (10%)	Inappropriate use of language with poor grammar throughout. Inappropriate use of professional/scientific conventions throughout. Key figures/tables are missing or poorly presented. Inadequate referencing throughout.	Errors in the use of language, grammar, punctuation and spelling impacting comprehensibility. Some deviations from professional/scientific conventions. Poor but adequate layout within figures and tables. Adequate referencing with some errors.	No grammar, punctuation or spelling errors. Basic use of professional/scientific conventions. Appropriate use of figures./tables. Adequate referencing with few errors.	The document is cohesive and without obvious omission. No grammar, punctuation or spelling errors. Scientific/professional conventions are used correctly. Good use of figures/tables. Adequate referencing.	The document is concise, cohesive and without obvious omission. No grammar, punctuation or spelling errors. Scientific/professional conventions are used correctly. Imaginative use of tables and/or figures. Adequate referencing.

Appendix G. Guidance on the Elevator Pitch

The Elevator Pitch provides you with the opportunity to secure significant additional funds from the School in the form of project funding. There are two opportunities to pitch during the academic year, once during Semester-1 and once during Semester-2, and you can pitch for up to £1,000 on each occasion. The dates for the pitches will be announced via Blackboard.

The School has a total of £10,000 available to invest. All GDPs are eligible to enter.

Aims and Objectives

- To give you an opportunity to develop your skills in making succinct and effective presentations.
- To provide you with an opportunity to test your commercial awareness skills to accurately cost the funding requirement for the project.
- To promote effective teamwork to compile an effective pitch in a relatively short time frame.
- To provide you with the opportunity to effectively manage additional financial support.

Process

- You will pitch to a panel of Faculty representatives (around 5-6 people).
- You will have a **maximum** of three minutes to pitch (speakers will be timed and **stopped** at three minutes). This will be followed by three minutes of questions.
- Up to three members of your GDP team may deliver the elevator pitch. No other team members may attend.
- You are required to submit a single sided A4 paper presentation document containing key information.
- You may bring a physical prototype/ model (you will need to be able to carry this to and away from the presentation without delay).

What Will Convince the Faculty to Invest?

Fundamentally, if your pitch is convincing, then we will invest – it's that simple.

Convincing pitches:

- are clear, confident, engaging, and succinct – they have impact.
- state what the project is and what the additional funding will achieve – why do you need additional investment?
- state the benefit to the investor – what will the Faculty realise for its investment?

You should expect there to be strong competition for this additional funding and it is awarded on the basis of the most convincing pitches being funded first – this reflects real life situations. Not being able to secure additional funding does not imply that your proposal is of low quality, it simply means that there were other groups who sold their case (even) better.

The Faculty Investment Expectations

Should you secure additional investment, The Faculty will be your investor and will expect the following in return:

- That you spend our investment as you set out in your pitch (we are investing in something specific within your project and not just giving you money to spend generally).
- You clearly document how the additional investment (resource) has been used within your project and the impact that it has had (documented within your GDP outputs).
- Your group takes part in the Faculty Design Show (in week-37, in June) and helps to support the communication of your work and the Faculty generally (expectations will be proportional to the level of investment awarded).

Our primary aim is to support you to develop high quality projects.

Taking Part

Any team wishing to apply to an Elevator Pitch must inform, by email, the Module Coordinator (Dr. David Toal, djjt@soton.ac.uk) before the respective deadline. These are listed in Table 2, on page 24.

Feedback

Any funding awarded will be confirmed during the week following the pitch and generic feedback on the strengths and weaknesses of the pitches will be emailed to GDP groups.

Tips

- Elevator Pitch funding will not be awarded for baseline project activities – it must be associated with additional value.
- Investor reputation – The Faculty is particularly interested in opportunities that add value to our societies and environments that demonstrate innovation and sustainability. We are particularly interested in realising impact with external audiences – why might our investment make the world a better place?
- Value for money – Make sure that you are very clear regarding what the investment funds will be spent on, why this offers value for money, and why your existing project funds are insufficient. We will not invest if we think there is no chance of our investment realising an actual output.
- Be aware of your audience as they may know significantly more or less about your subject area than you – avoid abbreviations.
- Keep your A4 paper presentation simple, don't overload it, and make sure that the information can be easily and quickly assimilated.
- Rehearse – Make sure you are well prepared and have practiced your pitch. What will the panel need to know, what might they ask about? The best pitches are often less than three minutes and convince the panel without the need for questions.
- Remember – first impressions count.

What is an Elevator Pitch?

In the United States during the 1980's a new concept – the Elevator Pitch – emerged. Sales staff who were eager to "climb up the ladder" discovered that their only chance of gaining the attention of the boss was in the elevator. A decade later, the same technique became popular amongst entrepreneurs keen to secure investment. Unable to secure introductory meetings, they would ride up and down elevators in New York's skyscrapers waiting to meet the right person and the chance to pitch their opportunity.

Elevator Pitches have now moved outside of the "elevator" and have infiltrated all areas of business life. They are used to motivate employees, they appear in print form on company websites, and there are people who organise "Elevator Pitch" contests.

The "traditional" orally-presented version falls into the three categories, which reflect the various possible uses for an Elevator Pitch today. The first is the ten second pitch. This might come in useful when speaking to an answer phone or being presented to a dignitary. The thirty second pitch is used for round table introductions or during networking events. And the three-minute pitch is used for presentations, at job interviews, sales meetings or recruitment fairs.

Appendix H. Guidance on Crowdfunding

Students are allowed to raise via crowdfunding additional funds for activities related to their Group Design Project, provided the following rules are adhered to.

Aim

The aim of allowing the use of crowdfunding is to give groups the flexibility to pursue project-related activities which, although not central to the educational process and therefore considered extra-curricular, can nevertheless enhance the students' experience. Examples of appropriate use of crowdfunding could be: to facilitate the students taking their design to a competition, to allow for manufacturing of a prototype (where it is not a requirement of the brief), or of a prototype made of higher quality materials, etc.

Permitted Use of Funds

1. The funds raised must be used **exclusively to support related activities, not to help deliver the assessed outputs** of the module. For example:
   a. If the brief is to design a robot, then the additional funds could be spent on manufacturing the robot and/or on taking part in a competition for the best robot.
      They cannot be spent on designing the robot.
   b. If the brief is to design and manufacture a robot, then the additional funds could be spent on taking part in a competition for the best robot.
      They cannot be spent on designing or manufacturing the robot.
2. A group must be able to prove that no additional funds were spent to help deliver the assessed outputs of the module. The relevant expenditure must be documented in adequate detail so that it can be easily audited.
3. In cases where it is found that additional funds were spent to help deliver the assessed outputs of the module, and depending on the extent of this spend and its impact, the examiners may use their academic judgement to reduce the mark awarded for the group outputs, as well as the mark awarded for the individual output of any students whose work benefited.
4. In all cases, groups must act in line with the policy of the crowdfunding platform regarding the management of the funds raised. This is especially important in cases where the funding raised is below the initial target, or where part of the funds remain unspent after the end of the activity, or where, despite the funding raised, the activity or parts of it are eventually not carried out as initially planned, for whatever reason.

Process

1. Students must have the agreement of their Primary Supervisor and the Module Lead to start a crowdfunding campaign. The scope of the campaign, i.e. what the funds will be used for, as well as the text of the pitch, must be approved by the Primary Supervisor and the Module Lead in advance.
2. All groups starting a crowdfunding campaign should inform the Module Lead once the campaign is "live" and provide the URL to their pitch.
3. Students should be very clear in their pitch on the activities that the funds will support, and that these **add value to their project but are independent of their studies**. In particular, students should be careful not to imply that the resources made available by the University are not

sufficient for the success of their project: not only would this be inaccurate and misleading, it would also risk bringing the University into disrepute.

4. Students should be careful not to undertake in return for funding, explicitly or implicitly, any obligations that they will not be able to fulfil.

5. All funds raised as part of the campaign will be kept in an AGRESSO cost code, which will be created specifically for this reason and will have the Primary Supervisor as budget holder. Funds can then be spent using the same procedures as for core funding.

Platform to Use

The University no longer operates its own crowdfunding website. Students may therefore use a free crowdfunding provider of their choice as long as the above rules regarding setting up the fund are adhered to. Please be aware that it may take some time from the completion of the campaign to receiving funds and this will vary depending on the provider. Groups should therefore plan any campaign accordingly so funds are in place in good time to spend on their activity.