# HONOURS DISSERTATION Guidance 2024/2024

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| **ECSC10030**  **ECSC10031** | **Dissertation in Ecological and Environmental Sciences**  **Dissertation in Ecological and Environmental Sciences with Management** | **40 credits** | **All Year** |

**Course Organiser: Dr Gail Jackson**

The dissertation is worth 40 credits. Details and specifications are given below.

### Learning objectives

### To develop the ability to conduct research by collecting, analysing, interpreting and presenting data

### To put into practice the knowledge learnt during the degree programme

We offer a wide choice of dissertation projects and a wide range of supervisors, and there will therefore be variation in the characteristics of both the dissertation projects and the supervisors. As a premier research University, Edinburgh tries to offer students the opportunity to join active research programmes. Note that great care is taken by staff to ensure that the success of the student is independent of the dissertation project area selected.

**A. How do I find a supervisor?**

1. **Choosing a project from the list provided**

A list of projects and their supervisors will be provided on March 18th 2024. The Dissertation Fair will be held on Friday 29th March 2024 (12 noon to 2pm, in the Crew Building, rooms 302 and 304), which you should attend in order to discuss potential projects with staff. All EES staff have prepared a poster describing their research area and dissertation projects they have recently supervised. These will be on display at the Dissertation Fair and staff will be beside them. They are also available on the Dissertation Learn page (and the EES Programme Learn page). Following the Dissertation Fair, feel free to contact more than one member of staff to set up one to one meetings to discuss project choice in more detail. Arranging meetings to talk about potential projects is generally more efficient than exchanging emails.

1. **Proposing your own project**

You may also put forward your own project and, in this case, you should seek a supervisor who can provide appropriate support and expertise.

1. **Proposing an external supervisor**

If you wish to have a supervisor external to the School of GeoSciences, they will be paired with an internal supervisor. The internal supervisor will provide advice on the specific requirements of the dissertation, while the external supervisor can provide the primary scientific expertise. You may select your own internal supervisor or contact the Course Organiser, Gail Jackson ([G.Jackson@ed.ac.uk](mailto:G.Jackson@ed.ac.uk)) to ask for help with this.

1. **Submitting dissertation project selection form**

You should complete the Dissertation Project Selection form, available in the Forms folder on the Dissertation Learn page. Ask your proposed project supervisor to sign it, which signifies they are happy to supervise your proposed project. Then upload the form to the drop box on the dissertation Learn page by 29th April 2024.

**B. What do I need to do before I start my dissertation?**

1. **Initial meeting with supervisor**

When you have determined the subject of your project and your supervisor, you should meet your supervisor again to thoroughly discuss the project. Your supervisor will suggest appropriate background reading and methodologies.

1. **Prepare the two-page plan – submit by Friday 24th May 2024**

You will then develop the project into a two-page plan, which you should submit directly to your supervisor and also to the drop box on the Dissertation Learn page, by Friday 24th May 2024. The plan should include the title, a brief section on background/rationale and should cite relevant literature. The first sentences should focus on the big picture and then narrow down to the specific knowledge gaps your research will fill. This section should finish with the main questions to be addressed and your hypotheses. This should be followed by a brief explanation of the main methods to be used, initial thoughts as to how you will analyse your data and a brief indication of what you expect to find. Include a short list of references at the end. The more thinking you do at this stage, the better it will be for your dissertation planning and progress.

1. **Complete and submit the Dissertation Safety declaration form – by Friday 24th May 2024**

You are required to give special consideration to the safety aspects of any proposed field or laboratory work. By 24th May all students must submit the School of GeoSciences Dissertation Safety declaration form. This is available in the Forms folder on the Dissertation Learn page and should be submitted to the drop box on Learn. Please sign and date the form and ask your supervisor to do the same. These signatures demonstrate that both you and your supervisor have considered the Health and Safety aspects of your project.

1. **Complete and submit the GEOS-HS-001 Fieldwork Travel Risk Assessment form** **– by Friday 24th May 2024**

Discuss with your supervisor whether you also need to complete a Fieldwork Travel Risk Assessment form. If you will not undertake fieldwork or travel, you do not need to complete this form. This form is also found on the Learn page and should be submitted to the Learn drop box. For most fieldwork or travel, your supervisor should review and sign-off the form. However, if any fieldwork or travel is particularly hazardous, you should submit this form to the GeoSciences H&S office for assessment. Email it directly to [rar.geos@ed.ac.uk](mailto:rar.geos@ed.ac.uk) and Cc your supervisor. It can take three weeks for review of this form by the H&S office and

**No fieldwork must be undertaken until the H&S office have signed-off the form.**

If you intend to carry out laboratory work, discuss with your supervisor whether you will need to submit a COSHH (Control of Substances Hazardous to Health) form. This form must be signed by your supervisor before emailing it to the Analytical Services Manager: Gavin.Sim@ed.ac.uk.

1. **Complete and submit the dissertation budget form – by Friday 24th May 2024**

There is a small budget of approximately £100 per project. Some projects may cost a little more than this, and some may cost less. If your project may cost more than £100, please email the CO ([G.Jackson@ed.ac.uk](mailto:G.Jackson@ed.ac.uk)) explaining the need for extra funding. Please complete the Dissertation Budget Plan (found on the Learn page) and ask your supervisor to sign it before submission to the drop box. Keep receipts for any expenses you incur, as these are required for a refund. For more details, see Section F below.

1. **Complete and submit an Ethics Self-Assessment form – by Friday 24th May 2024**

All students must complete an Ethics Self-Assessment form. Your supervisor must sign this and decide whether you need to complete a full ethics assessment, to be sent to the School Ethics Committee for approval. A detailed guidance document and a video explaining how to complete the ethics form, can be found: https://www.ed.ac.uk/geosciences/intranet/research-support/research-ethics-integrity/committee. Submit your Ethics form to your supervisor and to the drop box on the Dissertation Learn page. If a full Ethics Review is needed this must be submitted and approved by the School Ethics Committee. This can take up to three weeks. If this is needed, no dissertation work can be undertaken until it is approved.

1. **Receive feedback on the outline plan**

You should then meet with your supervisor again to receive feedback on your outline plan regarding its feasibility and/or aspects you may not have considered or need to develop further.

**C. Timeline at a glance**

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| **Date** | **Activity** |
| Monday 18th March 2024 | Dissertation project list released |
| Friday 29th March 2024 | Dissertation Fair |
| Monday 29th April 2024 | Dissertation project choice form submission |
| Friday 24th May 2024 | Submission of:  - 2 page plan  - Budget form  - Ethics form  - GeoSciences Safety Declaration form  - GEOS-HS-001 Fieldwork Travel Risk Assessment form and/or COSHH form, if field/lab work is being undertaken |
| Week commencing  Monday 7th October 2024  (week 4) | Oral presentation of the plan/progress |
| Monday 21st October 2024  (week 6) | First mandated meeting with supervisor must have happened by this deadline. |
| Friday 24th Jan 2025  (week 2) | Second mandated meeting with supervisor must have happened by this deadline. |
| Wednesday 16th April 2025 | Thesis submission (12 noon) |
| Thursday 1st May 2025 | Dissertation Conference (9am to 5pm) |

**In summary - you may start the work on your dissertation after your:**

* Two-page Plan has been submitted and then approved by your supervisor
* GeoSciences Dissertation Safety form has been submitted and then approved by your supervisor
* Health and Safety form (if required) has been submitted and then approved by your supervisor. If your fieldwork is particularly hazardous the H&S form must be approved by the School Health and Safety Team

**No fieldwork can be undertaken until the H&S form has been approved.**

* Budget form has been submitted and then approved by your supervisor
* Ethics form has been submitted and then approved by your supervisor. If the ethics of the project are particularly challenging, they must be reviewed by the School Ethics Committee.

**D. What can I expect from my dissertation project and supervisor?**

Honours dissertation projects offer students educational opportunities not available in other parts of the curriculum. Projects will vary according to your interests, the availability of staff to supervise, and the availability of physical and financial resources.

**Feasibility:** the dissertation project should be sufficiently well-defined as to be capable of completion within the fourth year.

**Available resources:** acceptance of the dissertation project plan constitutes an agreement that adequate resources are available for completion of the work. These will vary according to the dissertation project, and may include library, data, buildings, experimental material, equipment, computing power, statistical support, and so on. The budget (£100) to cover the necessary costs of the project is modest, and the project should be designed with this is mind. Where you are not familiar with the techniques (laboratory, socio-economic, statistical, computing, etc.) necessary to carry out the dissertation project successfully, the supervisor must either provide training in the relevant techniques or give you access to others who will provide the training. However, it is **NOT** the duty of the supervisor to ensure that the student makes effective use of these training opportunities.

**Level of supervision:** supervisors must guide you but must also ensure that you are offered the means to demonstrate your ability. In the final stages, you may consult your supervisor(s) for guidance on the general form of the dissertation report, specifically its structure and content. **The supervisor must not, however, be asked to proof-read or correct it**. The student bears ultimate responsibility for the quality of the submitted work.

In summary, the supervisor’s input to the dissertation project covers the following three elements:

1. the dissertation project must be capable of completion to an adequate level in the available time
2. the necessary resources for completion of the dissertation project must be made available. Where the student is lacking in skills required to undertake the dissertation project, that were not part of required coursework, training must be made available.
3. supervision must be adequate to facilitate the necessary educational opportunities and to allow the demonstration of the student’s abilities

**E. What do we expect from you?**

We expect you to take advantage of the opportunities to develop the dissertation project, to utilise resources, and to extract benefit from training and/or guidance provided by your supervisor. You should note that the dissertation offers the opportunity to demonstrate those skills which there has been less opportunity to demonstrate elsewhere in the curriculum, and you should be particularly aware of the need to understand and investigate the scientific process, to respond to challenges, to innovate, to take decisions, to be self-reliant, and to bring to bear a wide range of intellectual and personal skills.

**Experimental design** - all students are expected to be familiar with the contents of the second year *Principles of Ecology* and *Ecological and Environmental Analysis* courses, the third year *Ecological Measurement* course and fourth year *Ecological and Environmental Science Field* course. Some aspects of survey and experimental design specific to a given project may not have been treated in sufficient detail and it is essential you discuss your study design with your supervisor, as part of the planning process.

**Quantitative skills** - all students are expected to demonstrate their competence in reasoning with quantitative and/or qualitative data. You are required to assess:

* the quality (both accuracy and precision) of the information on which your conclusions are based
* the sensitivity of the conclusions to errors in the data
* all possible alternative interpretations of your results

In experimental and in most quantitative studies, this will require a full statistical analysis of the data. The appropriate type of analysis depends on the method of data collection and on the experimental design and should always be considered as part of the dissertation project planning. We accept, however, that the specific statistical tests used in your thesis may sometimes differ from those stated in your submitted plan. Postgraduate statistics tutors will be available to help specifically with aspects of experimental design and statistical analysis. Their names and contact details will be provided by the Course Organiser, when they are available.

**Data collection and/or analysis** - you are encouraged to design your own experiments (where appropriate) and collect your own data *or* to work with pre-existing datasets from supervisors *or* publicly available data (from databases or the literature). If you are working with data being collected as a part of on-going research, it will not always be possible for you to be involved in the collection of the data which you will report on, analyse and evaluate. It is considered desirable, however, that you will have some practical involvement with the data generation process whenever possible.

In some cases, it may be possible to test analytical techniques before collecting any final data. Preliminary analyses using test or hypothetical datasets can be included in the dissertation plan.

**Interaction with research group and other researchers** - you are strongly encouraged to join the research group meetings of supervisors and to interact with PhD students, post-doctoral researchers and other researchers.

**Time management** - it is important that each student plans the schedule for dissertation work with their supervisor and keeps to this schedule, in order to:

1. take full advantage of supervisor advice on reviewing the literature and conducting and reporting on the experimental work.
2. leave adequate time for the final discussion which is expected to represent your own work.
3. ensure that completion of the dissertation does not encroach excessively on other course work.

**Ask for help** – if there is a Health and Safety concern about your work you MUST speak to your supervisor and/or experienced researchers who are supporting you in your dissertation work about this. In other instances, you should try to overcome challenges that you encounter but you should not be tentative in asking questions of PhD students, post doctoral researchers and other experienced researchers and in fact, this is positively encouraged. If insurmountable problems arise, e.g. you cannot get in touch with your supervisor after a reasonable period, you should inform the Dissertation Course Organiser (G.Jackson@ed.ac.uk).

If you are working with an external supervisor, you should make sure you have the best contact information (probably their email address) and have agreed when it is suitable for you to contact them. You should be sure not to abuse the privilege of working in association with an external organisation and if you are unsure about protocol, you should take advice from your internal supervisor.

Students must establish the scale of the dissertation project and the time for its completion, and must bring early attention to the supervisor (or the Dissertation Course Organiser, or their Student Adviser, or the Convener of their Board of Examiners) any perceived shortcoming in the provision of resources, training, or supervision.

**Inform on progress** - you are responsible for keeping your supervisor informed of progress on a regular basis so that your supervisor knows what you are doing in sufficient detail to potentially be able to stop you if you were to make serious mistakes.

Please remember that your supervisor has other commitments and may not always be able to see you immediately, so do not wait until the last minute. It is unreasonable to email a supervisor a long document and expect an instant reply. Advance warning is always appreciated.

In summary, it is your responsibility to:

* make good use of the experience and research expertise of your supervisor
* discuss with your supervisor any problems encountered or any significant deviations from the project plan
* keep your supervisor informed of progress at all times
* get in touch with the Dissertation Course Organiser (G.Jackson@ed.ac.uk) if you are having problems, for example, with contacting your supervisor

**F. Dissertation Budget**

The budget per dissertation is £100, though it is expected that most projects will cost rather less than this. In exceptional circumstances, claims in excess of this will be considered if the project demands and the total budget permits. Please email the CO (G.Jackson@ed.ac.uk) before committing to expenditure of greater than £100. Keep receipts for any expenses you incur, as these are required for a refund.

Eligible costs include:

* laboratory analyses (e.g. soil or plant analysis)
* travel costs
* consumables (e.g. chemicals, disposable or minor items of equipment, batteries, etc.)

The budget DOES NOT cover subsistence costs while on fieldwork.

Additional guidance:

* there are separate budgets for purchasing items of necessary safety equipment, and your supervisor can apply to the School Equipment Budget for items of equipment costing greater than £100.
* generally useful items of field equipment (e.g. 30 m tapes, spades, secateurs, GPS, etc.) can be borrowed from Hayley Coulson – the School’s Scientific Equipment and Teaching Support Officer. Please use this form to request equipment: https://forms.office.com/pages/responsepage.aspx?id=sAafLmkWiUWHiRCgaTTcYRbzqYLtsPBAhTvqQJj532VUNFhJV0JPMlpXNElEUzE5TDBWU0lROUJEUi4u
* supervisors may also, at their discretion, contribute to the costs of the dissertation from research or other accounts to which they have access, where this is appropriate and within the terms and conditions of that grant/contract.
* most costs for laboratory supplies, etc. will be claimed by the Laboratory Technician directly from the School TO using the normal acquisition forms stating the course name (‘Dissertation in …’) and student name.
* costs incurred by you directly can be claimed on the standard University Expenses Claim form (available from the Dissertation Learn page and at <http://www.finance.ed.ac.uk/expenses/>) and emailed, with receipts attached, to the Course Administrator.
* expenses that were not included on the original budget will be considered, but may not be approved. It is your responsibility to keep track of your expenses and to ensure that you do not exceed the agreed budget for your project.

**G. The Dissertation Report**

Your dissertation report should be as concise as possible, consistent with inclusion of all the essential information and a clear presentation of the arguments. The length should not exceed 10,000 words, excluding title page, table of contents, acknowledgements, list of abbreviations, references, figure/table legends and any appendices. Theses that are unnecessarily long will receive lower marks.

Title Page - should comply with the format prescribed for all Honours dissertations

* type the title of the dissertation slightly above the centre of the page using capital letters and double-spacing if two or more lines are necessary.
* the first line should not exceed 14 cm in width.
* centre the word '*by*' four spaces below the title and the author's name two spaces below that.
* See an example Title Page in the appendices. Note the inclusion of the University Crest.

Abstract - a 1.5 line-spaced summary of not more than 250 words. This should contain:

* a description of the research question/knowledge gap – what we know and what we don’t know
* how your research has attempted to fill this gap
* a brief description of the methods
* brief results
* key conclusions that put the research into a larger context

Table of Contents - this should list all chapter headings and sub-headings. All should be numbered, e.g. 1. Introduction, 1.1 Background to the dissertation project, etc.

Acknowledgements – where possible you should carry out all the work you include in your dissertation but if this is not the case, you must acknowledge help received, e.g. data given to you, as this is good scientific process. It is important that the markers and External Examiners know exactly what your contribution has been. Please note however, that you are encouraged to seek out expertise, and you will not be marked down for reaching out to experts such as PhD students, post-doctoral researchers, academic researchers or external scientists for advice, assistance with data collection or statistical analyses.

List of Abbreviations - include this where appropriate.

Introduction - This should:

* introduce the reader to the subject area and clarify the knowledge gap the dissertation research will fill.
* set the context for the dissertation by reviewing the relevant literature.
* include relevant references to general (theoretical papers and reviews) and specific (specific to the particular question addressed) literature, to justify the research that has been undertaken and define the questions being addressed.
* state the primary research questions and hypotheses in the final paragraph.
* follow an ‘inverted triangle’ format, progressing from general scientific ideas and why they matter, to the specific research questions addressed in the dissertation project.

The introduction should not be just a ‘Literature Review’.

Materials and Methods - the methods should explain as concisely as possible where you worked and what you did.

* only include the methods required to repeat your study.
* DO NOT include methods for data collection you do not present in the dissertation.
* standard analyses or techniques need only be given via a reference to published accounts or protocols.
* use clear subheadings to structure your methods for the reader.
* discuss data manipulations, statistical approaches used and the statistical software in a statistical analysis section.
* other common sections include study location/system (a general description of the sites where research was conducted and/or the organisms studied), field methods and laboratory methods.

Results - this section should summarise the findings of the research referring to all figures, tables and statistical results (some of which may be placed in appendices).

* include the primary results, ordered logically - it is often useful to follow the same order as presented in the methods.
* alternatively, you may find that ordering the results from the most important to the least important works better for your project.
* data should only be presented in the main text once, either in tables or figures; if presented in figures, data can be tabulated in appendices and referred to at the appropriate point in the main text.

Often, it is recommended that you write the results section first, so you can write the methods that are appropriate to describe the results presented. Then you can write the discussion next, then the introduction which includes the relevant literature for the scientific story you are telling, and finally the conclusions and abstract – this approach is called writing backwards.

Statistical results when reported in the text, tables or figure captions must include:

* the test used (ANOVA, Linear model, Linear Mixed Effects Model, GLMM, etc.).
* sample size (N) or degrees of freedom, and if appropriate effect size and error (e.g., slope and error around the slope).
* test statistic (t-value, F statistic, etc.).
* model fit (R2, AIC, delta AIC, etc.) if appropriate and p-value.

Additional guidance:

* p-values alone constitutes incomplete statistical reporting:

(<http://www.nature.com/news/statisticians-issue-warning-over-misuse-of-p-values-1.19503)>.

* full statistical results, additional figures or tables and raw data can be included in an appendix. It is generally not possible to include all statistical results, figures and tables in the main text.
* for guidelines on how to report specific statistical tests, refer to the scientific literature and discuss with your supervisor.
* the code for any statistical analyses, such as that using R, should be in an appendix.

Discussion - the purpose of the discussion is to summarise your major findings and place them in the context of the current state of knowledge in the literature. When you discuss your own work and that of others, back up your statements with evidence and citations.

* The first part of the discussion should contain a summary of your major findings (usually 2 – 4 points) and a brief summary of the implications of your findings. Ideally, it should make reference to whether you found support for your hypotheses or answered your questions that were placed at the end of the introduction.
* The following paragraphs will then usually describe each of these findings in greater detail, making reference to previous studies.
* Often the discussion will include one or a few paragraphs describing the limitations of your study and the potential for future research.
* Subheadings within the discussion can be useful for orienting the reader to the major themes that are addressed.

Conclusions - the conclusions section should specify the key findings of your study, explain their wider significance in the context of the research field and explain how you have filled the knowledge gap that you identified in the introduction. This is your chance to present to your reader the major take-home messages of your dissertation research. It should be similar in content to the last sentence of your summary abstract. It should not be a repetition of the first paragraph of the discussion. They can be distinguished in their connection to broader issues. The first paragraph of the discussion will tend to focus on the direct scientific implications of your work (i.e. basic science, fundamental knowledge) while the conclusion will tend to focus more on the implications of the results for society, conservation, etc.

References - all publications referred to in the dissertation should be included here and all references listed here should be mentioned in the text. See below for guidance on the format for references. You may find it useful to use referencing/citation software such as Endnote (<https://www.ed.ac.uk/information-services/computing/desktop-personal/software/main-software-deals/endnote>) or Mendeley (www.mendeley.com) to insert and format your references.

*Formatting Examples*

Bradshaw, A.D. and Chadwick, M.J. (1980). *The Restoration of Land: the ecology and reclamation of derelict and degraded land*. Blackwell Scientific Publications, Oxford.

Lawton, J.H. (1989). Food webs. In: *Ecological Concepts* (ed. J.M. Cherrett) pp. 43-78. Blackwell Scientific Publications, Oxford.

Lilleskov, E.A., Fahey, T.J., Horton, T.R. and Lovett, G.M. (2002). Below ground ectomycorrhizal fungal community change over a nitrogen deposition gradient in Alaska. *Ecology*, **83**, 104-115.

Additional guidance:

* Do not use the system employed in some other disciplines in which references are referred to by a superscript in the text
* Do not use footnotes
* Note that most Web pages are not refereed. They can be unreliable and should not generally be cited.
* For official documents that are published on the web you should cite the full reference to the paper copy as well as giving the URL.
* There are good open-access, Web-based scientific journals, but you should avoid citing most other Web pages unless there is no other source of the information.
* Try not to cite articles from the popular press e.g. The Guardian newspaper. Find the source of the information used by the newspaper to generate their article.

Appendices - an appendix is defined as an addition to a book or document containing explanatory matter, but not essential to its completeness, i.e. one need not consult the appendix to follow the text. These provide space to allow you to keep your main dissertation text as concise as possible, to include exemplar calculations, to show the code for statistical analyses, to present additional figures, tables and text that are not essential to the main text. You should ensure that its content has clear headings and that it contains legible and neatly presented information.

Tables - should be simple and follow a uniform format throughout your dissertation. You should use relatively few within the main text, as figures usually do a better job of communicating results. Every table should be given a number (e.g. Table 3.1 etc.) and a succinct caption. Tables should be placed as near as possible to that part of the text in which they are mentioned and must be referred explicitly in the text, e.g. '.... the data summarised in Table 3.1'*.*

Additional guidance:

* data included in tables should always be given to an appropriate number of significant figures.
* tables should be carefully formatted as found in international journals.
* the table caption should only provide the information necessary to interpret the table.
* table legends should be positioned above the table.

Figures and other illustrations - should summarise your main results in as clear and concise a way as possible. A figure conveys as much as ‘a 1000 words’ if designed well, so do use figures, particularly in place of tables, if you can.

Additional guidance:

* use creativity when designing your figures and think about how you can present your results most clearly, the statistical analyses you have conducted and any additional information your reader might require.
* put key statistical results in the figure if appropriate (e.g. R2 values) or in the figure caption, so that the reader can interpret the figure without having to refer back to the main text.
* use colour and multiplot figures when appropriate.
* try to keep colour schemes and figure formatting consistent throughout the thesis. Also, consider trying to make your figures suitable for colour-blind readers (e.g. check colour schemes at http://colorbrewer2.org/).
* make sure that size of the axes labels, legends and all other text is such that they are clearly readable.
* Try to avoid using default formatting in Excel or R (e.g. ggplot)
* As a general guide, you should have at least one main figure for each specific hypothesis or research question you test.
* The figure caption should provide all the information necessary to interpret the figure.
* The figure caption should be positioned beneath the figure.

## Working on your dissertation report

## Back-up your files. You should ensure you keep a back-up of all the work you do, and save as you go! Remember to keep the backup copy in a different place from the original. We recommend backing up to your personal computer, an external hard drive and your University digital online storage on a daily basis. Computer crashes, loss or damage are not a viable excuse for handing in a dissertation late.

## When you make a new backup do not replace the old one – make a new copy saved with the date of backup in the file name and keep all the earlier backups separately. This is called version tracking. Replacing a backup runs the risk of losing both the current version and the backup if either (a) the current version has become corrupted without you being aware, or (b) the computer crashes while in the process of saving.

## You may find it helpful to add a header in the file giving the date when the Dissertation was last updated so that different versions can be distinguished. Remember to delete this header before handing in the final version.

**H. Preparing the final copy of your dissertation report**

No paper copy of your thesis is required, though you may wish to print a copy for your own reference.

Paper: the regulation size of paper is A4.

Margins: 2.5 cm : *left-hand (binding) margin*

2.0 cm : *top margin*

2.0 cm : *right-hand (fore-edge) margin*

2.0 cm : *bottom margin*

Spacing and print size: One-and-a-half spacing for text and print size Arial 11 point. Single spacing should be used for references.

Pagination: Place the page number in the centre at the foot of the sheet. Page numbers should be continuous throughout. Page one should be the first page of the *Introduction*.

Proofreading: Proofreading consists of checking the final copy for errors and omissions and is your responsibility. You are encouraged to proofread collaboratively with your fellow students.

**I. How do I submit my dissertation report and how will it be assessed?**

## Submission of Dissertation Report and Penalties for Lateness

You must submit an electronic copy of your dissertation via Turnitin by **12 noon on Wednesday 16th April 2025**. You do **not** need to submit a paper copy of your thesis. The standard late penalties apply. You should review your progress regularly, and certainly one week before the deadline. If you think there is a danger of failing to meet it, you should consult your Supervisor for advice. Computer ‘glitches’ should be expected and are not considered good grounds for an extension. Documentary evidence of the problem will be required.

## Weighting of the Dissertation Components

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| **Component of Assessment** | **Deadline** | **Proportion of assessment** |
| 2-page plan | Friday 24th May 2024 at noon | Pass/Fail |
| Oral presentation of the plan | w/c Monday 7th October | 5% |
| Ownership  Scale of challenge Initiative  Project management | Throughout the dissertation process:  Begins - Friday 29th March 2024 Ends - Thursday 1st May 2025 | 5% |
| Thesis | Wednesday 16th April 2025 at noon | 80% |
| Oral presentation | Thursday 1st May 2025 | 10% |

1. **The assessment process**

Your dissertation will be read and assessed by two markers, including your supervisor. We use the University Common Marking Scheme and assess the thesis according to the general criteria given below. Each dissertation will differ, but the list below is intended to give you an idea of the general aspects of the thesis we are evaluating:

* Comprehensive knowledge and understanding of the subject, including the relevant literature (e.g., previous observations, experiments and theory)
* The general format and standard of presentation of the thesis – is it clear and concise?
* Clear, well-justified aims and objectives for the project; statement of research questions and/or hypotheses tested
* Clear and adequate description of methods
* Clear description of the results, including figures, tables and illustrations
* Clear and competent analysis of the results
* Validity and depth of interpretation, innovation and creative thinking
* Integration of the findings with those of other studies in the literature
* Critical appraisal of the methodology and its limitations
* Ideas for further study
* Clear summary of the major findings and the broader implications of the work

Please see the sample marking sheets included in the appendices for further details of what is expected for each component. The University Common Marking Scheme is also included.

**J. What is required for the dissertation conference?**

As part of the assessment procedures, you need to deliver a short oral presentation (12 minutes long with 3 minutes for questions) on the subject of your dissertation at the Dissertation Conference (**Thursday 1st May 2025**). Students are expected to attend the entire conference and to participate in the discussions.

Preparing your slides: you should use PowerPoint. Your PowerPoint slides MUST submitted to the course Learn page, by midday on Wednesday 30th April 2025.

Assessment criteria: your presentation will be assessed and the mark will contribute to the final dissertation assessment. Assessment will be based on skills in communication, presentation and answering questions, as much as on the scientific content (which will already have been assessed in the dissertation itself). A copy of the assessment form is included in the appendices.

Content: you should include a brief introduction which covers the dissertation project aims/objectives and provides information on the wider context of the dissertation project; a description of the methodology used; the major results found; and a discussion and interpretation of the results, with reference to the published literature.

You should use your research questions or hypotheses and your overall scientific ‘pitch’ to frame your presentation. This is a science communication exercise. The strongest presentations will put together a compelling scientific story using simple visual aids, little text on each slide, simplified figures/diagrams and a clear take-home message.

Timing: different dissertation projects will require emphasis of different aspects. Twelve minutes is not long and you will have to be selective in what you present. Do not ask ‘how can I cram my project into 12 minutes’; instead, ask ‘what are the most exciting outputs of my dissertation and which bits of my project will the audience be able to digest in 12 minutes’. It helps greatly to practise your talk beforehand.

**K. Appendices**

## I Recommended Reading

This book provides some useful general information about carrying out your dissertation:

# How to Write Your Undergraduate Dissertation (Palgrave Study Skills) by [Dr Bryan Greetham](https://www.amazon.co.uk/s/ref=dp_byline_sr_book_1?ie=UTF8&text=Dr+Bryan+Greetham&search-alias=books-uk&field-author=Dr+Bryan+Greetham&sort=relevancerank). Palgrave Macmillan; 2nd edition, 2014.

## II Guidelines about Scientific Writing

## 

Establish a logical structure for your dissertation report. Remember to use the active voice as much as possible. Write using short paragraphs (4 - 7 sentences long) and relatively short sentences (try to have a maximum of 2 clauses per sentence) - with even paragraph and sentence lengths. Make sure you have clear topic sentences for each paragraph and clear summary sentences that link to the next paragraph.

Here are links to some scientific writing guidelines:

The 5 pivotal paragraphs in a paper – Dynamic Ecology

https://dynamicecology.wordpress.com/2016/02/24/the-5-pivotal-paragraphs-in-a-paper/

JC Cahill’s “Finding the “Pitch” in Ecological Writing”

http://onlinelibrary.wiley.com/doi/10.1890/0012-9623-92.2.196/full

**Supervisor’s comments on DISSERTATION**

Student’s Name: «Surname», «First\_name»

Supervisor’s Name: «Full\_name»

The following specific comments by the supervisor are required for the assessment of this work. This form is sent to the second marker to help them objectively assess the thesis.

a. level of personal involvement by the student

b. level of assistance/guidance given to the student

c. level of statistical assistance offered

d. the degree of complexity

e. the scale of the challenge

f. specific problems encountered and success in overcoming problems

**IV University of Edinburgh Common Marking Scheme**

**See also the more useful Grade Descriptors document, below and on the Dissertation Learn page**

| **HONOURS** | | **NON-HONOURS** | |
| --- | --- | --- | --- |
| Honours Class | Mark (%) | Grade | Non-Honours Description |
| 1st | 90-100 | A1 | Excellent |
| 1st | 80-89 | A2 | Excellent |
| 1st | 70-79 | A3 | Excellent |
| 2.1 | 60-69 | B | Very Good |
| 2.2 | 50-59 | C | Performance at a level showing the potential to achieve at least a lower second class honours degree |
| 3rd | 40-49 | D | Pass, may not be sufficient for progression to an Honours programme |
| Fail | 30-39 | E | Marginal Fail |
| Fail | 20-29 | F | Clear Fail |
| Fail | 10-19 | G | Bad Fail |
| Fail | 0-9 | H | Bad Fail |

**Grade Mark Honours descriptors [degree class]**

**A1 90-100 Excellent (Outstanding) [First]**

Often faultless. The work is well beyond that expected at the appropriate level of study.

**A2 80-89 Excellent (High) [First]**

A truly professional piece of scholarship, often with an absence of errors. As ‘A3’ but shows (depending upon the item of assessment):

significant personal insight / creativity / originality

***and / or***

extra depth and academic maturity in the elements of assessment.

**A3 70-79 Excellent [First]**

**Knowledge:**Comprehensive range of up-to-date material handled in a professional way.

***Understanding and handling of key concepts:*** Shows a command of the subject and current theory.

**Focus on the subject:** Clear and analytical; fully explores the subject.

**Critical analysis and discussion:** Shows evidence of deep thinking and/or an appropriately logical and rigorous approach in critically evaluating and integrating the evidence and ideas. Deals confidently with the complexities and subtleties of issues. Shows elements of personal insight / creativity / originality.

**Literature synthesised, analysed and referenced:** Comprehensive grasp of the up-to-date literature which is used in a professional way.

**Structure:**Clear and coherent showing logical, ordered thought.

**Presentation:** Clear and professional with few, relatively minor flaws. Accurate referencing; using the correct referencing system. Figures and tables well constructed and accurate. Good standard of spelling and grammar.

**B 60-69 Very Good [2(i)]**

**Knowledge:** Very good range of up-to-date material, perhaps with some gaps, handled in a professional way.

**Understanding and handling of key concepts:** Shows a firm grasp of the subject and current theory but there may be gaps.

**Focus on the subject:**Clear focus on the subject with no or only trivial deviation.

**Critical analysis and discussion:** Shows initiative, the ability to think clearly, critically evaluate ideas, to bring different ideas together, and to draw sound conclusions.

**Literature synthesised, analysed and referenced:** Evidence of further reading. Shows a firm grasp of the literature, using good, up-to-date references to support the arguments.

**Structure:** Clear and coherent showing logical, ordered thought.

**Presentation:** Clear and professional with few, relatively minor flaws. Accurate referencing; using the correct referencing system. Figures and tables well constructed and accurate. Good standard of spelling and grammar.

**C 50-59 Good [2(ii)]**

**Knowledge:** Sound but limited. Inaccuracies, if any, are minor.

**Understanding and handling of key concepts:** Understands the subject but does not have a firm grasp and depth of understanding of all the key concepts.

**Focus on the subject:**Addresses the subject with relatively little irrelevant material.

**Critical analysis and discussion:** Limited critical analysis and evaluation of sources of evidence.

**Literature synthesised, analysed and referenced:** References are used appropriately to support the argument but they may be limited in number or reflect restricted independent reading.

**Structure:** Reasonably clear and coherent, generally presenting ideas and information in a logical way.

**Presentation:**Generally well presented but there may be minor flaws for example in figures, tables, referencing technique and standard of English.

**D 40-49 Pass [3rd]**

**Knowledge:** Basic; may have factual inaccuracies and omissions.

**Understanding and handling of key concepts:** Superficial; there may be some gaps in understanding. Lacks detail, elaboration or explanation of the key concepts and ideas; some may have been omitted.

**Focus on the subject:**Addresses the subject but may deviate from the core issues.

**Critical analysis and discussion:** Limited or lacking. The arguments and conclusions may be weak or lack clarity with unsubstantiated statements. The emphasis is likely to be more on description than analysis.

**Literature synthesised, analysed and referenced:** Basic and limited. May lack appropriate citations and evidence of independent reading.

**Structure:** Lacks clarity of structure. Shows poor logical development of arguments.

**Presentation:** Inadequate; may show flaws in the overall standard of presentation or in specific areas such as figures, referencing technique and standard of English (e.g. repeated minor spelling, punctuation or grammatical errors).

**E 30-39 Marginal Fail**

**Knowledge:** Poor and inadequate. Content too limited, there may be inaccuracies.

**Understanding and handling of key concepts:**  Poor and inadequate; does not show sufficient understanding. Concepts omitted or poorly expressed.

**Focus on the subject:**Does not adequately address the subject.

**Critical analysis and discussion:** Poor and inadequate. May be no real attempt to critically evaluate the work.

**Literature synthesised, analysed and referenced:** Poor and inadequate; appropriate literature citations lacking or trivial.

**Structure:**A lack of coherence or poor structure.

**Presentation:** Overall standard of presentation may be poor. May be problems in specific areas such as writing style and expression (making it hard to follow the content), errors in referencing technique, and poor standard of English (spelling, punctuation and grammar).

**F 20-29 Clear Fail**

**Knowledge:** Very poor. Irrelevant or erroneous material may be included. May be very limited in scope consisting, for example, of just a few good lines.

**Understanding and handling of key concepts:** Very poor, may be confused.

**Focus on the subject:**Does not address the subject.

**Critical analysis and discussion:** Extremely limited or omitted. May be confused.

**Literature synthesised, analysed and referenced:** Extremely limited or omitted.

**Structure:** Confusing or no attempt to order the material in a systematic way.

**Presentation:**Writing style and presentation may be unacceptable.

**G 10-19 Bad Fail**

**Knowledge:**Serious lack of knowledge. Irrelevant or erroneous material may be included.

**Understanding and handling of key concepts:** None or trivial evidence of understanding.

**Focus on the subject:**Does not address the subject.

**Critical analysis and discussion:** May be no coherent discussion.

**Literature synthesised, analysed and referenced:** May be omitted.

**Structure:**Confusing or no attempt to order the material in a systematic way.

**Presentation:** Writing style and presentation may be unacceptable.

**H 0-9 Very Bad Fail**

The presented work is of very little relevance, if any, to the subject in question. It is incomplete or inadequate in every respect. A blank answer must be awarded zero.

**The Title Page of your thesis should be as shown on the next page**



**THE UNIVERSITY OF EDINBURGH**

**SCHOOL OF GEOSCIENCES**

**This is the title of my really interesting Honours dissertation**

*BY*

**JOE BLOGGS**

in partial fulfilment of the requirement for the

Degree of BSc with Honours in

Ecological and Environmental Sciences *(and with Management)*

April 2025

**The thesis marking rubric is shown on the following pages**

|  |  |
| --- | --- |
| BSc Ecological and Environmental Sciences / Ecological and Environmental Sciences with Management  **Marking Sheet - Honours Dissertation** |  |

Student:

Title of Dissertation:

Name of First Marker:

Name of Second Marker:

|  |  |  |
| --- | --- | --- |
| **Assessment Criteria** | **Comments** | **\*Mark Awarded**  **%** |
| ***Introduction, pitch, abstract and literature review***:  Does the student have a clear idea of the aims/objectives and is there a realistic assessment of success? Has the experimental design and the data analysis been considered a *priori*? Is the work framed in the context of a testable hypothesis? Is the student aware of the literature which provides the context for the work? Is the literature reviewed and used coherently with critical comment of previously published work?  Is the amount of work reported in the dissertation appropriate for the time available? |  |  |
| ***Methods and Analyses***:  Are the methods of data collection and analysis appropriate, including numerical and statistical techniques? If calculations have been made, are they correct? If a computer package has been used, was it used with discretion and appropriately? |  |  |
| **Results and Figures:**  Are the data displayed in a way which makes the results clear? Are the results adequately described in the text in such a way as to suggest the student has understood their value?  Are any appendices appropriate? Is the work reproducible? |  |  |
| ***Discussion and Conclusions***:  Did the student achieve the stated aims? Is there a sense that the student actually solved the problem, added to the body of scientific knowledge or achieved something worthwhile? Are the results placed in the wider context of similar, published research? Are there any suggestions for how the work could be improved or extended? Did the student demonstrate imagination over and above routine skill and competence? Did the student stick closely to the prescribed methodology or develop new methods? Does the student display innovation and imaginative insight? |  |  |
| ***Presentation of*** ***Dissertation***: Is there a logical succession of chapters? Are figures and tables presented appropriately, *i.e.* with proper titles, legends and axis labels? Have S.I. units been used throughout? Would it be clear to someone unconnected with this work exactly what the student did? Has the thesis been carefully produced and is it free of errors? Are the in-text citations and the reference list complete and correct? |  |  |
| ***Overall*** |  |  |

**General summing-up of dissertation:**

**Specific information that should be drawn to the attention of the External Examiner:**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

First and second markers should mark the dissertation independently using the assessment criteria overleaf. The criteria are guidelines - they are not simply a 'check-list' against which markers can tick off an activity or achievement. Markers should use the comments box as fully as possible. After the independent marking, **the two markers should meet to agree one final set of marks for the dissertation and these marks are to be entered in the Table on the marking sheet of the first marker, along with an explanation of how agreement was reached**. The final marks should not be the result simply of averaging the two sets but should be the result of a consensus between the two markers. In cases where it is impossible to resolve differences between the markers, the Degree Programme Convener or their delegated representative shall be asked to make a third independent assessment. All three markers must then arrive at one final set of marks and explain below how agreement was reached.

**Commentary on how the agreed marks were reached by the first and second markers:**

**[If agreement was not reached and a third marker used, state the name of the third marker and explain how the agreed marks below were reached]**

**AGREED MARKS FOR DISSERTATION (%)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Introduction, pitch, abstract and literature review** | **Methods and Analyses** | **Results and Figures** | **Discussion and Conclusion** | **Presentation of the Dissertation** |
| **Agreed Grade** |  |  |  |  |  |
| **Points** | **8 credits** | **8 credits** | **8 credits** | **8 credits** | **8 credits** |

**Dissertation Performance**

- Scale of challenge/complexity of the project

- Ownership of the project

- Project Management

Please provide a mark which holistically assesses the student performance throughout the dissertation process. The mark counts for 5% of the total dissertation course mark. Please provide it as a percentage (i.e., a mark out of 100).

In assigning a mark, please consider whether the student provided the majority of the creative thought. Did they design the research questions? Did they come to meetings having read relevant literature? Did they demonstrate ingenuity and tenacity? Did they design the methods and understand how to analyse the results? Did they understand how to set the project in the context of the literature?

Was the student diligent in the pursuit of their research? Were there any particular problems which were overcome or have manifestly affected the success of the project? How much supervision was necessary?

Did the student arrange supervisory meetings? Did they submit their 2-page plan and the two Mandated Meeting forms on time (or have a good reason for not being able to do this)? The dissertation process began at the Dissertation Fair in March 2024. Please consider student performance throughout this whole year.

**Please provide comments to substantiate your mark (these may be shared with students):**

**Mark:       %**