SM4501

Honours Projects

Course Handbook

2022-2023

School of Medicine, Medical Sciences & Nutrition

UNIVERSITY OF ABERDEEN

Contents

WELCOME TO YOUR HONOURS PROJECT

The primary aim of our Honours teaching is to develop your powers of critical analysis and communication. Your Honours project forms a key part of this objective and gives you the chance to exhibit these qualities through carrying out a defined research project.

Structure of the Level 4 Honours Year

The teaching in Level 4 involves more input from you than in previous years. You will take a 30-credit course that runs for the full first half-session, with most degree programmes requiring two other 15 credit courses that run consecutively. *Considerable additional reading on your part is needed to support these taught courses*. This taught material is examined in the April/May exam diet.

The research project, lasting 9 weeks, is undertaken in the second semester. You will be assigned to a research team usually on the Foresterhill site, but occasionally projects may be offered by teams in other locations. You will complete your project by independently writing a project thesis, plus you will give an oral presentation on your project. If you carry out a non-lab project, you will present a poster on the topic around the mid-way point. You will gain extensive experience of literature research procedures, data acquisition and data manipulation.

You will be kept busy throughout the year, and it is important that you develop a well-structured plan for the optimal organisation of your time. The tasks to be completed are all important but none should be allowed to dominate your effort. You must learn to set priorities and to apportion a set time to any particular piece of work. When the time has elapsed, move on to the next task and accept that you cannot do everything perfectly. This is not, of course, a set of excuses to try to get by on the minimum of effort, which is not consistent with undertaking an Honours degree.

Points of Contact

Messages for the class will be sent to University e-mail addresses, usually via MyAberdeen. It is your responsibility to check these sources of information. **All important notices will be sent by e-mail; check these frequently [emails will be sent to your University email account only, not to any other accounts you might have]**.

Postgraduate Study

Many of our graduates go on to become research students here in Aberdeen or in other universities. If you are interested in the possibility of studying for a PhD, discuss the position early in the year with members of staff (e.g. your Personal Tutor or a Lecturer/Course Co-ordinator), in the first instance. We can usually suggest suitable departments in other universities for you to approach. Early application is recommended if you wish to be considered for Research Council Awards or if a special application (e.g. for CASE or University Studentships) is to be made on your behalf. Information for Postgraduate Taught programmes can be found at **www.abdn.ac.uk/study/postgraduate-taught/** and for Postgraduate Research at **www.abdn.ac.uk/study/postgraduate-research/**

MyAberdeen

MyAberdeen is the University of Aberdeen's Virtual Learning Environment. This is where you will find learning materials and resources associated with the courses you are studying. All School of Medicine, Medical Sciences and Nutrition courses have a MyAberdeen site, which will have all relevant course material and information. You are strongly encouraged to use MyAberdeen as a study resource alongside other sources of information recommended by your Course Co-ordinator.

You can log in to MyAberdeen by going to **www.abdn.ac.uk/myaberdeen** and entering your University username and password (which you use to access the University network).

Further information on MyAberdeen, including Quick Guides and video tutorials, can be found at:

www.abdn.ac.uk/toolkit/systems/myaberdeen-students/

MyAberdeen also provides direct access to TurnitinUK, the originality checking service, through which you may be asked to submit completed assignments. Further information on this can be found at **www.abdn.ac.uk/toolkit/systems/turnitin-students/**

Support Available to Students

The School wants to see you successfully complete your studies. If at any time you feel you need assistance, there are a range of support services available to help you. In the first instance, Course Co-ordinators, Lecturers and Personal Tutors may be the best people to speak with and will always be willing to offer guidance and support.

If the problem relates to the subject matter, general advice would be to contact the member of staff who is teaching that part of the course. Students with registered disabilities should contact Miss Danielle Robertson (**mailto:danielle.robertson@abdn.ac.uk**) in the School Office (based in the Polwarth Building, Foresterhill), or Ms Kelly Reid (**k.l.reid@abdn.ac.uk**) in the Old Aberdeen Science Teaching Hub, to ensure that the appropriate facilities have been made available. Otherwise, you are strongly encouraged to contact any of the following as you see appropriate:
- Course student representatives
- Course co-ordinator
- Personal Tutor
- School Disabilities Co-ordinator (Dr Derryck Shewan, **d.shewan@abdn.ac.uk**)

All staff are based at Foresterhill and we strongly encourage the use of email or telephone the School Office.

If you feel you need additional support, then the University offers many levels of support for students, such as assistance with unexpected and/or exceptional financial difficulty, support for disabled students and academic learning support through the Student Learning Service. Further details about all these services are available at **www.abdn.ac.uk/student-support**

Transition into Level 4 and beyond

As you progressed through your degree programme, you will have noticed a change in the style and approach of teaching and the expectations upon you as a learner. Expectations change again as you

progress into the final Honours year, where you are expected to become more independent and self-directed in your learning. To help with this transition, a variety of activities will be planned to address any new challenges faced by students at level 4. The level 4 retention co-ordinator - Prof Steve Tucker (**s.j.tucker@abdn.ac.uk**; 01224 (43)7491) - will organise such events and is a point of contact for any level 4 Medical Science students facing any kind of difficulty. Regular activities and workshops will be designed around key issues faced by Honours students much in the same way as it was at level 3. In addition, Prof Tucker will hold regular, advertised drop-in surgeries for students to raise any issues face to face and all level 4 Medical Science students will have access to a MyAberdeen site (How to score at level 4) that will offer information, feedback, guidance and discussion forums designed to ease students through to the completion of their degree. Dr Shewan (**d.shewan@abdn.ac.uk**) is also available at any time to discuss difficulties involving projects or the Honours 4th year in general.

Absence from Classes on Medical Grounds

Students who wish to establish that their academic performance has been adversely affected by their health are required to secure medical certificates relating to the relevant periods of ill health.

The University's policy on requiring certification for absence on medical grounds or other good cause can be accessed at:

www.abdn.ac.uk/staffnet/documents/academic-quality-handbook/Policy%20-%20Student%20Absence.pdf

You are strongly advised to make yourself fully aware of your responsibilities if you are absent due to illness or other good cause.

Class Representatives

We value students' opinions regarding enhancing the quality of teaching and its delivery. Therefore, in conjunction with the Students' Association, we support the Class Representative system.

In the Medical Sciences we operate a system of course representatives, who are elected from within each course. Any student registered within a course that wishes to represent a given group of students can stand for election as a class representative. You will be informed when the elections for class representative will take place.

What will it involve? It will involve speaking to your fellow students about the course you represent. This can include any comments that they may have. You will attend a Staff-Student Liaison Committee and you should represent the views and concerns of the students within this meeting. As a representative you will also be able to contribute to the agenda. You will then feedback to the students after this meeting with any actions that are being taken.

Training for class representatives will be run by the Students Association. Training will take place within each half-session. For more information about the Class representative system visit **www.ausa.org.uk** or email the Education Officer **pres.education@abdn.ac.uk**. Class representatives are also eligible to undertake the STAR (Students Taking Active Roles) Award with further information about this co-curricular award being available at: **www.abdn.ac.uk/careers**.

Course Evaluation

To assist in the development and future operation of courses, the University seeks your views on the effectiveness of the teaching-learning process. A University Course Evaluation Form is used to gain information about how you viewed the process in general: essentially, the same form is used for all courses at all levels. Electronic forms will be sent to you towards the end of the course.

Bear in mind that we would also like written comments about the elements of teaching. We are very keen to know both what you liked and what you did not like regarding any particular aspect of the Honours year. If you wish to criticise something it would be helpful to have specific comments regarding what you think is wrong and suggestions for improving that aspect.

The comments you make will be collated and discussed at a Student-Staff Liaison Committee meeting, at which your Class Representatives will be present and asked for their views. At that meeting, the proceedings of the corresponding meeting for the previous year will be reviewed, so that progress made in course development as a result of previous student comment can be checked. The Head of School must report to the University Academic Standards Committee on the results of the student evaluation of each course run by the School.

Your comments, then, are taken seriously, and the School's reaction to them is monitored – in part by the succeeding generation of students. For a more immediate response, we encourage you to make critical (or other) comments, if you have them, directly to a member of the teaching staff, to the course co-ordinator, or to a class student representative – whichever seems the most appropriate.

HONOURS ASSESSMENT

All Level 3 and 4 grades will contribute towards Medical Science Honours degree outcomes, with 30% of the final degree outcome coming from Level 3 and 70% from Level 4.

For those students taking a MSci programme and completing an industrial placement year, this placement year does not contribute to the overall Honours degree outcome.

For any students taking additional credits at Level 3, all courses are taken into consideration when calculating the Level 3 GPA, and therefore the additional courses taken will contribute to degree outcomes.

See the Assessment and Feedback Handbook for further information on degree outcomes.

Submission of Written Work

It is vital that the deadlines for coursework and thesis are adhered to. Work not submitted on time will not be accepted unless accompanied by either a **medical certificate or a written explanation** justifying this.

Deadlines

All deadlines must be kept ensuring the Honours year runs smoothly and you can gain valuable feedback and comment on your work throughout the year.

Examinations

Five exam papers are taken in the summer exam diet. There are three papers that cover the taught material from the first half-session: One paper for the 30 credit taught course and one paper for each of the 15 credit taught courses. A fourth paper will test data analysis skills and a final fifth paper will test general scientific essay writing.

The examination timetable will be posted via MyTimetable and emailed to all students as soon as it is available, close to the exam diet.

Marking

Marking of examinations is carried out on coded scripts, so that the identity of the student is unknown to the marker. Please co-operate in this by giving no information that would identify you on your examination scripts; **only** your student ID number is necessary. Marking is carried out by two members of staff, as a first marker and a second marker to check and verify grading. A copy of the CGS (Common Grading Scale) used for marking is included in this section. All work (continuous assessment and examinations) will be marked using this scale, and you will be told the CGS marks attained in your written submissions.

In the Project section of this manual, you will find detailed information on how Honours project work is assessed. Similarly, there is specific information on assessment of continuous assessment work in the relevant section of the Course Manuals.

Medical Sciences Common Grading Scale (CGS)

Grade	Grade Point	Category	Honours Class	Description
A1	22	Excellent	First	• Outstanding ability and critical thought • Evidence of extensive reading • Superior understanding • The best performance that can be expected from a student at this level
A2	21			
A3	20			
A4	19			
A5	18			
B1	17	Very Good	Upper Second	• Able to argue logically and organise answers well • Shows a thorough grasp of concepts • Good use of examples to illustrate points and justify arguments • Evidence of reading and wide appreciation of subject
B2	16			
B3	15			
C1	14	Good	Lower Second	• Repetition of lecture notes without evidence of further appreciation of subject • Lacking illustrative examples and originality • Basic level of understanding
C2	13			
C3	12			
D1	11	Pass	Third	• Limited ability to argue logically and organise answers • Failure to develop or illustrate points • The minimum level of performance required for a student to be awarded a pass
D2	10			
D3	9			
E1	8	Fail	Fail	• Weak presentation • Tendency to irrelevance • Some attempt at an answer but seriously lacking in content and/or ability to organise thoughts
E2	7			
E3	6			
F1	5	Clear Fail	Not used for Honours	• Contains major errors or misconceptions • Poor presentation
F2	4			
F3	3			
G1	2	Clear Fail/ Abysmal	-	• Token or no submission
G2	1			
G3	0			

HONOURS RESEARCH PROJECTS

Learning Outcomes

The main objective of your Honours project is to provide you with first-hand experience of how new scientific information is acquired and assimilated into the existing body of knowledge through acquirement of data and/or analysis of the literature.

An Honours project is a complex, multistep process and will provide training in some or all of the following:-

- Identification of subject areas that contribute to the project topic and definition of the most important ones.
- Identification of the crucial contributory strands of evidence from the literature.
- Learning and developing research skills required for frontline scientific research.
- Acquiring the skills to access original and secondary sources in the literature.
- Enhancing knowledge, and effective use of, computer-based databases and the library.
- Further developing personal skills with databases, graphics and word processing packages.
- Acquiring and developing an ability to work in a team or independently.
- Refining effective time management skills.
- Acquiring detailed knowledge of the topic and underlying evidence and integrating this into a coherent account.
- Preparation and presentation of oral and written accounts.

Thus, the project, more heavily than any other course in the Medical Sciences, is designed to encourage a deeper academic understanding and to develop transferable and communication skills. The projects are designed to permit students to actively study the very latest scientific research in a chosen field.

Project Allocation

During the first half-session a list of available projects will be posted on MyAberdeen. You will be notified of this via email. Students are strongly encouraged to approach individual members of staff to discuss specific projects on offer, which helps enormously in making informed choices. **You will be asked to choose 10 projects ranked in order of preference.** Projects are allocated according to student choice whilst taking previous academic achievement into account. Every effort is made to provide students with one of their chosen projects and, in the vast majority of cases, students are allocated a project towards the top of their shortlist. Once projects have been allocated, all students and supervisors are notified of the allocations – this will be sometime in the latter part of the first half-session.

Research Projects

Research projects last for 9 weeks, starting early January. Make sure that you see your supervisor as early as possible during the first semester, in order to discuss the project and its aims.

The project will occupy 25-30 hours per week. **Tutorials or seminars run during the same term should not be missed in order to devote more time to your project**.

At the end of the first 2 weeks of your project, you should have proposed and discussed with your supervisor the overall structure of your research project and how this will be addressed in your thesis. You should aim to see your supervisor formally no less than once a week and it should be your duty to organise these meetings in conjunction with your supervisor. At these meetings, you should review what you have done, what conclusions you have reached and what your future intentions are. You will be expected to be innovative and these meetings with your supervisor are for you to put forward your own ideas for discussion, not just to ask what to do next.

Your project time will be graded based on the following criteria:

- **Motivation and engagement.** We expect good students to show interest and enthusiasm in their work and to be able to maintain this attitude when setbacks are experienced. You are expected to work for around 25 h per week on the project. The time cannot be more than a recommendation, but clearly you should be available whenever your research requires it, which may be for meetings, or to access resources or to attend other project-related sessions. Similarly, you must be there when an arrangement has been made to show you a process or to discuss your research.
- **Organisation of time.** This is even more important than mere attendance. A good student will fit in the work to be done in an effective way, will be prepared for future work, and will not get into a position where they are confused by the programme of work.
- **Experimental design and execution.** This includes thinking about the aims of the research and planning it accordingly. It also covers technical ability and the capacity to take instruction.
- **Data analysis and interpretation.** This involves how well you handle data. Do you make appropriate calculations, without error? Students are expected to be able to draw some conclusions from the research performed, and not to be reliant on others to point out the significant findings. Do you understand what information can be drawn from the data from further calculations, graphical methods and statistics?
- **Contribution.** This is a measure of understanding of your work and of how it might be extended. This is divided into two sections, to distinguish between technical improvements and more radical suggestions for using new approaches.
- **Achievement.** This comments on what you actually achieved. Did you make reasonable progress and go some way towards achieving the aims of the project?

It is very important to organise and structure your time well during the project, setting out defined time per day for literature searching and an appropriate amount of time for analysis and thesis planning, all of which can be discussed with your supervisor. **You are required to keep a record of this, and these records will be assessed along with your research performance by your supervisor.** As well as analysing the literature, you should bear in mind that your project may include access to databases and making novel comparisons of previously published data to support any new hypotheses

you may be making. It is important that you are completely familiar with the way data were obtained in the literature/sources you are accessing. You should spend some time considering how to set out your thesis **to emphasise the novel nature of the research you have undertaken**.

Thesis

Your thesis represents an important component of your output in the Honours year. **Plan and write it carefully**. We strongly recommend "A guide to scientific writing" by David Lindsay, (Longman Cheshire). This will help you with the planning of essays and seminars, as well as with your thesis.

Your Honours thesis is a document that should be entirely your own work. **Before** starting to write it, you should discuss with your supervisor in detail issues of thesis structure, content and style. You should also discuss experimental interpretation and analysis, so you can be sure you are on the right track before putting pen to paper. **Your supervisor may comment on a draft of your thesis but this will be restricted to a <u>single draft only, either the whole thesis or on a chapter by chapter basis.</u> Any other people involved in your project (e.g. post-doctoral researcher/PhD student) who may have acted as a lab supervisor, will NOT be able to give you any feedback, written or otherwise, on any thesis draft document**. Please do not embarrass them by asking for such help. The thesis is an examined piece of work and should be your own effort.

Thesis submission
Your thesis should be saved as a PDF file and submitted to MyAberdeen by 5pm of the deadline date. It is important to plan ahead to make sure you submit on time. Exam revision follows immediately after thesis submission, so submitting on time is very important.

Instructions and Guidance for Authors
All theses must conform to the general format described in this section. Please take the time to read this section carefully and refer to it often when writing your thesis. These are guidelines and not all theses have to be exactly the same but following these guidelines will produce a thesis of appropriate standard.

Length of the thesis
A lab project thesis should be **5,000-7,500 words** and a non-lab project thesis should be **7,500-10,000 words.** No +/- 10% is allowed, and the upper limit is the absolute limit – do not exceed it.

The word limit **<u>does not</u>** include the following:

- Title and declaration pages
- Abstract
- Contents page or abbreviations list
- Acknowledgements
- Figure legends
- Text within tables, diagrams and photographs
- Reference list (in-text citations **are** included in the word count)

Your word-processor software will give you a word count for your thesis; this must be included on the cover (title) page. It would be an idea to save a copy of your thesis with all content included and one without figure legends, tables etc, so you are aware of your word limit.

The individual sections may vary considerably in length depending on the particular project, so your supervisor will be able to aid you in this. As with any submission of a paper to a journal, students are expected to keep to the word count. Please note that these recommendations, and the thesis format, have changed in recent years; previous theses are therefore not necessarily a good guide in terms of length or structure.

Sections of the manuscript

Depending on the nature of your research project, theses will follow the same format but with subtle differences in the sections. For example, it is likely that a more literature-based project will not have a Materials and Methods section or a Results section, but this will depend on the subject under investigation. Some other types of projects (e.g. educational research or bioinformatics) may have a slightly different structure again, so seek advice from your supervisor if you are not sure. Honours theses should contain the sections (if applicable to your project) in the order shown, with each new section beginning on a new page. But remember, each thesis may not be the same and these instructions are for guidance only – you may use the font, size etc that you wish as long as you and your supervisor are in agreement that the final product is a sensible thesis.

- *Title page* – A concise, informative title that accurately conveys the subject matter or outcome of your project. Your name, supervisor(s) and a word count should also be included. You may also include an image or the University crest on the front cover if you wish. It's your thesis – customise it as you wish. You will not be penalised for customising the front cover as you wish.

- *Declaration* – The page after the front cover should include a personal statement that the thesis and the work described in it was done by you and any input from others is appropriately acknowledged or cited. There is no exact text required for this, but something along the lines of "I hereby declare that all work described in this thesis was carried out by me in collaboration with my lab partner, XXXXXXXX [if you worked with someone else], and that I have written this thesis independently with all work and contributions duly acknowledged and cited." Print and sign your name (by text or electronic signature) to authenticate this declaration.

- *Abstract* – A concise (not more than 250 words) paragraph that allows the reader to understand the context, aims, results and main conclusions of the work without having to read the rest of the thesis. Abbreviations and reference citations should not be included in the abstract. The overall aims of the thesis should be briefly stated in this section.

- *Introduction* – This introduces the historical background to the research and outlines the current state of knowledge. It points to the questions that remain to be answered and the specific question your study tackles. It therefore should include, and lead naturally to, a clear

statement of the **Aims** of the project. Figures/tables are encouraged in order to aid description and organisation, but make sure they are fully integrated with the text. There is no defined length of this section, but it should be appropriate in the context of the overall thesis. Discuss with your supervisor.

- *Aims* – The aims should be described on a separate page and should be a brief (50-150 word) summary of the question(s) the research sets out to answer. Use of bullet points is fine.

- *Materials and Methods* – This section describes how to perform the methods used; it must not give the rationale for doing the experiments, but it is permissible to mention what it is used for. Remember that published methods must be referred to, and that these only need a brief description identifying modifications made to published methods. The materials and methods used should be presented in a logical order. It is essential that readers of the thesis be able to repeat your work from the description given but avoid excessive detail; your supervisor will guide you on this. Do not forget to mention the statistical methods used.

- *Results* – This section tells the story of what you did, with enough explanation of each result to show why you did the next experiment. The reader will only notice trends in Figures and Tables that you bring to their attention so make sure you explain what to look out for. In general, make no references to the literature in this section, except where it is essential to explain why you moved on to another approach. The text in the results section must be continuous, i.e. do not insert page breaks after each Results sub-section. All figures and tables should be well annotated, contain informative legends with clear keys and indicators of statistical comparisons where appropriate. You should include for each experiment a narrative account of the results, referring to figures/tables from the main body of text, numbered in the order in which they are cited. The reader should not be expected to interpret tables or figures unaided. Wherever appropriate, defined statistical procedures should be used to indicate the variability of results and to test the significance of comparisons between different experimental conditions.

    Figures and Tables may go on separate pages, following as closely as possible after first mention in the text. However, smaller figures/tables may be incorporated on the same pages as text if it means leaving large blank spaces. It comes down to common sense. **Figure legends** are an important component. Legends should give all keys to symbols and should also explain error bars and statistical tests. If an experiment was done multiple times, this should be stated, as should information on whether all data were averaged to give the graph shown etc. The reader should be able to see what kind of experimental error is shown. It is vital to distinguish between different sources of variation. For instance, you will need to consider assay variation or variation between different experiments.

    Controls are central to experimentation. Avoid value judgements in your choice of term. Your view of positive or negative controls may not be the same as the reader's, so explain what is

present or absent in any particular control. Most systems could have several controls; as with blanks, it is important that the reader understands what you mean by the term. In particular, never talk of <u>the</u> control; it suggests that you can only think of one.

If possible, keep this section to a statement of results, with supporting figures and tables, but provide linking paragraphs to say why you did what you did and to show how one result led on to the next. It is not necessary to present this section in the order in which you performed the work. Remember not to quote data to more significant figures than is justified. Finally, remember it is critical that the results section communicates well to the reader. It is strongly suggested that you consult examples of well-written papers, perhaps in EMBO Journal, to see how experienced researchers communicate their findings (try taking a look at Templin *et al*. (1999) *EMBO J* 18; 4108-4117, or Endres *et al*. (1999) *EMBO J* 18; 3214-3221). Note the EMBO J. format is different to that required for your thesis; nevertheless, these papers represent good examples of clear scientific description. But the bottom line is to seek advice from your supervisor. That's what they are there for.

- ***Discussion*** – This is where you make connections with the literature, speculate on overall mechanisms and suggest extensions of your work. Make certain your Discussion is not a reiteration of results. You must discuss what your results mean and place them in the context of published material. Include suggestions for possible future work. It is usually best to incorporate these into the body of the Discussion, each appearing at the most appropriate place. You may prefer to keep it separate but, if you do, make sure it follows directly; if it appears as a new section, links between your work may be missed by the reader. Sub-headings are often appropriate. Finish your discussion by drawing some conclusion(s) from your study and state to what extent you have achieved your stated aims. You may wish to have a separate Conclusions section.

- ***Acknowledgements*** – Briefly acknowledge those who have contributed to the project, shared in experiments or otherwise contributed data, or assisted in any way to the successful completion of the project and the thesis. There is no real format to this – it is personal to you.

- ***References*** – Make sure that you have read the references you quote and that the reference list is accurate. Avoid excessive reliance on reviews. Where appropriate, cite the most up-to-date references possible. Use the **Harvard style of citation** with a list of citations at the end of the thesis (referencing of EMBO Journal articles is a good example).

  In the text, a reference should be cited by author and date, e.g. 'Water is known to boil at 100°C (Jones and Brown, 1872; Brown *et al.*, 1873) and freeze at…'. Not more than two authors may be cited per reference; if there are more than two authors use *et al*. References should be listed alphabetically according to the initial letter of the surname of the first author. Where the same authors have published more than one paper, list them in the order in which their papers appeared. If necessary, use 'a' and 'b' (e.g. 1990a), with the authors' surnames and initials inverted. References should include, in the following order: authors' names; year;

article or chapter title; editors (books only); journal or book title; name and address of publisher (books only); volume number and inclusive page numbers.

The name of each journal should be abbreviated according to the World List of Scientific Periodicals (see an EMBO J. paper for reference) and italicized. References should therefore be listed as follows:

Tugendreich, S., Bassett, D.E., Jr, McKusick,V.A., Boguski, M.S. and Hieter, P. (1994). Genes conserved in yeast and humans. *Hum. Mol. Genet*., 3, 1509-1517.

Gehring, W. (1994). A history of the homeobox. In Duboule, D. (ed.), Guidebook to the Homeobox Genes. Oxford University Press, Oxford, UK, pp. 1-10.

Lewin, B. (1994) Genes V. Oxford University Press, Oxford, UK.

General format

Your thesis should be legibly typed using a sans-serif font (e.g. Arial or Calibri) with an A4 page size. The manuscript is best 1.5 line spaced. Margins of at least 25 mm (1 inch) should be left at the sides, top and bottom of each page. Number each page at the bottom (Title page is 1). Clearly identify unusual or hand-written symbols and Greek letters. Differentiate between the letter O and zero, and the letters I and i and number 1. Figures and tables, with their legends, should be included at the appropriate point in the manuscript where their corresponding text lies. Pictures need to be inserted as jpeg or tiff files into text. The student's name and the title of the thesis should be on the cover.

Technical notes on thesis production

1. It is important to produce clear, well-planned diagrams. All graphs and diagrams should be clearly visible, preferably in black and white, or colours that are easy to distinguish. If you intend to reduce the size of diagrams to half the size of the original, lines and lettering in the original must be twice the size you require in the final copy – this is an important point to note when cutting and pasting diagrams into your word-processed documents from other sources. Avoid fine shading or stippling that will not reproduce well. Allow enough time for writing your thesis. Make an early start and be realistic about your speed of production.
2. Make back-up copies of your computer files as you go along. **Computer problems will not be accepted as an excuse for late submission**.
3. You should prepare images <u>as soon as possible</u>, preferably as the research proceeds.
4. Be careful of your use of punctuation. In general, titles and headings do not require full stops. Use a spellchecker on your computer where possible. Use British spellings.

Assessment of thesis

Your thesis is assessed by your supervisor and another member of staff. **This assessment is not open to negotiation. If you are unhappy with the assessment, you must approach your course coordinator.**

Your supervisor will be asked to provide feedback and comments on the final submitted form of the thesis as part of their continuous assessment grade for your project work. They will also provide

feedback and comments on your skills in producing the thesis and how well you incorporated changes and/or dealt with constructive criticism during the production of your thesis.

Project Oral Presentations

You are required to give a presentation on your project. Each student presentation should be timed to last for **TEN MINUTES**. The general advice on preparation of theses is equally applicable to presentation preparation. Remember that your aim is to inform your audience about the research project. Think of what they need to know to understand what is to be presented; setting out to impress the audience often gets in the way of communication. Your project supervisor and your classmates will all give you useful advice on presentation. Seek it in good time, so that you can use it well. Two aspects are particularly important: "Content" and "Presentation" (clarity of communication).

Content

Introduction: A short talk leaves little time for the audience to get to grips with the topic. Consequently, a valuable use of time is to tell the listeners at the start what the talk is about. The introduction should contain the following information: what was being investigated, why it was being investigated.

Experimental work: What experimental system was being used and why. In 10 min you must limit yourself to only the essential details and you are entitled to assume an understanding of basic technology. You may also have to select which of your data to present. You must select the research that is most critical and informative and present that. Make sure the information presented is sufficiently clear to allow your audience to understand it easily.

Conclusions: Make sure that the conclusions can be drawn from the information presented.

Presentation

Effectiveness of communication: Be professional, prepare well, do not be flippant. Speak clearly and look directly at your audience. Practice your talk and try to use your own words. Avoid reading your talk from a prepared script.

PowerPoint slides: Write legibly and with a large enough size of letter that it can be read clearly; do not put too much information on one slide. Use animations to guide the audience through the slide in step-wise fashion. If you have a figure, make sure the text is legible and make sure any colours are easily distinguishable – this is particularly important if you have any microscopy data, especially fluorescence microscopy.

Time keeping: You only have 10 mins so practice your talk with a view to keeping to time. Do not assume that you will speed up on the day allowing you to cram 20 min into 10.

Questions

Spend some time thinking about possible questions and try to prepare yourself for this part of the seminar. A frequent problem is that the student is so prepared to view the question as a challenge; they fail to notice how simple and even how helpful the question is. Try to listen calmly, and don't rush your answer. Be prepared to answer technical questions on protocols etc., since not all the audience will be familiar with the methods you have used. And don't worry if you don't know the answer – that's quite alright.

Honours Project Poster Presentations

Students undertaking non-lab projects will be required to present posters on their work at around the half-way stage. Further instructions on this will be provided in due course.

Honours Project Assessment and Feedback

Project theses will be graded online and criteria for assessment communicated to you via MyAberdeen during the projects. You will receive one grade for your project, but feedback will be communicated as required.

Key Dates and Deadlines

Projects begin Monday 9th January

Non-Lab poster presentations are estimated to occur on Wednesday 15th February

Lab projects end on Friday 10th March

Oral presentations for all projects take place on Thursday 16th March

Thesis submission deadline is 5pm on Friday 31st March