

UNIVERSITY OF ST. ANDREWS

SCHOOL OF MEDICINE

MD4002 Medicine

Module Handbook 2017/2018

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MD4002 OVERVIEW

MD4002 commences on **Monday 29th January 2018**.

Students will undertake an Honours level Student-Selected Component (SSC)(40 Credits) in the form of a research project. The SSC will enable students to pursue an area of their own particular interest at an advanced level and further develop their critical appraisal skills. All projects must be completed with a supervisor from the School of Medicine (which includes Honorary staff). Core skills training in critical appraisal, referencing and literature searching will be provided in the first week of the module with additional weekly sessions within your topic area designed to develop these skills further. In this module students will write a Dissertation, give an oral presentation and submit a reflective portfolio entry.

Specific learning objectives include:

- Develop an understanding of scientific methods, including technical and ethical principles used when designing experiments
- Develop the ability to use resources in a systematic and organised fashion
- Develop an inquisitive and questioning attitude and apply rational thought processes.
- Be competent in the use of literature searching using online methods.
- Understand the structure and organisation of a scientific paper
- Be able to formulate a workplan in order to complete a task at an appropriate level in a defined time frame.
- Prepare a dissertation on a selected advanced topic demonstrating critical thinking, analysis and understanding of the topic.
- Summarise the findings of the dissertation topic and present them using a Powerpoint presentation.
- Develop reflective practice using a portfolio entry for a significant learning event

Introductory lectures and sessions covering core skills of critical appraisal, statistics, referencing and advanced literature searching will be held for all students. There are also guided studies on plagiarism and how to write a plain English summary.

There will be weekly meetings with your supervisor to decide on the dissertation topic, formulate a research question/research hypothesis and to monitor progress. Both you and your supervisor must sign the MD4002 learning contract (see Appendix 1).

There will be weekly meetings/workshops within your topic strand to further develop core skills. These may take the form of clinical case discussions, journal club presentations or clinical reasoning sessions. All students will be expected to contribute to these sessions.

THE DISSERTATION

The dissertation contributes 100% of your module grade. The total number of hours that a student should devote to their project should reflect the fact that it accounts for 66% of the normal semester workload. The topic of your dissertation will be discussed with your supervisor who will help you focus on a suitable topic. This must be approved by your supervisor.

All dissertations must answer a specific research question or research hypothesis, and should include critical appraisal of the literature to answer this question. In the case of laboratory, data and medical education projects, an appraisal of your own results is also required. It is not acceptable to write a descriptive dissertation. For example you cannot write a dissertation on “ The properties of aspirin”, but you could research the question “ Does aspirin modify the incidence of colo-rectal cancer?” Your supervisor will arrange a series of meetings to advise you on the production of your dissertation. Guidance and feedback will be given on aspects of all sections of the dissertation, **except the Discussion, and Abstracts which should be written without assistance.** General discussion with your supervisor about the structure of your Discussion section and some of the literature you are considering including, is acceptable.

For the research dissertation you are expected to make extensive use of the medical and scientific literature in researching your topic. Make full use of the NHS library and the facilities of the University library. If material is not available from these sources then the interlibrary loan request scheme can be used. You will need to get your supervisor’s approval and signature before requesting these as they are expensive. There can be a delay in obtaining this material. Each student is allocated £5 worth of print credit for MD4002.

Where appropriate, the School will, through your supervisor, bear costs that are essential to your project. This may include such costs as travel if intrinsic to the project. It will only include such things if they are absolutely necessary. Discuss expenses with your supervisor at the commencement of the project. All expenses must be approved by your project supervisor and you must retain receipts for reimbursement using forms available from

<http://www.st-andrews.ac.uk/students/money/otherinformation/paymentofstudentexpenses/>

Return completed forms to the School Admin Office.

Dissertation layout

The dissertation must be produced as a word processed document. Use at least 1.5 space lines and a font that is easy on the eye to read (a sans serif font such as Arial). Leave a wider margin on the left side than the right to allow for binding (3cm left and 2cm right). The dissertation should be 10,000 words in length, +/- 10%. For critical review projects, 30-40% should constitute the Introduction, 10-20% Methods and Results, 40-50% Discussion. For laboratory, medical education data and other data handling projects you should aim for approximately 30% Introduction, 30% Methods and Results and 40% Discussion.

The dissertation should include the following sections, where relevant, in this order:

Title page:	Title, Candidate number and Date. The template for you to use will be available on Galen. Do not put your name on the title page, or anywhere else in your thesis. Do not alter the title page in any way
Signed thesis declaration form:	This will be available on Galen. You must sign it. Your dissertation will not be accepted without this. Please complete the word count table for each section relevant to your thesis. Also complete the individual declaration statements. AFTER you have checked the hard copy of your thesis, HANDWRITE your candidate number where indicated.
Contents list:	With page numbers
List of Figures and Tables:	With page numbers
List of Abbreviations	
Scientific Abstract:	Single page summary (maximum 250-350 words); may be single spaced if necessary. This summary should be written for someone with the same scientific background as you.
Plain English Summary:	Single page summary (maximum 250-350 words); may be single spaced if necessary. This summary should be written for a lay audience with no scientific background.
Introduction:	This must include a clear statement of the research question being asked or research hypothesis being tested. The relevant literature should be reviewed to indicate what research has already been done in your chosen area. Depending on the nature of the topic this may be

subdivided into sub-sections. Citations of relevant work must be placed appropriately throughout the main text.

- Methods:** All projects require a Methods section including a section on statistical analysis methods, if performed. Critical Review dissertations should include an indication of literature searching strategy in a methods section. For lab/data projects the methods include all the essential information necessary to repeat the experiments/analysis.
- Results:** Data handling and laboratory projects will have a results section. Critical review projects should also have a results section, which can be a concise text summary and table of the results of the studies appraised (additional tables/data can be placed in the appendix to reduce word count).
- Discussion:** Projects should discuss the results obtained, their validity and any limitations, and their context in relation to other previously published work in the field. For critical review projects and lab/data/practical projects, this is where you show your appraisal skills and synthesise your findings to answer your question.
- Final conclusion:** A summary section drawing the project to a final summary and conclusion.
- References:** See detailed explanation of Referencing below
- Appendices:** Could be used for raw data from a research project, or literature searching strategy, or additional tables, etc.

What contributes to the word count?

Included	Excluded
Introduction	Title page
Aims	Scientific and Plain English Abstracts
Materials and Methods	Table of Contents
Results written as text	List of figure/tables
Discussion	List of Abbreviations
Conclusion	Declaration
	Figure Legends
	Tables (incl. any results in tables)
	Reference list
	Any appendices

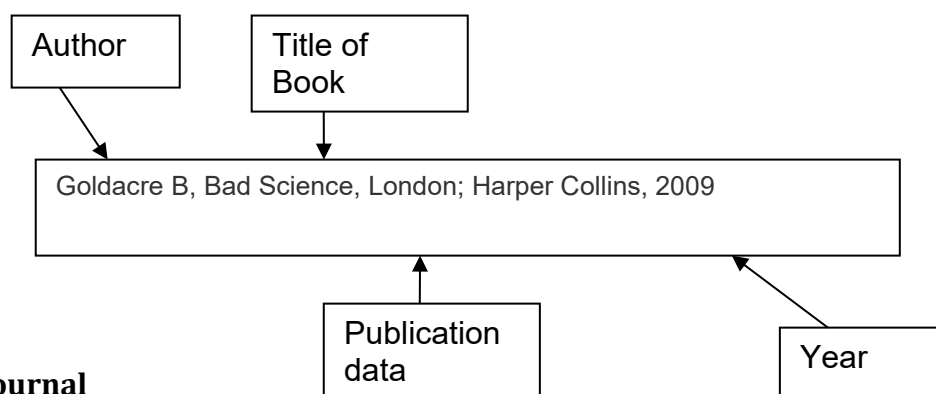
REFERENCING GUIDELINES

The final dissertation should cite **no more than** 100 key research papers depending on the area of research (note this is a maximum). Although references can, in some cases, be from the web, be cautious in your use of web material. It should only be used if it is reproduced from peer-reviewed journals of good scientific standing. You may also wish to use books, but these should usually be specialised texts. Use of general medical or scientific textbooks should be extremely limited and will not be of sufficient depth for this project.

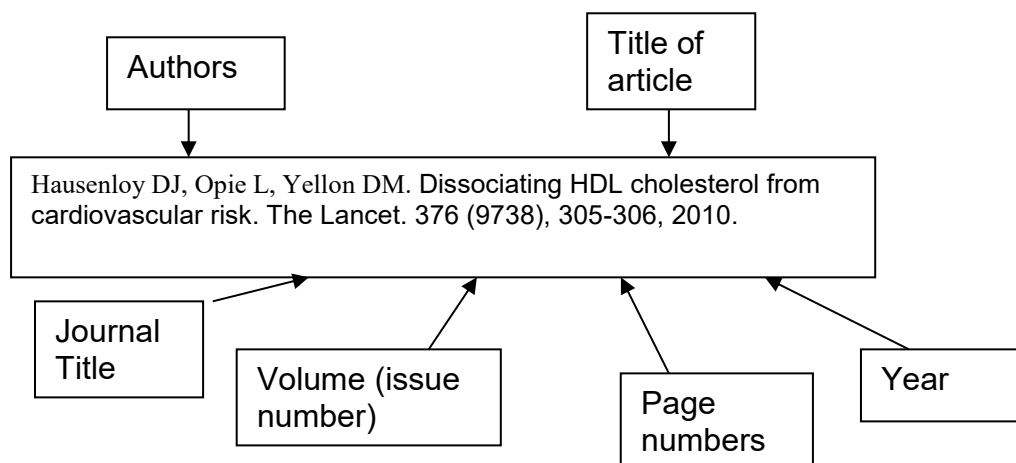
Referencing is essential so that you can acknowledge the work of others, and so that the reader knows where to find further information if necessary. Failure to reference properly is not only bad practice but may lead to allegations of academic misconduct for which the university has severe penalties.

No matter what type of reference you wish to cite you need to find some key facts; the author, the title, the source, and the year of publication. For example:

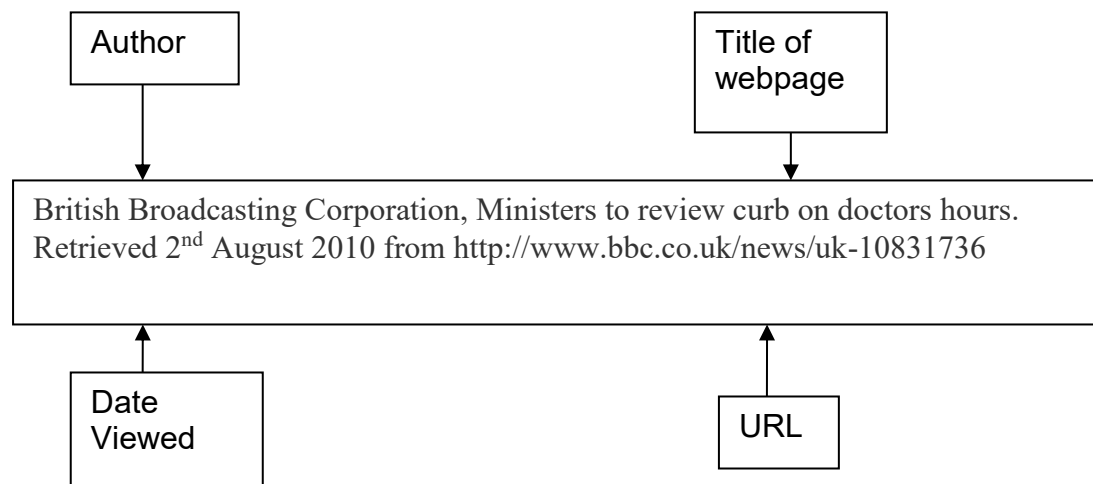
Book



Journal



Web Based Resource



Citation methods differ in the way that this key information is presented. In MD4002 you can use EITHER the Vancouver Method OR Harvard method (detailed further below). In the Vancouver method numbers are used in the text to denote a reference and then these are listed in numerical order at the end of the work. Using the Harvard method the author and the year are given in the text and the references are listed alphabetically at the end of the text. There are advantages and disadvantages to both methods and you may wish to discuss with your supervisor which is the most appropriate to use. In either case it is your responsibility to check the accuracy of your referencing.

Vancouver Method

Referencing in the text

References should be numbered in the order in which they appear in the text. The numbers should be indicated in brackets.

Example: In response to extreme cold histamine is released into the circulation(1). This affects the response of the complement system(2).

Quoting from references in the text

Use single quotation marks and indicate the page number. Quotations of more than one sentence should be indented as a separate paragraph.

Examples:

It has been emphasised(1 p12-14) that carers of diabetes sufferers 'require perseverance and an understanding of humanity'.

A recent UK report(4) summarised the importance of mathematics to society and the knowledge economy, stating that:

'Mathematics provides a powerful universal language and intellectual toolkit for abstraction, generalization and synthesis. It is the language of science and technology. It enables us to probe the natural universe and to develop new technologies that have helped us control and master our environment, and change societal expectations and standards of living.'

Reference list

At the end of the article the full list of references should follow the Vancouver style in numerical order as appeared in the text.

Please give the names and initials of all authors (unless there are more than six, when only the first six should be given followed by *et al.*). The authors' names are followed by the title of the article; the title of the journal abbreviated according to the National Library of Medicine (available at <http://www.ncbi.nlm.nih.gov/journals>); the year of publication; date (if available); the volume number (issue number in brackets): and the first and last page numbers.

Example:

1. Soter NA, Wasserman SI, Austen KF. Cold urticaria: release into the circulation of histamine and eosinophil chemotactic factor of anaphylaxis during cold challenge. N Engl J Med. 1976 Mar 25;294(13):687-90.

References to books should give the names of any editors, book title, place of publication, editor, year of publication and page numbers.

Example:

1. Osler AG. Complement : mechanisms and functions. Englewood Cliffs, N.J. : Prentice-Hall; 1976. 193 p.

For material published online, give the authors, title, name of website, date of publication as given on the web page, URL and date of access.

Example:

1. Office for National Statistics. Cancer statistics: registrations series MB1 [Internet]. 2010 [cited 2010 Aug 12]. Available from: www.statistics.gov.uk/StatBase/Product.asp?vlnk=8843

Information from manuscripts not yet in press or not yet published online, papers reported at meetings, or personal communications should be cited only in the text, not as a formal reference.

Authors should get permission from the source to cite personal communications. This should be included in writing in an appendix of the dissertation.

Harvard Method

References in the text

Each reference cited in the text must be listed in the References and vice versa: please check these carefully.

Literature citations in text are as follows.

1. One author – (Jones, 1995) or (Jones, 1995; Smith, 1996).
2. Two authors – (Jones and Kane, 1994) or (Jones and Kane, 1994; Smith, 1996).
3. More than two authors – (Jones *et al.*, 1995) or (Jones *et al.*, 1995a; Jones *et al.*, 1995b; Smith *et al.*, 1994; Smith *et al.*, 1995).
4. Avoid any additional text within the brackets; this format is necessary for on-line literature searches.
5. Manuscripts *accepted* for publication but not yet published – list in References as (in press) – this is added manually to reference list.
6. Citation of unpublished work:
 - (a) Your own unpublished observations and results submitted for publication should be cited in text only and not in the reference list. Use the format (S. P. Jones, unpublished).
 - (b) Authors should get permission from the source to cite personal communications. This should be included in writing in an appendix of the dissertation.

Quoting from references in the text

Use single quotation marks and indicate the page number. Quotations of more than one sentence should be indented as a separate paragraph.

Examples:

Rajaratnam (2001, p. 1005) concludes that, 'The cost to the nation's health of working out of phase with our biological clocks is probably incalculable at present'.

A recent recommendation from the National Institute for Clinical Excellence (2010) advised:

'that a healthy diet and being physically active will benefit both the woman and her unborn child during pregnancy and will also help her to achieve a healthy weight after giving birth. Advise her to seek information and advice on diet and activity from a reputable source.'

If using referencing software (Mendeley) page numbers are added manually.

Reference list

- (1) References are listed in alphabetical order according to surname and initials of first author. If more than one reference exists for the same first author, arrange in date order. Use a and b for papers published in the same year.
- (2) Initials should follow all surnames in the list of authors; insert a *full stop* and

space after each initial and parentheses round the date.

(3) Journal titles will not be abbreviated unless they are entered into Mendeley this way.

(4) Use the following style:

Matlin, K. S. and Caplan, M. J. (1992) 'Epithelial cell structure and polarity', in Seldin, D. W. and Giebisch, G. H. (eds) *The Kidney : physiology and pathophysiology*. New York: Raven Press, pp. 447–473.

Rochlin, M. W. *et al.* (1995) 'Localization of myosin II A and B isoforms in cultured neurons.', *Journal of cell science*, 108, pp. 3661–70.

(5) For web-based resources use the following information: Authorship or Source, (Year in brackets) *Title of web document or web page in italics*. Available at: web site address/URL (Accessed date).

British Broadcasting Corporation (2010) *Warning of missed patient safety alerts in NHS*. Available at: <http://www.bbc.co.uk/news/health-10955432> (Accessed: 14 February 2010).

If using reference software (Mendeley) for referencing, please ensure they adhere to the University of St. Andrews library referencing styles for Vancouver and Harvard methods available at:

http://libguides.st-andrews.ac.uk/Referencing_styles/home

It is your responsibility to ensure that your references are correct!

DISABILITY

Students who are registered with the University as having a disability or learning difficulty, which they think may impact on their dissertation, may want to discuss this with their supervisor or the School Disability Co-ordinator (Dr J Cecil). For confidentiality reasons, supervisors are not routinely informed which students are registered.

ENGLISH LANGUAGE CORRECTION

The University has a policy on language correction, which you can access here:

<https://www.st-andrews.ac.uk/students/advice/academic/languagecorrection/>

DISSERTATION SUBMISSION and EXTENSIONS

Specific details on how to produce and submit your dissertation will be provided nearer the time.

The deadline for submission of your pdf electronically to the plagiarism detection software is: 12 noon, Tuesday April 17th, 2018

Firstly you will submit a pdf of your dissertation online, to allow certain plagiarism checks. It is your responsibility to check that all the pages are in the correct order and facing in the right direction prior to electronic submission. Other than errors which may have occurred during the printing process, no corrections or alterations can be made once printed. 2 copies of your dissertation will be printed and bound by the Reprographics Department and the School will pay for this. 1 copy will be available to collect from the Medical Teaching Office for you to check. Once checked, this copy of your printed dissertation should then be submitted along with:

- a. MD4002 evaluation form
- b. Portfolio entry

Your MD4002 submission will not be accepted without these additional completed forms and a thesis declaration bound into your dissertation as described under "Dissertation Layout". Remember to **HANDWRITE** your CANDIDATE NUMBER on the thesis declaration page.

The deadline for final submission of your dissertation and all other completed forms is: 5pm, Friday April 20th, 2018.

There are penalties for late or incomplete submission as per University policy (1 grade point per 24 hours late- this includes weekends and public holidays). Penalties can be applied for late submission of the electronic version, final printed version or both. Printing and/or computer problems are not a valid excuse.

EXTENSIONS

Extensions will only be awarded in extenuating circumstances and should be requested from Dr. Tello. Extensions should be requested well in advance of the deadline.

THE ORAL PRESENTATION

The oral presentation is a compulsory element which is graded as either a pass or fail. It does not contribute towards your Module mark but must be passed in order to pass the module overall. You will be asked to present a short 10 minute Powerpoint talk, (plus 5 minutes for questions) summarising your project work. It is recommended that you consult with your supervisor about the general content of your presentation. As you will all be receiving feedback on your presentation skills during the weekly seminars, supervisors are asked not to rehearse your oral presentation with you. You will be assessed primarily on your presentation and communication skills. The presentations will be timetabled together in sessions for each topic strand.

PORTFOLIO ENTRY

Each student is expected to keep a portfolio entry specifically using the portfolio form available on Galen. This reflective piece should cover aspects of your project such as project planning, results and general progress. The portfolio can be used to record both positive and negative aspects of the project. The portfolio will be reviewed by your supervisor but will not form part of the assessment. A copy can be uploaded to your eportfolio, but a hard copy **must** be submitted with your dissertation.

ETHICS and SAFETY

Students must be fully aware of the safety, ethical and legal issues relating to their studies.

Research/audit project ethical approval requirements

The School of Medicine has an Ethics Committee (Convenor: Dr Morven Shearer) consisting of a mixture of members from within and outside the University. Dates for submission of ethics proposals can be found at

http://medhandbook.st-andrews.ac.uk/wp-content/uploads/2014/08/research-and-pg_ethics_committee.pdf

All research work involving human subjects, human data, human tissues, or other samples will be scrutinised by the School Ethics Committee. For information about research that is likely to require ethical approval, please see the UTREC website: <http://www.st-andrews.ac.uk/utrec>

All research involving animal subjects or using animal tissue will be scrutinized by the University Ethics committees, including the Animal Welfare and Ethics Committee (AWEC) and may require Home Office approvals (licences), please see the Animals in research website <https://www.st-andrews.ac.uk/staff/research/ethics/animalsinresearch/>.

Your supervisor will be aware of whether or not your project requires any ethical or other external approvals. Research involving children will require special oversight by the Children's Panel. In cases that involve subjects from other institutions, ethical approval may be required from the ethical committees of these institutions. This is the case in studies involving NHS patients or staff or taking place on NHS premises. The necessary approvals **MUST** be in place **BEFORE** the start of the project.

It is a University requirement that any Honours dissertation that required ethical approval from the University Teaching and Research Ethics Committee (UTREC), should have the letter or email of ethical approval bound into an appendix before submission. To preserve your anonymity, please blank out your name if it appears on the ethics approval letter.

Safety

To this aim, students will be expected to be aware of the University policies on safety and to attend appropriate safety courses provided by the University. Students must adhere to all legal requirements governing experimental procedures. It is **YOUR RESPONSIBILITY** to read any safety information that is provided.

PLEASE NOTE: you must **NOT** proceed with any work involving radioactivity, carcinogens, toxic chemicals, microbiological hazards, genetic modification, animals, human subjects or human-derived materials **without appropriate risk assessment, training and authorisation.**

PLAGIARISM and COLLUSION

The University of St Andrews expects all students to use good academic practices, and to avoid plagiarism and collusion. Your attention is drawn to the advice at:

<http://www.st-andrews.ac.uk/students/rules/academicpractice/>

For worked examples of what is and what is not plagiarism, see the MD4002 Guided Study- How Can I Avoid Plagiarism?

Plagiarism

Plagiarism is the act of taking another's ideas and representing them as one's own. This covers not just using words, but also, for example, concepts, ideas, data, designs, images, computer programmes and music. Note in particular that it refers to ideas, not just to words, so even if you express someone else's ideas in your own words, the source of the idea must still be acknowledged,

Why do we have this requirement?

Good academic work is expected to draw on other sources, but these must be acknowledged. This enables others to see where the ideas you use have come from, which actually lends added authority to your work. It also allows readers to follow up these sources directly, if they wish. It involves being honest about what is your work and what is the work of others. Think how you would feel if someone used your work without acknowledging it. Furthermore students who plagiarise are gaining an unfair advantage over their honest colleagues.

How to avoid problems

- ensure that you provide in-text references for all the ideas and facts you have taken from elsewhere and reference them.
- where you quote verbatim (word for word), you must show that this is a quotation (usually by using inverted commas ".....") and indicate the source document of the quote after it in the main text. Quotations should only be used where absolutely necessary, for example, a quote made by some one, or organization. It is not acceptable to just take pieces of work directly from others, such as results or conclusions from papers, and put them into a quotation- just because you have acknowledged something you have cut and pasted from elsewhere, does not mean it isn't plagiarism.
- don't paraphrase or slightly modify work from another source and pass it off as your own.
- don't cut and paste from other sources without acknowledging them, and only do this to the extent that a direct quotation is required, as described above. It is better to put things into your own words.
- don't submit other's work as if it was your own e.g. borrowing an essay from another student; taking an essay from the web; paying someone else to write work for you.
- don't submit work you have prepared for one assignment for another.

- remember that listing a source in a list of references at the end of the work is not sufficient acknowledgement; there must also be an in-text reference.

On the other hand, you don't need to reference material which is common knowledge or facts widely available from a range of sources, although it is recommended that you always reference statistical data.

Collusion

Collusion is defined as *the submission by two or more students of the same or similar pieces of work (or parts of pieces of work) which are presented as the individual's own solely authored work*. This could arise from students working together to complete the work, or by one student allowing another to copy his/her work. Copying without the author's permission is not collusion, but taking another student's work without permission is theft and constitutes a disciplinary offence.

Why do we have this requirement?

Apart from formal group work, any work you submit is expected to be your own. It is your degree and it is clearly dishonest to submit work which is not your own.

How to avoid problems

Students can of course help and support each other and this is to be encouraged. It is a question of knowing where to draw the line. The following list provides examples of forms of co-operation with fellow students, which are to be encouraged:

- notifying them of useful references
- directing someone to a source for an idea
- shared discussion and development of ideas
- jointly identifying ideas from a third party
- discussing what the assessment requirements involve
- discussing the techniques used in calculations
- sharing books and articles

To avoid collusion though, you should:

- write the assignment on your own in your own words (except to the extent you cite references)
- not copy verbatim or in substance part or all of the work of other students
- take care to keep your work secure

MARKING PROCEDURE

Dissertation: Your dissertation counts for 100% of the Module grade. It is marked independently by your supervisor, and another member of staff with knowledge of your project area. The marking descriptors used by supervisors will be available for you to view on Galen.

Oral Presentation: This is graded as either a pass or fail. It does not contribute towards your Module mark but must be passed in order to pass the module overall. This is assessed by 2 members of staff from your topic area. Neither assessor will be your supervisor. The marking descriptors used will be available for you to view on Galen later in the Semester.

Appendix 1

MD4002 Learning Contract for the Project Supervisor and Students 2018.

The purpose of this document is to provide clear guidance on what is expected of the student and the supervisor.

Student support and guidance.

The project is a learning process so the supervisor is there to support and advise the student. It is suggested that the supervisor meet / be in contact with the student on a weekly basis. Supervisors will provide guidance in planning and structuring a dissertation and advice on time management. The supervisor will read drafts and comment on the introduction, materials and methods and results for the lab/data handling projects and the introductory chapters for the critical review projects. The discussion should be the students own work and not be read and commented on by the supervisor.

Structure of the dissertation and plan.

The early sessions should focus on agreeing a research question/hypothesis that the student can investigate. Students might need guidance on this to make sure it isn't too broad and that it is achievable in the time scale available. The supervisor will also have some idea of whether literature is likely to be available. The students will be responsible for searching the literature as this is part of their learning process. The supervisors are asked not to give out extensive lists of references to the students.

Supervisors should discuss with their student at an early stage and agree between them how the dissertation should be structured. This will allow the discussion element to be assessed and be separate from the other areas where the supervisor will be giving guidance to the student.

The supervisor agrees to meet / be in contact with their student weekly.

The supervisor agrees to respond to the student in a timely manner.

The supervisor agrees to comment on a draft of the dissertation but will not read the discussion or abstracts.

For research projects only: The supervisor confirms that all necessary Approvals have been secured for this project

For lab projects only: The supervisor has completed a risk assessment form with the student, and relevant lab protocols have been completed

Signature of Supervisor.

Date

The student agrees to meet / be in contact with his/her supervisor weekly.

The student agrees to define a research question/hypothesis in collaboration with their supervisor.

The student agrees that the discussion and abstracts will be written by them independently.

The student agrees to accept that the workload for this module is 3-4 days per week for 12 weeks.

For lab research projects: the student has attended a H&S talk and will comply with all H&S and lab access policies

Name of Student (block capitals)

Signature of Student.

Date

**PLEASE RETURN THIS FORM TO THE DROP BOX BY
CLINICAL SKILLS**