

# BIOM9020

Masters Project (Half Time)

Term 3, 2022



## Course Overview

### Staff Contact Details

#### Convenors

Name	Email	Availability	Location	Phone
Matthew Brodie	<a href="mailto:thesis.biomedeng@unsw.edu.au">thesis.biomedeng@unsw.edu.au</a>	by appointment	Samuels Building 515c	
Tianruo Guo	<a href="mailto:thesis.biomedeng@unsw.edu.au">thesis.biomedeng@unsw.edu.au</a>	by appointment	Samuels Building 515	

### School Contact Information

Student Services can be contacted via [unsw.to/webforms](https://unsw.to/webforms).

## Course Details

### Units of Credit 6

### Summary of the Course

The biomedical engineering Masters Project allows coursework Masters students to experience research training either within the School or with collaborating institutions such as hospitals and CSIRO. Projects are selected by the student in consultation with a supervisor conducting research in an area of interest to the student. If the research topic selected is external to the School/University, the student must arrange for an internal GSBmE co-supervisor/assessor.

BIOM9020 (6 UOC) is the first half of the 12 UOC research project. BIOM9021 (6 UOC) is the second half. Enrolment in these courses allows a student to undertake the equivalent of BIOM9914 Masters Project over two terms. You must discuss the research project with your supervisor and get their approval prior to enrolling in this BIOM9020. Satisfactory performance in BIOM9020 will enable you to then complete BIOM9021. Candidates must contact the School for consent to enrol. BIOM9020 is only available to high achieving students with prior written school approval.

The BIOM9020 project is conducted over 1 term and contributes half of a student's normal full-time load. Project work usually includes a review of the literature, preliminary experiments, identification and learning of new research skills and project planning for subsequent research as part of BIOM9021. Performance in this course is graded.

### Course Aims

This is the course for the postgraduate masters research projects to be undertaken over 2 terms. BIOM9020 plus BIO9021 consists of a total of 12 UOC. It allows coursework students to experience research training either within the School or with collaborating institutions. Candidates should complete the thesis proposal form (see GSBmE website) in consultation with a GSBmE supervisor who will act as their supervisor. A second co-supervisor/assessor must also be nominated on this application. All thesis proposal forms must be approved by the Head of School.

### Course Learning Outcomes

After successfully completing this course, you should be able to:

Learning Outcome	EA Stage 1 Competencies
1. Develop a design or a process or investigate a hypothesis following industry and professional engineering standards.	PE1.4, PE1.5
2. Critically reflect on a specialist body of knowledge related to their thesis topic.	PE1.1, PE1.3
3. Apply scientific and engineering methods to solve a biomedical engineering problem.	PE2.1, PE2.3, PE2.4, PE3.1, PE3.3
4. Analyse data objectively using quantitative and mathematical methods.	PE1.2, PE2.2, PE3.5

Learning Outcome	EA Stage 1 Competencies
5. Demonstrate oral and written communication in professional and lay domains.	PE3.2, PE3.4

## Teaching Strategies

Your supervisor will guide you through the thesis research plan that you develop as part of this course including a review of the literature, research components and scientific report writing.

## Additional Course Information

There is no official class time for this course. You must still ensure your **enrolment and registration** is up to date in your enrolment. Your face-to-face time needs to be organised with your supervisor, as you are expected to meet them at least once per week.

## Assessment

There are two assessment tasks across BIOM9020 and BIOM9021. In BIOM9020, you must complete an interim report. In BIOM9021, you must complete a scientific manuscript. The final grade for BIOM9021/BIOM9020 will be the weighted average of your assessments from BIOM9020 (20%) and BIOM9021 (80%). You will receive the same grade for both courses upon completion of BIOM9021.

Assessment task	Weight	Due Date	Course Learning Outcomes Assessed
1. Interim Report	100%	Monday Week 11 at 11:59 pm	1, 2, 3, 4, 5

### Assessment 1: Interim Report

**Assessment length:** 20-30 pages

**Submission notes:** Please submit via the submission link on Microsoft Teams.

**Due date:** Monday Week 11 at 11:59 pm

The Interim Report assessment is designed to ensure that you have adequately planned your thesis project. It is designed to ensure that you have picked up enough background knowledge to ensure that you are conducting a novel and significant research project. As a guide, the total number of pages in your document should be between 20 and 30 pages and you should cite between 10 and 30 scientific papers or other articles. Your supervisor may have additional requirements, so check with them first.

### Assessment criteria

#### Structure

Please note that this is a general structure, please check with your supervisor as they may have specific requirements based on your project.

- Abstract
- Table of Contents
- Statement of Contribution
- COVID-19 Impact Statement
- Introduction (max 1 page)
- Aims
- Background
- Literature Review
- Hypotheses (if applicable)
- Research Plan
- Methodology
- Timeline
- Project Dependent Preparations

#### Statement of contribution

The statement of contribution should specifically identify the components of research undertaken by the student. To do this, indicate which aspects of the research results or engineering designs included in

the project manuscript were done in collaboration with, or undertaken by, other members of the research group or by external collaborators. Note that work done by others must be limited to steps that would enable the student to undertake their project, not the project themselves. Examples of this may include (but not limited to):

- some surgeries being undertaken by more experienced lab colleagues.
- tissue cultures being maintained or processed by lab assistants.
- survey response or patient databases generated or analysed in whole or partly by others.
- a subsection of the same experimental data obtained by lab colleagues from a previous study.
- procedures being outsourced to an external company.
- Design elements contributed by your supervisor or other students.
- Utilising results or models generated by previous research students.

It must be obvious from this section that the student's contribution is the vast majority of the work described in this report. The supervisor must sign this. Seek advice from your supervisor if you are unsure about this.

### **COVID-19 Impact Statement**

If your research project has been impacted by COVID-19 in any way (e.g. extended lockdown, selfisolation orders etc), then use this space to detail exactly how this has affected. This section should be 0.5-1 page long. This section will discuss any changes in circumstance that have affected your thesis results (e.g. lab shutdown). Supervisors and Assessors are to take this into consideration when marking.

### **Additional details**

There is a detailed description of this assessment task on the Teams channel. If you don't have access to Teams, please let me know. Please note that this is a general structure, please check with your supervisor as they may have specific requirements based on your project.

## Attendance Requirements

There is no official class time for this course. Your face-to-face time needs to be organised with your supervisor, as you are expected to meet them at least once per week. You must still ensure your **enrolment and registration** is up to date.

## Course Schedule

[View class timetable](#)

### Timetable

Date	Type	Content
Study Week: 21 November - 24 November	Assessment	Interim Report due Monday Week 11 at 11:59pm.

## Resources

### Prescribed Resources

Resources will be made available to help students guide them in their journey for Thesis A.

### Extensions

You can apply for [special consideration](#) when illness or other circumstances interfere with your assessment performance.

Other applications for extension of submission of thesis reports (e.g. equipment breakdown, etc.):

1. Discuss the possibility of an extension with your supervisor first.
2. Requests can then be lodged by the student here <http://tinyurl.com/yy2jzpyv>. The supervisor will then receive an email asking them to approve, before it is escalated to the decision panel.
3. Request must be lodged by **Week 6** of term.
4. Panel decision will be made by end of **week 7**.
5. The decision will be made by a panel – consisting of the HoS (or their nominee), Thesis Coordinator, and 1 other person.
6. Students should be alerted to the fact that this is not guaranteed, and thus should not rely on getting an extension.
7. Typically, extensions are granted UP TO 3 weeks. The length of the extension needs to be requested and justified by the supervisor. Panel will decide the length of time granted.
- 8.

### [Industry based projects](#)

We encourage students to seek partnerships with industry, so students can have a co-supervisor from industry. However, if confidentiality is required, a confidential disclosure agreement (CDA) is obligatory. The agreement will protect the intellectual property rights of the industry partner, UNSW and the student. Students or academics are **not authorised** to sign confidential disclosure agreements on behalf of UNSW and are advised to talk to the course coordinator and UNSW legal office to arrange for drafting and signing of the confidential disclosure or research agreement.

### [Late procedure](#)

In all cases, applications for late submission can be applied for BEFORE the due date. This is at the discretion of the thesis coordinator but should only be granted in exceptional circumstances. As per normal, students can also apply through myUNSW for special consideration.

For BIOM9020 and BIOM9021 will be deducted off the *thesis* for every day late. Penalty applies until the marks for the *course* decrease to 50, and further lateness does not result in failure of the *course*, but might be a failure of the thesis (weekends count as days).

### [Additional support for students](#)

- The Current Students Gateway: <https://student.unsw.edu.au/>
- Academic Skills and Support: <https://student.unsw.edu.au/academic-skills>
- *Student Wellbeing, Health and Safety*: <https://student.unsw.edu.au/wellbeing>



- Disability Support Services: <https://student.unsw.edu.au/disability-services>
- UNSW IT Service Centre: <https://www.it.unsw.edu.au/students/index.html>

## Recommended Resources

Not available

## Submission of Assessment Tasks

Laboratory reports and major assignments will require a [Non Plagiarism Declaration Cover Sheet](#).

Assignments should be submitted on time. A daily penalty of 5% of the marks available for that assignment will apply for work received after the due date. Any assignment more than 5 days late will not be accepted. The only exemption will be when prior permission for late submission has been granted by the Course coordinator. Extensions will be granted only on medical or compassionate grounds under extreme circumstances.

## Academic Honesty and Plagiarism

### PLAGIARISM

Beware! An assignment that includes plagiarised material will receive a 0% Fail, and students who plagiarise may fail the course. Students who plagiarise will have their names entered on a plagiarism register and will be liable to disciplinary action, including exclusion from enrolment.

It is expected that all students must at all times submit their own work for assessment. Submitting the work or ideas of someone else without clearly acknowledging the source of borrowed material or ideas is plagiarism.

All assessments which you hand in must have a [Non Plagiarism Declaration Cover Sheet](#). This is for both individual and group work. Attach it to your assignment before submitting it to the Course Coordinator or at the School Office.

Plagiarism is the use of another person's work or ideas as if they were your own. When it is necessary or desirable to use other people's material you should adequately acknowledge whose words or ideas they are and where you found them (giving the complete reference details, including page number(s)). The Learning Centre provides further information on what constitutes Plagiarism at:

<https://student.unsw.edu.au/plagiarism>

## Academic Information

### COURSE EVALUATION AND DEVELOPMENT

Student feedback has helped to shape and develop this course, including feedback obtained from on-line evaluations as part of UNSW's myExperience process. You are highly encouraged to complete such an on-line evaluation toward the end of Term. Feedback and suggestions provided will be important in improving the course for future students.

### DATES TO NOTE

Refer to MyUNSW for Important Dates, available at:  
<https://my.unsw.edu.au/student/resources/KeyDates.html>

### ACADEMIC ADVICE

For information about:

- Notes on assessments and plagiarism,
- Special Considerations,
- School Student Ethics Officer, and
- BESS

refer to the School website available at  
<http://www.engineering.unsw.edu.au/biomedical-engineering/>

### Supplementary Examinations:

Supplementary Examinations for Term 1 2022 will be held on (TBC) should you be required to sit one.

This course outline sets out description of classes at the date the Course Outline is published. The nature of classes may change during the Term after the Course Outline is published. Moodle should be consulted for the up to date class descriptions. If there is any inconsistency in the description of activities between the University timetable and the Course Outline (as updated in Moodle), the description in the Course Outline/Moodle applies.

### Image Credit

<https://internationaljournalofresearch.com/2020/07/04/human-brain/>

### CRICOS

CRICOS Provider Code: 00098G

### Acknowledgement of Country

We acknowledge the Bedegal people who are the traditional custodians of the lands on which UNSW

Kensington campus is located.

## Appendix: Engineers Australia (EA) Professional Engineer Competency Standard

Program Intended Learning Outcomes	
Knowledge and skill base	
PE1.1 Comprehensive, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline	✓
PE1.2 Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline	✓
PE1.3 In-depth understanding of specialist bodies of knowledge within the engineering discipline	✓
PE1.4 Discernment of knowledge development and research directions within the engineering discipline	✓
PE1.5 Knowledge of engineering design practice and contextual factors impacting the engineering discipline	✓
PE1.6 Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline	
Engineering application ability	
PE2.1 Application of established engineering methods to complex engineering problem solving	✓
PE2.2 Fluent application of engineering techniques, tools and resources	✓
PE2.3 Application of systematic engineering synthesis and design processes	✓
PE2.4 Application of systematic approaches to the conduct and management of engineering projects	✓
Professional and personal attributes	
PE3.1 Ethical conduct and professional accountability	✓
PE3.2 Effective oral and written communication in professional and lay domains	✓
PE3.3 Creative, innovative and pro-active demeanour	✓
PE3.4 Professional use and management of information	✓
PE3.5 Orderly management of self, and professional conduct	✓
PE3.6 Effective team membership and team leadership	