Course Outline

MATS4100

Materials Engineering Project

Materials Science and Engineering

Science

T1; 2022

1. Staff

Position	Name	Email	Consultation times and locations	Contact Details
Course and Thesis Convenor	Dr Kevin Laws	k.laws@unsw.edu.au	Room 301, School of Materials Science and Engineering (Building E10), by appointment	Phone: 9385 5234
Professional Communication and Presentation Convenor	Professor C. C. Sorrell	c.sorrell@unsw.edu.au	Room 248, School of Materials Science and Engineering (Building E10), by appointment	Phone: 9385 4421

Supervisors

Name	Email	Office
A/Prof. Sammy Chan	sli.chan@unsw.edu.au	MSE 245
Dr. Dewei Chu	d.chu@unsw.edu.au	MSE 244
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Prof. Nagarajan Valanoor	nagarajan@unsw.edu.au	MSE 247
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A/Prof. Runyu Yang	r.yang@unsw.edu.au	MSE 349
A/Prof. Jianqiang Zhang	j.q.zhang@unsw.edu.au	MSE 348

2. Course information

Units of credit: 18, 6 per term

ENTRY POINT: Term 1

Pre-requisite(s): MATS3001, MATS3002 & MATS3004

Timetabling website: http://timetable.unsw.edu.au/2020/MATS4100.html

Teaching times and locations: Professional Communication and Presentation timetable

Term 1

	Lecture
Day	Tuesday
Location	TBA
Time	13:00-16:00
Weeks	1-10

2.1 Course summary

A self-directed experimental research or design-based project to apply, contextualise, and integrate fundamental scientific/engineering concepts learnt throughout the Materials Science and Engineering undergraduate program. Students will develop advanced disciplinary knowledge and will apply this to problem solving in the chosen topic area. Students will develop and practice high-level skills in critical thinking, project management, safety consideration and risk management, data collection and analysis, problem solving, and technical communication.

Note: this is a 1-year course: 18 UOC in total; 6 UoC per Term over three Terms. The course starts in Term 1.

2.2 Course aims

The aim of the course is to provide students with structured opportunity to undertake a self-directed and substantial experimental research or design-based project to:

1) apply, contextualise, and integrate fundamental scientific/engineering concepts learnt throughout the Materials Science and Engineering BEHons program;
2) develop advanced disciplinary knowledge and to apply this to problem solving in the discipline;
3) develop and practice high-level skills in critical thinking, project management, safety consideration and risk management, data collection and analysis, problem solving, and professional/technical communication; and,
4) gain experience in the use of standard and specialised practical techniques relevant to their chosen area.

2.3 Course learning outcomes (CLO)

At the successful completion of this course you (the student) should be able to:

1. Understand and apply advanced materials concepts and knowledge to analyse and solve problems in the discipline of materials science and engineering.
2. Effectively plan and execute project-based engineering work including the ability to work independently, critically evaluate scientific literature, design and perform experiments, collect and analyse data, and solve problems.
3. Effectively and professionally communicate technical/scientific information in both written and oral forms.
4. Effectively identify, use and manage information resources, computing resources, and physical resources in completing a project-based engineering work.
5. Recognise and demonstrate ethical conduct, safety management, and professional accountability.

2.4 Relationship between course and program learning outcomes and assessments

Course Learning Outcome (CLO)	LO Statement	Program Learning Outcome (PLO)	Related Tasks & Assessment
CLO 1	Understand…	1.1, 1.3, 1.4, 1.5, 1.6, 2.3 & 2.4	1, 3 & 4
CLO 2	Effectively plan…	2.1, 2.3, 2.4, 3.1, 3.3 & 3.5	2 & 4
CLO 3	Effectively and professionally communicate …	3.1, 3.2, 3.3, 3.4 & 3.5	1, 2, 3 & 4
CLO 4	Effectively identify	1.3, 1.4, 1.5, 2.2, 2.4 & 3.4	1, 3 & 4
CLO 5	Recognise	3.1	2 & 4

3. Strategies and approaches to learning

3.1 Learning and teaching activities

(based on UNSW Learning Guidelines)

- *Students are engaged actively in the learning process*

  It is expected that, in addition to attending classes, students will read, write, discuss, and engage in analysing the course content.

- *Effective learning is supported by a climate of inquiry, where students feel appropriately challenged*

Students are expected to be challenged by the course content and to challenge their own preconceptions, knowledge, and understanding by questioning information, concepts, and approaches during class and study.

- *Learning is more effective when students' prior experience and knowledge are recognised and built on*

  Coursework, tutorials, assignments, laboratories, examinations, and other forms of learning and assessment are intended to provide students with the opportunity to cross-reference these activities in a meaningful way with their own experience and knowledge.

- *Students become more engaged in the learning process if they can see the relevance of their studies to professional and disciplinary contexts*

  The course content is designed to incorporate both theoretical and practical concepts, where the latter is intended to be applicable to real-world situations and contexts.

3.2 Expectations of students

- Students must attend at least 80% of all Professional Communication and Presentation classes held in Term 1, with the expectation that students only miss classes due to illness or unforeseen circumstances
- During class, students are expected to engage actively in class discussions
- Students should complete all assessment and milestone tasks and submit them on time.
- Students are expected to participate in online discussions through the Moodle page
- Each student is expected to maintain a regular dialogue with their supervisor (for example by weekly meetings) about their project

4. Course schedule and structure

4.1 Professional Communication and Presentation Component

This course consists of 30 class contact/lecture hours in Weeks 1-10 of Term 1 for the Professional Communication and Presentation component. This part of the course is worth 20% of the final course mark. Students will make oral presentations of their literature surveys at the end of Term 1. No formal lectures will be given in Terms 2 or 3. Students will complete an oral presentation of their completed project at the end of Term 3.

	Term 1 Professional Communication and Presentation
Week	**Topics**
1	Preliminary Session
2	Cover Letters, C.V.s, and Résumés
3	Interview Skills
4	Nonverbal Communication
5	Tests and Questionnaires
6	Thesis Preparation
7	Speaking Techniques and Problems
8	Visual Aids
9	Demonstration Presentations
10	Practice Session
	Post Term 1 Presentation
	Post Term 3 Presentation

4.2 Research Project/Thesis Component

Students are required to complete a Project Management Plan, Safety Training and a Literature Survey in Term 1. Students are also encouraged to have completed essential laboratory inductions, WHS and Risk Assessments related to their project within Term 1. There is no formal attendance for laboratory and thesis work and all work is self-directed. Students are encouraged to start laboratory work as soon as possible (T1). Students are expected to commit to at least 120 hours of non-class contact hours to complete the research project and associated assessment tasks. Whilst students are not permitted to start laboratory work before Term 1, students are permitted to work on their research projects during Term breaks. Students are encouraged to consult regularly with their supervisors in order to ensure satisfactory progression. Students are required to submit a Thesis Progress Report signed by student and supervisor outlining progress, delays against the project plan and anticipated tasks remaining in Week 2 of Term 3. All experimental work, analysis and thesis write-up is to be completed and submitted by Week 10 of Term 3.

	Term 1	
Week	**Topics/Tasks**	**Activity**
1-10	Professional Communication & Presentation Course (Weeks 1-10) Student Safety Training Course (Week 1) Project Management Plan (Due Week 4) Complete Literature Survey (Due Week 10) Complete Project-Specific Laboratory Inductions & Training Complete Project-Specific WHS Documentation/Risk Assessments Begin Experimental Research	Week 1 Safety Training Week 4 Project Management Plan Due Week 10 Literature Survey Due
Break	**Presentation 1**	
	Term 2	
Week	**Topics/Tasks**	**Activity**
1-10	Complete any remaining Laboratory Inductions & Training Complete any remaining WHS Documentation/Risk Assessments Experimental Research & Analysis Begin ongoing Thesis Write-Up	
Break		
	Term 3	
Week	**Topics/Tasks**	**Activity**
1-10	Experimental Research & Analysis Ongoing Thesis Write-Up Progress Report (Week 2) Thesis Submission (Week 10)	Progress Report Due (Week 2) Thesis Submission (Week 10)
Break	**Presentation 2**	

5. Assessment

5.1 Assessment Tasks & Milestones

The Professional Communication and Presentation component carries 20% of the course weighting. Assessment for this section is based on the following:

Presentation 1	(12 minutes)	8%
Presentation 2	(17 minutes)	12%

The research project/thesis component of the course carries a weight of 80% of total marks. Assessment is on the basis of the written work submitted. Please refer to the section below for details of the assessment and to the following section for expected content of the Honours Thesis. Unless otherwise stated, all work is to be submitted online to the MATS4100 Moodle site. Late work will attract penalties. The detailed assessment tasks related to the thesis are explained below. Students are encouraged to note the explanations below.

All Honours theses must be the student's own work. All references should be properly cited, and any plagiarism is forbidden in all parts of the thesis. (see Academic Honesty and Plagiarism Rules set out in this document). All theses will be run through an academic plagiarism-checking program. Any such academic misconduct could result in serious consequences in the assessment of the thesis.

Assessment task	Description	Weight	Due date
Seminar Presentation 1:	At the end of T1, students are required to give a seminar presentation (12 minutes) based on their written literature survey and project proposal, and answer questions on their presentation. Each seminar is graded by the student's supervisor, the course coordinator, and one independent academic from the School.	8%	TBA
Project management plan:	Students are required to submit a project management plan for the Honours Project covering the following elements: executive summary describing the project to be undertaken and its scope; goals of the project; detailed project planning; resource allocation; budgeting and cost estimation; scheduling; monitoring and project control; project auditing; and project termination.	5%	Week 4, T1
Literature Survey Submission	Students are required to submit a polished copy of their completed Literature Survey and coversheet signed by their supervisor that it is complete and of a satisfactory standard. Students are to receive formative feed-back from their supervisor prior to submission and submit with the accompanying feed-back form.	-	Week 10, T1
Thesis Progress Report:	Students are required to submit a Thesis Progress Report signed by student and supervisor outlining progress, delays against the project plan and anticipated tasks remaining.	-	Week 2, T3
Seminar Presentation 2:	Students are required to give a formal seminar presentation (17 minutes) that presents the outcomes of the Honours project and their analysis and discussion, and major	12%	TBA

	conclusions. The seminar presentation is graded by the student's supervisor, the course coordinator, and one independent academic from the School.		
Honours Thesis Dissertation:	The Honours thesis dissertation is the major piece of written work submitted at the end of the 18UOC research project. An Honours thesis dissertation in Materials Science and Engineering is typically 80 pages which is marked by the supervisor and two nominated independent academic assessors using a standardised rubric for all theses.	75%	Week 10, T3

To complete the laboratory component of the thesis the following must be complete prior to entering labs:

1. Laboratory Safety Training Course

Due: Week 3, Term 1 – time to be advised

Location: TBA, MSE

Details: Students undertaking any experimental work are required first to attend the Laboratory Safety Training Course. Students who do not attend this course will be forbidden to start experimental work until appropriate safety training is completed – this may result in significant delay in commencing experimental work.

2. Risk Assessment of Experimental Work

Due: No set date but must be completed and approved PRIOR TO ANY experimental work is commenced.

Submission: Through the UNSW SafeSys portal to your supervisor or as per instructions of the Laboratory Managers requirements.

Details: A detailed risk assessment of all experimental work is required BEFORE ANY EXPERIMENTAL WORK IS DONE. Students are strongly urged to consult with their supervisor when completing the Risk Assessment. A new Risk Assessment is required for any later experimental work not covered in the original Risk Assessment. The Risk Assessment form is available in electronic form from the school website.

FAILURE TO COMPLETE A RISK ASSESSMENT PRIOR TO UNDERTAKING EXPERIMENTAL WORK WILL RESULT IN SUSPENSION FROM THE UNIVERSITY'S LABORATORIES AND AFFECT SUCCESSFUL COMPLETION OF THE COURSE.

In addition to your supervisor, the School's Safety Officer (Mr Anthony Zhang), and the Laboratory Safety Training Course, information on relevant UNSW Occupational Health and Safety policies and expectations can be obtained from:

www.riskman.unsw.edu.au/ohs/ohs.shtml

Further information

UNSW grading system: https://student.unsw.edu.au/grades

UNSW assessment policy: https://student.unsw.edu.au/assessment

5.2 Assessment criteria and standards

Seminar Presentation 1 & 2

Each seminar is graded by the student's supervisor, the course coordinator, and one independent academic from the School using a standardised rubric to assess the following elements:

- Technical Content: technical standard, amount and adequacy of material, depth of coverage, interest of the material presented, ability to answer questions.
- Quality of Presentation: Structure – organisation of material, balance of the material presented, logic and orderliness of material, focus on important points, clarity of presentation. Verbal Delivery – pace, pronunciation and enunciation, voice modulation, avoidance of extraneous vocal mannerisms. Physical Delivery – control of nervousness, eye contact with audience, effective use of body movement, avoidance of extraneous physical mannerisms.
- Visual Impression: Visual Aids – pace of presentation, interest and effectiveness of visual aids, pertinence of visual aids to the presentation, legibility and quality of visual aids. Appearance – posture and deportment of speaker
- Overall Impression

Assessment for Presentation Skills for Materials Technology Component

This section carries 20% weight of the final mark. C.C. Sorrell 2019

MATS4100 MATERIALS SEMINAR

ASSESSMENT FORM

Name of Speaker _____

Subject of Thesis _____

Date _____

Are you the Lecturer _____ or the Supervisor _____?

Choose ONE Option	Excellent	Good	Fair	Poor	No Opinion
TECHNICAL CONTENT (20% of Total)					
1. The technical standard of the material was:	☐	☐	☐	☐	☐
2. The amount and adequacy of the material were:	☐	☐	☐	☐	☐
3. The depth to which the material was covered was:	☐	☐	☐	☐	☐
4. The interest of the material presented was:	☐	☐	☐	☐	☐
5. The ability to answer questions was:	☐	☐	☐	☐	☐

Mark (100%) _____ Mark (x 0.2) _____

QUALITY OF PRESENTATION (50% of Total)

Structural

6. The organisation of the material was:	☐	☐	☐	☐	☐
7. The balance of the material of the presentation was:	☐	☐	☐	☐	☐
8. The logic and orderliness of the material were:	☐	☐	☐	☐	☐
9. The focussing on the important point was:	☐	☐	☐	☐	☐
10. The clarity of the presentation was:	☐	☐	☐	☐	☐

Choose ONE Option	Excellent	Good	Fair	Poor	No Opinion
Verbal					

11. The pacing of the spoken word was: ☐ ☐ ☐ ☐ ☐

12. The pronunciation and enunciation were: ☐ ☐ ☐ ☐ ☐

13. The smoothness of the verbal delivery was: ☐ ☐ ☐ ☐ ☐

14. The volume, pitch and voice modulation were: ☐ ☐ ☐ ☐ ☐

15. The avoidance of extraneous vocal mannerisms was: ☐ ☐ ☐ ☐ ☐

Physical

16. The control of nervousness was: ☐ ☐ ☐ ☐ ☐

17. The degree to which the speaker faced the audience was: ☐ ☐ ☐ ☐ ☐

18. The eye contact of the speaker with the audience was: ☐ ☐ ☐ ☐ ☐

19. The use of effective body movements was: ☐ ☐ ☐ ☐ ☐

20. The avoidance of extraneous physical mannerisms was: ☐ ☐ ☐ ☐ ☐

Mark (100%) _____ Mark (x 0.5) _____

VISUAL IMPRESSION (10% of Total)

Visual Aids

21. The pacing of the presentation of the visual aids was: ☐ ☐ ☐ ☐ ☐

22. The interest and effectiveness of the visual aids were: ☐ ☐ ☐ ☐ ☐

23. The pertinence of the visual aids to the presentation was: ☐ ☐ ☐ ☐ ☐

24. The legibility and neatness of the visual aids were: ☐ ☐ ☐ ☐ ☐

Appearance

25. The overall physical appearance of the speaker was: ☐ ☐ ☐ ☐ ☐

26. The posture and deportment of the speaker was: ☐ ☐ ☐ ☐ ☐

Mark (100%) _____ Mark (x 0.1) _____

OVERALL IMPRESSION (20% of Total)

27. The overall impression of the presentation was: ☐ ☐ ☐ ☐ ☐

Mark (100%) _____ Mark (x 0.2) _____

TOTAL SCORE Mark (Sum) _____

C.C. Sorrell 2019

MATS4100

Presentation Skills for Materials Technology

SUPERVISOR'S ASSESSMENT FORM

Name of Speaker _____

Subject of Thesis _____

Date _____

Name of Assessor _____

TECHNICAL CONTENT (20% of Total)

Choose ONE Option	Excellent	Good	Fair	Poor	No Opinion
In terms of the suitability for conference presentation:					
1. The quality of the information presented was:	☐	☐	☐	☐	☐
2. The depth to which the material was covered was:	☐	☐	☐	☐	☐
3. The effectiveness in transmitting the essential information was:	☐	☐	☐	☐	☐
4. The clarity and conciseness of the data presented was:	☐	☐	☐	☐	☐
5. The overall technical standard was:	☐	☐	☐	☐	☐

Mark (100%) _____ Mark (x 0.2) _____

(Please return the completed form to the course lecturer following the presentation)

Project Management Plan

This section carries 5% weight of the final mark.

Due: 5:00 pm, Friday, Week 4, Term 1

Submission: Upload to MATS4100 Moodle course site.

Coversheet: Coversheet (downloadable from the Moodle course site) must accompany the submitted plan, which must be signed by the academic supervisor to the effect that the plan is reasonable in terms of academic scope as well as the available time and resources.

Late Penalty: Work submitted after the deadline will attract a penalty of 10 mark of the Project Management Plan per day late (or part thereof) late. Submission of the Project Management Plan is a prerequisite to commencement of Term 2 of the project, failure to complete, student will be required to show cause for continuation to Term 2.

Marking: Marked by one marker nominated by the School.

Details: The aim of this assignment is to develop a project management plan for the Honours Project. The plan should include the following:

1. General Outline including:
    a. Description of the project to be undertaken
    b. General scope of the project
    c. Critical personnel
2. Goals of the Project
3. Project Selection
4. Project Planning
5. Budgeting and Cost Estimation
6. Scheduling
7. Resource Allocation (including inventory & status of all equipment)
8. Monitoring and Project Control
9. Project Auditing
10. Project Termination

Length: Maximum 8 A4 pages

Assessment:	Clarity, Presentation, and Structure	/10
	Establishment of Goals & Approach	/10
	Appropriate Budget Allocation	/10
	Appropriate Time Allocation	/10
	Completeness of Plan	/10
	Total	**/50**

Literature Survey

This section is a prerequisite for the continuation to Term 2 of the project.

Due: 5:00 pm, Friday, Week 10, Term 1

Submission: Upload a high-resolution pdf file of the Literature Survey and fronted by a signed coversheet to the MATS4100 Moodle course site.

Formative Assessment Sheet: A Literature Survey Formative Assessment Sheet must accompany the submitted Literature Survey, which must be filled and signed by the academic supervisor to the effect that the Survey is complete, of high standard and finished.

Late Penalty: Work submitted after the deadline will attract a penalty of 2 marks deducted from the total Honours Thesis Dissertation mark per day (or part thereof) late. Submission of the Literature Survey is a prerequisite to commencement of Term 1 of the project.

Formative Assessment: The Literature Survey is a Formative Assessment for the purpose of providing feedback about students' progress to the student, no formal mark is given to the literature survey at this time.

A satisfactory assessment must be achieved by the student, confirmed by the project supervisor on the accompanying Literature Survey Formative Assessment Sheet using a standardised rubric to assess the following elements: Establishment of the Project Outline, Formatting, Structure & Referencing and Technical Content. Failure to complete, student will be required to show cause for continuation to Term 1.

Rationale: The aim of this task is to thoroughly familiarise the student with their intended research area, project-specific experimental methodologies/techniques and related content prior to starting laboratory work. This aids in the early development of understanding your thesis topic, assisting with analysis and discussion sections later in the thesis. It also ensures students have a satisfactory document format style, are correctly citing the work of others and are providing quality and relevant Figures, Tables and Information prior to completing the thesis write-up. In addition, a large body of work has been completed early in the thesis process.

It is understood that over the duration of the thesis, research and results can alter the direction of the thesis against the original plan, and the literature review in your final thesis submission may be an altered version of this initial submission.

Layout: This should be 5000-5500 words and a maximum of 20 pages in length. It should be comprehensive but should be strictly confined to issues, which are highly relevant to the thesis topic. A sufficient amount of information should be provided so that an adequate general background to the thesis topic is given. The Literature Survey should be up-to-date, it should be accurate, and it should be properly referenced (Refer to Academic Honesty and Plagiarism Rules set out in this document). Most importantly of all, it should be analytical in nature. That is to say the findings, interpretations and opinions of other writers should be compared; conflicts and/or agreements should be identified; gaps in knowledge or understanding should be pointed out. Do not pad the Literature Survey with material that is irrelevant or of peripheral interest to the thesis topic.

The Literature Survey is written for professionals. It must not be too basic. Instead it should be written on the premise that the reader should be familiar with the broad technical area of the thesis discipline but that he or she may be unfamiliar with the specific thesis topic and relevant terminology.

The number of references used in the Literature Survey depends on the thesis topic. Certain thesis topics may not have been extensively studied in the past and, as a consequence, the Literature Survey will be relatively brief (yet still comprehensive).

A Literature Survey must lead to conclusions if it is to be of any use. These conclusions in turn permit the author to formulate and define the specific project aims.

Literature Survey Formative Assessment Sheet

Name of Student:

Subject of Thesis:

Course:

	Poor	Needs Work	Fair	Good	Excellent
PROJECT OUTLINE					
1. The establishment of the project aims was:			✓		
2. The establishment of the project field and scope was:					
FORMATTING, STRUCTURE & REFERENCING					
3. The extent of referencing in reproduced Figures, Tables was:					
4. The quality of Images, Figures, Tables and Captions was:					
5. The use of appropriate referencing to text and statements was:					
6. My overall impression of the formatted document was:					
TECHNICAL CONTENT					
7. The depth and extent of the Literature Survey was:					
8. The student's assessment of the literature was:					
9. The relevance of the surveyed literature was:					
10. The students' overall comprehension of the thesis topic is:					

Additional Comments:

The overall quality of this Literature Survey was: SATISFACTORY ☐

Name of Supervisor:

Signature: _____

Thesis Progress Report – MATS4100 (18 UoC)

Student: _____

Thesis Title: _____

(1) Achievements to Date (Bulleted short descriptions preferred)

(2) Delays to Project Plan: Outline Reasons

(3) Tasks remaining as per plan

(4) Changes to plan: Outline Justification

Student Name_____ Student Signature_____ Agree/Disagree

Supervisor Name_____ Supervisor Signature_____ Agree/Disagree

The Thesis Progress Report above is a mandatory part of the Honours thesis. Please ensure that all sections are duly filed and both signatures at the bottom of the page are acquired. **This form is to be uploaded to the MATS4100 Moodle site 5pm Friday, Week 2 /Term 3.**

Honours Thesis Dissertation

This section carries 75% weight of the final mark.

Due: 5:00 pm, Friday, Week 10, Term 3

Submission: Upload a high-resolution pdf file to the MATS4100 Moodle course site.

Late Penalty: Work submitted after the deadline will attract a penalty of 10% deducted from the Honours Thesis Dissertation mark per day (or part thereof) late.

Marking: Examined by the thesis supervisor and one confidential examiner nominated by the School.

The Thesis is marked using a standardised rubric with marks being awarded for the following elements:

1. Quality of Abstract; English expression and spelling; Thesis formatting & general impression.
2. Introduction and Literature Survey Chapters: level of presentation, extent and relevance; critical assessment of the literature; referencing; establishment of project aims.
3. Experimental Procedure: completeness and clarity of experimental outline.
4. Results/Work Effort: amount of experimental work done, completeness of study, quality, logic and organisation of experiments, use of graphs, figures and tables to summarise results.
5. Discussion and Conclusions: level of understanding, interpretation of results and sophistication of analysis, handling and identification of errors, comparison with other data, achievements with respect to project aims.

The final thesis in MATS4100 should be a maximum of ~65 pages in total length. Guidelines detailing expected formatting of the thesis are given as part of Professional Communication and Presentation component of the course.

1. Abstract

This should be one page in length. It should briefly but succinctly summarise the following points: problem investigated; procedures followed; principal results obtained; and major conclusions reached.

2. Introduction

This should be two pages in length. It should provide a general background to the thesis topic, indicating the nature of the field, the state of knowledge of the subject, and why the topic is of interest. This should lead to a brief and general discussion of the work undertaken and described in the thesis. The Introduction should end with a general statement of the project aims.

3. Literature Survey

This should be 5000-5500 words and a maximum of 20 pages in length. It should be comprehensive but should be strictly confined to issues, which are highly relevant to the thesis topic. A sufficient amount of information should be provided so that an adequate general background to the thesis topic is given. The Literature Survey should be up-to-date, it should be accurate, and it should be properly referenced (Refer to Academic Honesty and Plagiarism Rules set out in this document). Most importantly of all, it should be analytical in nature. That is to say the findings, interpretations and opinions of other writers should be compared; conflicts and/or

agreements should be identified; gaps in knowledge or understanding should be pointed out. Do not pad the Literature Survey with material that is irrelevant or of peripheral interest to the thesis topic.

The Literature Survey is written for professionals. It must not be too basic. Instead it should be written on the premise that the reader should be familiar with the broad technical area of the thesis discipline but that he or she may be unfamiliar with the specific thesis topic and relevant terminology.

The number of references used in the Literature Survey depends on the thesis topic. Certain thesis topics may not have been extensively studied in the past and, as a consequence, the Literature Survey will be relatively brief (yet still comprehensive).

A Literature Survey must lead to conclusions if it is to be of any use. These conclusions in turn permit the author to formulate and define the specific project aims.

4. Experimental Procedure

This chapter should be a maximum of 4 pages in length. This section should begin by presenting an experimental plan that will answer the questions raised in the Literature Survey and, hence, achieve the project aims. An Experimental Plan is a very important part of the thesis, although it is usually rather brief.

A brief but concise description of the experimental procedure should then be presented. The Experimental Procedure should be descriptive to the point that another trained scientist or engineer would be able to repeat the experiments or measurements. It must clearly state the analytical methods used (a theoretical background of the analytical methods is not necessary). It must also specify the variables, which are being explored and state over what range of values.

Experiments and/or analyses conducted off-campus during summer employment (e.g., during industrial training) must be identified as such.

5. Results

This chapter should be 2000-2800 words, 9-12 pages in length. This chapter should be brief but complete. Logical organisation is important so as to achieve brevity. Appropriate use must be made of graphs and/or tables in order to achieve condensation. The use of correct units, scales, magnifications and the specification of errors are, of course, essential.

Results obtained during summer employment (e.g., during industrial training) must be identified as such.

6. Discussion

This chapter should be 2000-2800 words, 9-12 pages in length. This chapter is of crucial importance and much of the intellectual content of the thesis will be found within it. The results will have to be interpreted, that is, reasons for the observed behaviour, patterns, correlations, etc. must be advanced and evaluated. Such interpretation will commonly require the use of the information or data presented in the literature survey. If possible, predictions should be made on the basis of any models advanced.

The Discussion must place the results within the context of information summarised in the Literature Survey. Most significantly of all, the findings must be used in answering the questions posed by the project, that is, in achieving the project aims.

To meet the various requirements, a good discussion will lead in a logical way to the conclusions with which the thesis will end.

7. Summary and Conclusions

This Chapter should be no more than four pages in length. It should summarise both the results and their ramifications. This section represents a brief overview of the findings and their significance.

8. References

This section lists full citations of literature references used in the thesis.

Note: Students are strongly advised to submit any drafts of work for assessment to their supervisor at least one week before this deadline in order to give the supervisor time to read, correct, and return the work.

Honours Thesis Dissertation Marking Criteria

This section carries 75% weight of the final mark.

Student: _____

Thesis Title: _____

Examiner: _____ **Signature:** _____

				Adj. Mark
Abstract, Thesis Format and Presentation				
1.	Quality of Abstract	/20		
2.	English expression and spelling	/10		
3.	Thesis formatting & general impression	/10		
	Mark:	/40	_____	**/10**
Introduction and Literature Survey Chapters				
1.	Level of presentation, extent and relevance	/10		
2.	Critical assessment of the literature	/10		
3.	Referencing	/10		
4.	Establishment of project aims	/10		
	Mark:	/40	_____	**/15**
Experimental Procedure Chapter				
1.	Completeness and clarity of experimental outline	/10	_____	**/5**
Results/Work Effort				
1.	Amount of experimental work done	/10		
2.	Completeness of study	/10		
3.	Quality, logic and organisation of experiments	/10		
4.	Use of graphs, figures and tables to summarise results	/10		
	Mark:	/40	_____	**/20**
Discussion and Conclusions				
1.	Level of understanding	/10		
2.	Interpretation of results and sophistication of analysis	/10		
3.	Handling and identification of errors	/10		
4.	Comparison with other data	/10		
5.	Achievements with respect to project aims	/10		
	Mark:	/50	_____	**/25**

TOTAL MARK: _____ **/75**

The completed thesis is marked by the supervisor and a nominated examiner in the final Term of your project. The name of the examiner is not given to the student. The average of these marks is reported to the student via Moodle. All feedback and discussion concerning the marked work is between the student and the supervisor.

5.3 Submission of assessment tasks

6. UNSW operates under a Fit to Sit/ Submit rule for all assessments. If a student wishes to submit an application for special consideration for an exam or assessment, the application must be submitted prior to the start of the exam or before an assessment is submitted. If a student sits the exam/ submits an assignment, they are declaring themselves well enough to do so. Information on this process can be found here: https://student.unsw.edu.au/special-consideration. Medical certificates or other appropriate documents must be included. Students should also advise the lecturer of the situation.

- Unless otherwise specified in the task criteria, all assignments must be uploaded via Moodle prior to the due date for submission.
- Assessments submitted after the due date for submission will receive a 10% of maximum grade penalty for every day late, or part thereof.
- Students who have a disability that requires some adjustment in their teaching or learning environment are encouraged to discuss their study needs with the course coordinator prior to, or at the commencement of, their course, or with the Equity Officer (Disability) in the Equity and Diversity Unit: https://student.unsw.edu.au/disability. Early notification is essential to enable any necessary adjustments to be made.

5.4. Feedback on assessment

Seminar Presentation 1 & 2: Verbal feedback immediately following the seminar presentation is provided by the course coordinator and the supervisor; formal written feedback as per the above marking criteria is provided to the student within 1 week of the presentation.

Project management plan: The assignment is marked by the course coordinator using a standardised rubric. Written feedback is given by the course coordinator and verbal feedback is given by the student's supervisor.

Honours Thesis Dissertation: The Introduction and Literature Survey chapters are submitted in Term 1 and marked by the supervisor to provide formative assessment and feedback to the student. The completed thesis is graded by the student's supervisor and another independent academic from the School following submission at the end of Term 3. The name of the independent grading academic is not given to the student. The average of the above marks is reported to the student in writing (via Moodle) following the release of results at the end of Term 3. All feedback and discussion concerning the marked work is provided by the student's supervisor.

6. Academic integrity, referencing and plagiarism

Referencing is a way of acknowledging the sources of information that you use to research your assignments. You need to provide a reference whenever you draw on someone else's words, ideas or research. Not referencing other people's work can constitute plagiarism.

Referencing style: Consult with your project supervisor for their preferred referencing style.

Further information about referencing styles can be located at https://student.unsw.edu.au/referencing

Academic integrity is fundamental to success at university. Academic integrity can be defined as a commitment to six fundamental values in academic pursuits**:** honesty, trust, fairness, respect, responsibility and courage.[1] At UNSW, this means that your work must be your own, and others'

[1] International Center for Academic Integrity, 'The Fundamental Values of Academic Integrity', T. Fishman (ed), Clemson University, 2013.

ideas should be appropriately acknowledged. If you don't follow these rules, plagiarism may be detected in your work.

Further information about academic integrity and **plagiarism** can be located at:

- The *Current Students* site https://student.unsw.edu.au/plagiarism**,** and
- The *ELISE* training site http://subjectguides.library.unsw.edu.au/elise/presenting

The *Conduct and Integrity Unit* provides further resources to assist you to understand your conduct obligations as a student: https://student.unsw.edu.au/conduct.

7. Readings and resources

Prescribed:

Students are required to purchase from the UNSW bookstore a workbook that will be used as an extensive source of reference material for the professional communication and presentation component by Professor Sorrell.

Recommended:

Your supervisor may recommend reading and resources that relate to your project.

8. Administrative matters

School Office: Room 137, Building E10 School of Materials Science and Engineering
School Website: http://www.materials.unsw.edu.au/
Faculty Office: Robert Webster Building, Room 128
Faculty Website: http://www.science.unsw.edu.au/

9. 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
- Assessment Implementation Procedure: https://www.gs.unsw.edu.au/policy/documents/assessmentimplementationprocedure.pdf