UNSW Course Outline

COMP9992 Research Project B - 2024

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General Course Information

Course Code : COMP9992
Year : 2024
Term : Term 3
Teaching Period : T3
Is a multi-term course? : No
Faculty : Faculty of Engineering
Academic Unit : School of Computer Science and Engineering
Delivery Mode : Multimodal
Delivery Format : Standard
Delivery Location : Kensington
Campus : Sydney
Study Level : Postgraduate
Units of Credit : 6

Useful Links

Handbook Class Timetable

Course Details & Outcomes

Course Description

Students who have satisfactorily completed COMP9991 in their penultimate term of study in MIT (8543) have to, in their last term of study, complete either COMP9992 or COMP9993. Which of COMP9992 or COMP9993 is appropriate has been determined following the COMP9991 seminar.

COMP9992 has been chosen for projects such that completing them successfully requires a workload that is roughly equivalent to that of a standard course, though it can be expected that a research project, being more open ended and tackled by very motivated students, turns out to be more time consuming.

Meeting the expectations of COMP9991 + COMP9992, or even better, exceeding them with a piece of work that can result in a conference or journal publication, can make applications for a research degree stronger. COMP9991 has also been appealing to students who wanted to modestly improve on the state of the art in a particular discipline and be exposed to the various aspects of conducting research, working on a specific problem; COMP9992 completes that journey.

Course Aims

COMP9991 + COMP9992 is for high achievers who can and want to maximise the exposure to research that a Masters by coursework has to expose students to. It exceeds the aims of COMP9900 in doing more than "putting everything together": it aims at letting students tackle a genuine piece of research and improve on the state of the art, be it by making an algorithm more effective, or combining algorithms in new ways, or applying and adjusting particular techniques to new problems. Though projects can be purely theoretical, most projects will be applied at least to some extent and they will have an experimental component, thanks to which it is often possible to compare the proposed approach with existing ones.

By the end of the term, students must give a seminar, inviting at least supervisor and assessor, with a presentation that is roughly 45 minutes long, and submit a final report, that goes over all aspects of the work completed in both COMP9991 and COMP9992. Both seminar and report should demonstrate that the plan exposed in the COMP9991 seminar has been successfully completed. The main aim is to provide evidence that the student has acquired the skills that are necessary to successfully conduct a piece of research, in all aspects of the work, from producing a literature review to comparing one's results with those of other researchers, having brought some kind of innovation to the field.

Course Learning Outcomes

Course Learning Outcomes
CLO1 : Apply existing methods to a problem for an in-depth understanding of how they work and of their limitations.
CLO2 : Analyse and compare various approaches and experimental results, to identify their key strengths and weaknesses.
CLO3 : Evaluate the proposed new concept, techniques or designs, ideally demonstrating that they improve on the state of the art.
CLO4 : Create new concepts, techniques or designs, thereby demonstrating a capacity for innovation.
CLO5 : Exchange ideas with a supervisor to boost creativity and develop critical thinking
CLO6 : Give an oral presentation that is as pedagogical, clear, technically precise and insightful as possible.
CLO7 : Write a report that articulates all aspects of a research project, including comparison with existing work, that is of the highest standards technically.

Course Learning Outcomes	Assessment Item
CLO1 : Apply existing methods to a problem for an in-depth understanding of how they work and of their limitations.	• Final Report • Second Term Seminar
CLO2 : Analyse and compare various approaches and experimental results, to identify their key strengths and weaknesses.	• Final Report • Second Term Seminar
CLO3 : Evaluate the proposed new concept, techniques or designs, ideally demonstrating that they improve on the state of the art.	• Final Report • Second Term Seminar
CLO4 : Create new concepts, techniques or designs, thereby demonstrating a capacity for innovation.	• Final Report • Second Term Seminar
CLO5 : Exchange ideas with a supervisor to boost creativity and develop critical thinking	• Final Report • Second Term Seminar
CLO6 : Give an oral presentation that is as pedagogical, clear, technically precise and insightful as possible.	• Second Term Seminar
CLO7 : Write a report that articulates all aspects of a research project, including comparison with existing work, that is of the highest standards technically.	• Final Report

Learning and Teaching Technologies

Moodle - Learning Management System

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
Final Report Assessment Format: Individual	75%	
Second Term Seminar Assessment Format: Individual	25%	

Assessment Details

Final Report

Assessment Overview

The report should represent the results of around 300 hours work. Lots of efforts and time have to be put into writing the report. Do not wait till you get to the end of session to start writing it; instead, keep writing as you make progress in your research. First, writing considerably helps in clarifying one's ideas, detecting mistakes in some arguments or flaws in some approaches, suggesting extensions or further developments, etc. Second, you are most likely not to express your ideas or results clearly and precisely enough the first time you write them down, and you will have to produce many versions before you can be satisfied with the outcome. As indicated below, the quality of your report weighs a lot in the final mark. You might have produced excellent results; if they are not presented in a very clear, accurate, rigorous and precise manner, then you will loose many marks. Actually, if you do not have good writing skills then you should not consider a research project and rather do courses that require different kinds of skills, as you will otherwise most likely be considerably disappointed with the final mark. Keep in mind that conveying one's results properly is as important as getting good results; your work, be it theoretical or practical, will not be valued as you might hope it will if it is not described properly because your writing skills are too poor or your writing style is imprecise or lacks rigour. Here are the key points about the report.

• You are strongly encouraged to use Latex and not Word. If you have to write some mathematical formulas, even only very few of them, consider that Word is not an option. There is no specific requirement on fonts, layout, structure, etc.

• The length of the report is not relevant. What is expected from the report is evidence that

you can address a scientific or technological matter clearly and precisely, from describing the problem to explaining the proposed solution and evaluating the benefits and limitations of your approach.

• If your research is theoretical, then the report will include all the results you have obtained, described with complete details and aiming at maximum clarity. Besides reporting on your results, you should include some back- ground, but no complete literature review is expected. You will not provide an overview or describe the state of the art of a whole field, but only refer to the literature and explain the fundamental concepts and results that are strictly necessary to describe the problem you have tackled, explain where your work fits with what was known about the problem, and explain the con- cepts and results that you have used to conduct your research. This should not necessitate to refer to more than a few papers, definitely less than a dozen.

• If your research is practical, then the questions of “what to write” and “how much to write” are more meaningful. The report is not meant to include every implementation detail, and certainly not include appendices of program code. You should describe the needs that your implementation is meant to address, the main features and weaknesses of existing software designed for that same purpose, and what your approach provides that was not available so far. The report should include a clear and precise description of the main challenges that had to be solved, and of the solutions you came up with. So besides explaining what your work is about, what has been achieved and how your implementation compares with known alternatives, the report should focus exclusively on that part of your work where the true research really is. Reference to the literature is expected to be more limited than for a theoretical piece of work. It is understood that your main aim is to impress supervisor and assessor with a clever implementation, and not with a thick report.

Course Learning Outcomes

- CLO1 : Apply existing methods to a problem for an in-depth understanding of how they work and of their limitations.
- CLO2 : Analyse and compare various approaches and experimental results, to identify their key strengths and weaknesses.
- CLO3 : Evaluate the proposed new concept, techniques or designs, ideally demonstrating that they improve on the state of the art.
- CLO4 : Create new concepts, techniques or designs, thereby demonstrating a capacity for innovation.

- CLO5 : Exchange ideas with a supervisor to boost creativity and develop critical thinking
- CLO7 : Write a report that articulates all aspects of a research project, including comparison with existing work, that is of the highest standards technically.

Generative AI Permission Level

Simple Editing Assistance

In completing this assessment, you are permitted to use standard editing and referencing functions in the software you use to complete your assessment. These functions are described below. You must not use any functions that generate or paraphrase passages of text or other media, whether based on your own work or not.
If your Convenor has concerns that your submission contains passages of AI-generated text or media, you may be asked to account for your work. If you are unable to satisfactorily demonstrate your understanding of your submission you may be referred to UNSW Conduct & Integrity Office for investigation for academic misconduct and possible penalties.
For more information on Generative AI and permitted use please see here.

Second Term Seminar

Assessment Overview

Plan for a one hour seminar, with between half an hour and 45 mns devoted to your presentation or software demonstration, and the rest of time left to answer questions. For a practical project, the seminar is absolutely essential for demonstration purposes. Prepare carefully how you will present the features of your system, and be ready for using it as requested by the supervisor and assessor. For a theoretical project, you will want to explain the key ideas, without going over all the details that have been included in the report; whereas the report should demonstrate your ability to work at a low level of detail, the seminar should demonstrate that you can show “the big picture”. For all kinds of projects, the seminar gives the supervisor and assessor a chance to ask questions on the report.

TMS will invite supervisor and assessor to assess the seminar, by awarding marks and providing comments using the following marking scheme, distributed over 2 criteria.

• Project outcomes (70%)
– FL (0-49%): Most of the work that was planned for COMP9992 as presented during the COMP9991 seminar failed to be completed.
– PS (50-64%): Most of the work that was planned for COMP9992 as presented during the

COMP9991 seminar has indeed been successfully completed, though some significant goals have not been reached.
– CR (65-74%): Almost all of the work that was planned for COMP9992 as presented during the COMP9991 seminar has indeed been successfully completed, except for a few minor goals.
– DN (75-84%): All the work that was planned for COMP9992 as presented during the COMP9991 seminar has indeed been fully completed, the project is successful.
– HD (85-100%): All of the work and beyond that was planned for COMP9992 as presented during the COMP9991 seminar has indeed been fully completed, the results of the project are, be it modestly, beyond expectations.

• Quality of presentation (30%)
– FL (0-49%): Sloppy presentation.
– PS (50-64%): Presentation has been well prepared and is reasonably clear and well structured.
– CR (65-74%): Presentation has been very well prepared; provided that it has the assumed background, the audience follows it easily.
– DN (75-84%): Presentation has been polished, it is very well structured, with good and insightful examples and illustrations.
– HD (85-100%): Remarkable presentation, the student demonstrates that he or she was determined to be as pedagogical as possible, with a sense of perfectionism, and he or she fully succeeded.

TMS will also invite supervisor and assessor to assess the research report, by awarding marks and providing comments using the following marking scheme, distributed over 3 criteria.

• Literature review (15%)
– FL (0-49%): Fails to review part of the literature that is directly relevant, or what is being reviewed is not always relevant.
– PS (50-64%): A decent literature review though it might have a few gaps or it might not always be fully relevant.
– CR (65-74%): A good literature review with no significant gap and that is always relevant.
– DN (75-84%): A comprehensive literature review that identifies very well its limitation and where the problem fits.
– HD (85-100%): A comprehensive literature review that demonstrates that the student has

mastered the field and has an in-depth understanding of the state of art and where the research fits.

• The work that has been conducted and the results that have been obtained (60%)
– FL (0-49%): What has been achieved is below expectations, not only has the project not delivered on its promises; there is nothing significant to learn from what has been attempted.
– PS (50-64%): The project can be considered to have successful outcomes, though with more dedication, more could and should have been achieved.
– CR (65-74%): Thanks to good work, the project is fully successful, it has delivered on its promises, or when it has not, there are good reasons why and lessons to be learnt from it.
– DN (75-84%): The project required to meet significant challenges, genuine difficulties have been overcome, thanks to creative thinking or by running complex experiments.
– HD (85-100%): The project improved on the state of the art, the work is publishable.

• Quality of presentation (25%)
– FL (0-49%): Report is sloppy, poorly structured, almost always lacks clarity.
– PS (50-64%): An acceptable report, that has been prepared carefully enough, reasonably well structured, reasonably clear.
– CR (65-74%): A good report, carefully written, always clear with good illustrations, that reads easily.
– DN (75-84%): A very good report, carefully designed and very well structured, with attention brought to details, always very clear in its explanations.
– HD (85-100%): An excellent report, that provides true insights, professionally presented, thanks to a writing style that is always very effective.

The mark will be awarded to COMP9992 and retrospectively to COMP9991 as well.

Course Learning Outcomes

- CLO1 : Apply existing methods to a problem for an in-depth understanding of how they work and of their limitations.
- CLO2 : Analyse and compare various approaches and experimental results, to identify their key strengths and weaknesses.
- CLO3 : Evaluate the proposed new concept, techniques or designs, ideally demonstrating that they improve on the state of the art.
- CLO4 : Create new concepts, techniques or designs, thereby demonstrating a capacity for innovation.
- CLO5 : Exchange ideas with a supervisor to boost creativity and develop critical thinking
- CLO6 : Give an oral presentation that is as pedagogical, clear, technically precise and

insightful as possible.

Generative AI Permission Level

No Assistance

This assessment is designed for you to complete without the use of any generative AI. You are not permitted to use any generative AI tools, software or service to search for or generate information or answers.
For more information on Generative AI and permitted use please see here.

General Assessment Information

Grading Basis

Standard

Course Schedule

Attendance Requirements

Not Applicable - as no class attendance is required

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
	Eric Martin					No	Yes

Other Useful Information

Academic Information

I. Special consideration and supplementary assessment

If you have experienced an illness or misadventure beyond your control that will interfere with your assessment performance, you are eligible to apply for Special Consideration prior to, or within 3 working days of, submitting an assessment or sitting an exam.

Please note that UNSW has a Fit to Sit rule, which means that if you sit an exam, you are declaring yourself fit enough to do so and cannot later apply for Special Consideration.

For details of applying for Special Consideration and conditions for the award of supplementary

assessment, please see the information on UNSW's Special Consideration page.

II. Administrative matters and links

All students are expected to read and be familiar with UNSW guidelines and polices. In particular, students should be familiar with the following:

- Attendance
- UNSW Email Address
- Special Consideration
- Exams
- Approved Calculators
- Academic Honesty and Plagiarism
- Equitable Learning Services

III. Equity and diversity

Those 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 convener prior to, or at the commencement of, their course, or with the Equity Officer (Disability) in the Equitable Learning Services. Issues to be discussed may include access to materials, signers or note-takers, the provision of services and additional exam and assessment arrangements. Early notification is essential to enable any necessary adjustments to be made.

IV. Professional Outcomes and Program Design

Students are able to review the relevant professional outcomes and program designs for their streams by going to the following link: https://www.unsw.edu.au/engineering/student-life/student-resources/program-design.

Note: This course outline sets out the 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 or your primary learning management system (LMS) 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/Moodle/LMS, the description in the Course Outline/Moodle/LMS applies.

Academic Honesty and Plagarism

UNSW has an ongoing commitment to fostering a culture of learning informed by academic

integrity. All UNSW students have a responsibility to adhere to this principle of academic integrity. Plagiarism undermines academic integrity and is not tolerated at UNSW. *Plagiarism at UNSW is defined as using the words or ideas of others and passing them off as your own.*

Plagiarism is a type of intellectual theft. It can take many forms, from deliberate cheating to accidentally copying from a source without acknowledgement. UNSW has produced a website with a wealth of resources to support students to understand and avoid plagiarism, visit: student.unsw.edu.au/plagiarism. The Learning Centre assists students with understanding academic integrity and how not to plagiarise. They also hold workshops and can help students one-on-one.

You are also reminded that careful time management is an important part of study and one of the identified causes of plagiarism is poor time management. Students should allow sufficient time for research, drafting and the proper referencing of sources in preparing all assessment tasks.

Repeated plagiarism (even in first year), plagiarism after first year, or serious instances, may also be investigated under the Student Misconduct Procedures. The penalties under the procedures can include a reduction in marks, failing a course or for the most serious matters (like plagiarism in an honours thesis or contract cheating) even suspension from the university. The Student Misconduct Procedures are available here:

www.gs.unsw.edu.au/policy/documents/studentmisconductprocedures.pdf

Submission of Assessment Tasks

Work submitted late without an approved extension by the course coordinator or delegated authority is subject to a late penalty of five percent (5%) of the maximum mark possible for that assessment item, per calendar day.

The late penalty is applied per calendar day (including weekends and public holidays) that the assessment is overdue. There is no pro-rata of the late penalty for submissions made part way through a day. This is for all assessments where a penalty applies.

Work submitted after five days (120 hours) will not be accepted and a mark of zero will be awarded for that assessment item.

For some assessment items, a late penalty may not be appropriate. These will be clearly

indicated in the course outline, and such assessments will receive a mark of zero if not completed by the specified date. Examples include:

- Weekly online tests or laboratory work worth a small proportion of the subject mark;
- Exams, peer feedback and team evaluation surveys;
- Online quizzes where answers are released to students on completion;
- Professional assessment tasks, where the intention is to create an authentic assessment that has an absolute submission date; and,
- Pass/Fail assessment tasks.

Faculty-specific Information

Engineering Student Support Services – The Nucleus - enrolment, progression checks, clash requests, course issues or program-related queries

Engineering Industrial Training – Industrial training questions

UNSW Study Abroad – study abroad student enquiries (for inbound students)

UNSW Exchange – student exchange enquiries (for inbound students)

UNSW Future Students – potential student enquiries e.g. admissions, fees, programs, credit transfer

Phone

(+61 2) 9385 8500 – Nucleus Student Hub

(+61 2) 9385 7661 – Engineering Industrial Training

(+61 2) 9385 3179 – UNSW Study Abroad and UNSW Exchange (for inbound students)

School Contact Information

CSE Help! - on the Ground Floor of K17

- For assistance with coursework assessments.

The Nucleus Student Hub - https://nucleus.unsw.edu.au/en/contact-us

- Course enrolment queries.

Grievance Officer - grievance-officer@cse.unsw.edu.au

- If the course convenor gives an inadequate response to a query or when the courses convenor does not respond to a query about assessment.

Student Reps - stureps@cse.unsw.edu.au

- If some aspect of a course needs urgent improvement. (e.g. Nobody responding to forum queries, cannot understand the lecturer)

You should **never** contact any of the following people directly:

- Vice Chancellor

- Pro-vice Chancellor Education (PVCE)

- Head of School

- CSE administrative staff

- CSE teaching support staff

They will simply bounce the email to one of the above, thereby creating an unnecessary level of indirection and a delay in the response.