



THE UNIVERSITY
of ADELAIDE

School of Mechanical Engineering

Masters by Coursework Student Information Manual 2016

For the most up to date information about Masters by Coursework please visit the following website:

School Web Site: <http://www.mecheng.adelaide.edu.au/>

Disclaimer

The School of Mechanical Engineering has taken every effort to ensure that an up-to-date and accurate summary of all information is provided in this manual to date; however, this information is subject to change. If you have any queries about the information in this manual please contact the School Office on 8313 5460 or email info@mecheng.adelaide.edu.au.

The information in this document does not override University Policies or data available through the University online. Please visit <http://www.adelaide.edu.au/calendar/> to access the University's Undergraduate and Postgraduate Calendar.

All information contained in this document is accurate at the date (February 2016) of publication.

1. General Advice

1.1 Welcome from the Head of School

If this is your first year with us at The University of Adelaide, I would like to welcome you to the School of Mechanical Engineering. If this is your second or subsequent year, welcome back and congratulations on your success in getting this far.

The two year Masters by coursework programs (1.5 years for Master of Marine Engineering) will allow you to build on the fundamentals you have learnt in your previous studies. At the same time some of the elective courses will allow you to go more deeply into topics for which you already have the fundamentals, while others will allow you to broaden your experience. The Masters by Coursework programs are aimed at graduates, and/or those with suitable vocational qualifications and experience. These provide a level of mastery or overview of the relevant field of study or area of professional practice with an emphasis on the acquisition or enhancement of specific discipline, professional or vocational skills and knowledge, and are undertaken primarily as coursework but with a research project/minor thesis.

The courses that you study in each semester will include lectures, tutorials, practical work and minor projects, and some will include films, videos and site visits. Lectures provide a great opportunity to acquire understanding as well as information. Tutorials provide an opportunity to further develop your understanding and test it. As early as possible, you should develop the habit of learning new material by doing assignments, practicals, and the required reading when the work is presented. Hopefully, you will continue to develop good time management skills, which will serve you well throughout your career. Don't leave all your revision until swot vac – ask your lecturers to clarify points you don't understand as soon as you can.

1.2 Postgraduate Programs in the School of Mechanical Engineering

Mechanical engineering is concerned with the management of people and resources, the creation and use of new technologies and the design and development of new processes and products. This mostly involves 'things that move', such as motor vehicles, aircraft systems, engines, pumps, gas turbines, industrial plants, air-conditioning/refrigeration systems, manufacturing processes, building services and even space stations.

Available programs

- Master of Engineering (Aerospace)
- Master of Engineering (Mechanical)
- Master of Engineering (Mechatronic)
- Master of Marine Engineering
- Graduate Diploma in Engineering (Aerospace)
- Graduate Diploma in Engineering (Mechanical)
- Graduate Diploma in Engineering (Mechatronic)

Graduate Diploma in Marine Engineering
Graduate Certificate in Marine Engineering

2. Seeking Help

If you have a problem that is interfering with your studies seek advice/help as early as possible. The University offers a range of services to assist students.

2.1 Faculty of Engineering, Computer & Mathematical Sciences Office

Located Level 1, Ingkarni Wardli Building

- Admission and transfer information
- Credit Transfers
- Program Advice
- Enrolment Advice
- Graduation Information
- General Information

For more information about support from the Faculty, please see <http://www.ecms.adelaide.edu.au/current-students/>

2.2 School of Mechanical Engineering Office

Located S116, Engineering South Building

- Card Access Requests
- Final Year Project/Masters seminars
- Assignment/work experience form submission
- Course and Program coordinators are also available to students who require specific course information, academic counselling and career advice.

To find and contact your Course Coordinator, please refer to individual course outlines at: <http://www.adelaide.edu.au/course-outlines/>.

To find and contact your Program Coordinator, please see the list at: <http://mecheng.adelaide.edu.au/current-students/student-support/courseadvisors/>.

2.3 Ask Adelaide

<http://www.adelaide.edu.au/student/>

Ask Adelaide is a student portal designed to offer comprehensive student support services to assist you throughout your studies.

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- Adelaide Abroad (student exchange) (<http://www.adelaide.edu.au/global-learning/>)
 - Adelaide University Union (<http://www.aau.org.au/>)
 - Childcare (<http://www.adelaide.edu.au/childcare/>)
 - Counselling Service (http://www.adelaide.edu.au/counselling_centre/)
 - Disability Service (<http://www.adelaide.edu.au/disability/>)
 - Elite Athletes Support and Information Service (<http://www.adelaide.edu.au/eliteathletes/>)
 - Good Study Habits – Resources (http://www.adelaide.edu.au/counselling_centre/resources/)
 - Graduation (<http://www.adelaide.edu.au/student/graduations/>)
 - Student Finance (<http://www.adelaide.edu.au/student/finance/>)
 - Student Policy and Appeals (<http://www.adelaide.edu.au/student/policies/>)
 - University Health Practice (<http://health.adelaide.edu.au/gp/practices/pmp/>)

2.4 University Learning Resources

Problems can arise if you fail to attend lectures on a regular basis. It is important that you keep up to date with your studies; it is hard to catch up once you fall behind. Problems can also arise if you do not have the right approach to your studies. You need to actively involve yourself in the material you are learning, ask questions in class, keep up to date with assignments (do not leave everything until the last minute), read beyond the course notes and make links between the material in one course and that in others.

To be successful as an engineer, you need to use the program in which you are enrolled as a means of teaching yourself how to learn, how to find information and grasp its meaning quickly and accurately and then use it to solve problems. If you do not develop these skills at university, then you will most likely be an ineffective engineer at best. It is important to realise that your future employers will value your ability to solve problems and be innovative as much as or more than they value your degree certificate. You need to realise that it is crucial to use your time at university to develop in this area by practicing these skills at every opportunity (for example, when given sample problems to try or assignments to hand up).

The University of Adelaide has a number of services that can assist your learning. These include:

- The Writing Centre Service (<http://www.adelaide.edu.au/writingcentre/>)
- Maths Learning Centre (<http://www.adelaide.edu.au/mathlearning/>)
- Maths Learning drop-in room (http://www.adelaide.edu.au/mathlearning/drop_in/)
- Professional and Continuing Education (PCE) (<http://www.adelaide.edu.au/pce/>)

2.5 General Student Enquires

Enquires about the operation of the School may be directed to the appropriate person on the School of Mechanical Engineering's staff page:

<http://mecheng.adelaide.edu.au/people/>.

The School of Mechanical Engineering operating hours are **10am to 4pm Monday to Friday**.

3. Unified

<https://unified.adelaide.edu.au/web/unified/home>

USERNAME

Your username is in the format "axxxxxxx" where xxxxxxx is the 7 digits that form your student number.

Unified has been developed with you in mind. It centralises login to your services, bringing together important news and information with just one click. UNIFIED enables students to use their email and calendar, watch and listen to recordings of lectures, view the list of courses they're taking and the grades they've received, search the University's library catalogue and access information about loans they've made, receive uni news feeds and announcements, and use interactive campus maps.

Students are able to access all of this and more through a central website with a single login.

Need help? Contact the Help Desk at 8313 3000 or send an e-mail to servicedesk@adelaide.edu.au.

4. Purchasing of Lecture Notes

Lecture notes can be purchased online from the new Online Shop (<http://www.adelaide.edu.au/icc/student/>). Login to Unified and simply click on the Online Shop icon in the left hand side of the Home page.

As soon as the course material is printed and available, it will be published on the Online Shop where students can order and pay and then COLLECT their reader from Image & Copy Centre (located Level 1, Hughes Building).

5. Student Representatives and Staff Committee

A student staff committee consisting of one representative from each year level, program coordinators, the Director of Learning & Teaching, and the Head of School meets once per semester and this is your opportunity to provide feedback to the staff about your program with the idea of improving our programs and our service to you. If you perceive any problems at all, please make sure your program coordinator or student representative is informed.

To find out who your level student representative is, please visit

<http://mecheng.adelaide.edu.au/current-students/student-support/studentrepresentatives/>

6. Academic Information

6.1 Program duration and academic dates

The Masters of Engineering program is two years of full-time study (48 units). The Master of Marine Engineering is 1 ½ years full-time study (36 units).

Important academic dates are available from <http://www.adelaide.edu.au/student/dates/>

6.2 Program structure

The Master of Engineering (Aerospace, Mechanical & Mechatronic) is a 48-unit program comprising 9 units of core courses, 12 units of foundation courses, 15 units of advanced technical coursework and a project to the value of 12 units, which introduces candidates to research.

International students from non-English speaking backgrounds will be required to take an English language communications course as part of the program.

The Master of Marine Engineering program is a 36-unit program. Students will complete 9 units of core courses and 15 units of electives and a 12-unit research project. At least 21 units of study must be taken from courses taught by the University of Adelaide.

6.3 Teaching philosophy and methodologies

As students, your learning is your responsibility. Staff are here to facilitate your learning and to offer you the help you need but this will not guarantee that you will learn anything. You have to ensure that you use the resources available to you to facilitate your own learning.

Teaching methodologies are based around the lecture/tutorial format. Lectures provide an opportunity for staff to explain difficult concepts and answer student questions – they

should not be seen simply as an information exchange session. Tutorials are often in the form of example problems that are solved by students with the help of staff. Laboratory classes are intended to demonstrate the theoretical concepts that underpin the course they are associated with. They represent a learning experience in themselves.

6.4 Program Objectives and Graduate Attributes

The main objective of the Master of Engineering programs is to develop in you the necessary skills, knowledge and problem solving ability that will allow you to work effectively as an Aerospace, Mechanical, Mechatronic or Marine Engineer. In order for you to function effectively in any of the traditional Mechanical Engineering roles after graduation, you will need to ensure, with our help, that you have developed the following attributes, which we believe capture the qualities that all competent engineers should possess.

The graduate attributes to be developed as a result of undertaking one of the above programs are specified by our accrediting body, Engineers Australia and are listed below.

- ability to apply knowledge of basic science and engineering fundamentals;
- ability to communicate effectively, not only with engineers but also with the community at large;
- in-depth technical competence in Aerospace, Mechanical or Mechatronic Engineering;
- ability to undertake problem identification, formulation and solution;
- ability to utilise a systems approach to design and operational performance;
- ability to function effectively as an individual and in multi-disciplinary and multi-cultural teams, with the capacity to be a leader or manager as well as an effective team member;
- understanding of the social, cultural, global and environmental responsibilities of the professional engineer, and the need for sustainable development;
- understanding of the principles of sustainable design and development;
- understanding of the professional and ethical responsibilities and commitment to them; and
- expectation of the need to undertake lifelong learning, and the capacity to do so.

The above graduate attributes map into the University of Adelaide generic graduate attributes as follows. The University of Adelaide attribute is shown first and the Engineers Australia attribute or attributes that map to it are shown in italics immediately underneath.

1. Knowledge and understanding of the content and techniques of a chosen discipline at advanced levels that are internationally recognised.
Ability to apply knowledge of basic science and engineering fundamentals.
In-depth technical competence in the specific discipline (Aerospace, Mechanical or Mechatronic Engineering).

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2. The ability to locate, analyse, evaluate and synthesise information from a wide variety of sources in a planned and timely manner.
Ability to apply knowledge of basic science and engineering fundamentals.
Ability to undertake problem identification, formulation and solution.
Ability to utilise a systems approach to design and operational performance.
 3. An ability to apply effective, creative and innovative solutions, both independently and cooperatively, to current and future problems.
Ability to undertake problem identification, formulation and solution.
Ability to utilise a systems approach to design and operational performance.
 4. Skills of a high order in interpersonal understanding, teamwork and communication.
Ability to communicate effectively, not only with engineers but also with the community at large.
 5. A proficiency in the appropriate use of contemporary technologies.
In-depth technical competence in the specific discipline (Aerospace, Mechanical or Mechatronic Engineering).
 6. A commitment to continuous learning and the capacity to maintain intellectual curiosity throughout life.
Expectation of the need to undertake lifelong learning, and the capacity to do so.
 7. A commitment to the highest standards of professional endeavour and the ability to take a leadership role in the community.
Ability to function effectively as an individual and in multi-disciplinary and multi-cultural teams, with the capacity to be a leader or manager as well as an effective team member.
 8. An awareness of ethical, social and cultural issues and their importance in the exercise of professional skills and responsibilities.
Understanding of the social, cultural, global and environmental responsibilities of the professional engineer, and the need for sustainable development.
Understanding of the principles of sustainable design and development.
Understanding of the professional and ethical responsibilities and commitment to them.

6.5 Grading Scheme

The grading scheme used for all courses in the School is:

High Distinction:	85-100%
Distinction:	75-84%
Credit:	65-74%
Pass:	50-64%
Fail	1-49%

7. Assessment

Refer to individual course outlines

Assessment is mostly by assignments, laboratory and examination. Details of assessment for each course are provided in the course outlines (<http://www.adelaide.edu.au/course-outlines/>).

Feedback usually takes the form of either written comments on your work or part of a class session devoted to discussing aspects of the assessment that gave students most trouble.

7.1 Coursework

Weekly problems, tutorials, quizzes etc. handed in at the lecture (to the lecturer) will be classed as coursework.

For coursework, the lecturer will be responsible for setting, collection and marking, and if applicable penalties for late submission will apply.

7.2 Assignments

Work requiring longer preparation time (e.g. due in two weeks) such as essays, laboratory reports, set assignments etc. will be regarded as assignments.

Those marking your assignments will endeavour to return them to you within 2 weeks after the due date. Laboratory reports will not be handed back until all students in the class have completed that particular lab class. This could be the end of the semester for most classes.

7.3 Submission of Assessments

Submission dates for coursework will be advertised on MyUni (<http://www.adelaide.edu.au/myuni/>) for each course.

For assignments and reports a School submission sheet must be attached to the front of the work and completed in full. These submission sheets are available online (<http://mecheng.adelaide.edu.au/docs/2014-assessment-cover-sheet.pdf>) and in a bookcase next to the assignment submission boxes.

The assignments and reports MUST be submitted into the appropriate submission box on level 2 Engineering South Building or other arrangements as notified. The boxes will be emptied each day at 5:00pm (unless otherwise specified by your lecturer) and the work stamped with the current date.

7.4 Laboratory Classes

Many courses include laboratory classes. Students should attend only the lab sessions for the courses in which they are enrolled (labs and corresponding courses are listed in the timetables included in Laboratory books and they are posted on the School's Undergraduate Notice Board). During your course enrolment you have a 'dummy' course assigned to lab classes (ie no HECS component or unit value) to enrol in so your timetable can reflect that there is the possibility of a lab class.

For detailed information about the laboratories students need to obtain the relevant laboratory books from the Mech. Eng. School Office. To enrol on-line in specific laboratory sessions students need to use a dedicated lab website. This should be done during week 1, during which there are no laboratory classes. You must enrol in each lab class separately. To enrol and to check dates of lab sessions and download lab timetables students should log into the lab website using the link: <https://labselect.mecheng.adelaide.edu.au/>.

For safety reasons, before attending the lab sessions **you must attend** a safety induction meeting organised during week 1 (dates provided in the laboratory books).

Laboratory classes are compulsory (if you are enrolled in a corresponding course). If unable to attend any specific lab class, permission must be sought from a lab demonstrator to attend the next available lab session. If a class is missed or a lab report not handed in, then that is grounds for failure of the entire course.

7.5 Your rights

Refer to the Student Grievance Resolution Process
(<http://www.adelaide.edu.au/student/grievance/>)

If you believe that you have been awarded an incorrect mark for any work, you must see the lecturer in charge of the course in the first instance. In the case of an examination, you have a right to see your exam paper but you cannot remove it from the lecturer's office without his/her consent. If you are still unsatisfied with the response of the lecturer, you may write a letter to the Head of the School requesting that your paper be re-marked by another staff member. In this case the new mark will apply, whether it is lower or higher than the original.

7.6 Unsatisfactory Academic Performance

Refer to policy and guidelines for each course outline

University of Adelaide students are provided with the opportunity to meet the academic standards that lead to the conferral of a University of Adelaide award. Students have the primary responsibility for their own academic progress but the University recognises that it is important to identify students at risk of making unsatisfactory progress so that they can take steps to address the impediments to their progress and to improve. If a student's

progress in an academic program is consistently unsatisfactory, conditions may be placed on the student's continued enrolment or the student may be excluded from continuing their studies in that program.

For more information on the Unsatisfactory Academic Progress by Coursework Students Policy, please refer to the following link - <http://www.adelaide.edu.au/policies/1803/>

7.7 Replacement Examinations

Refer to the exams website

For information regarding Replacement exams (medical, compassionate or academic), and the application forms required, please visit the following website:

<http://www.adelaide.edu.au/student/exams/supps.html>

For any queries please contact the Faculty of Engineering, Computer & Mathematical Sciences: <http://www.ecms.adelaide.edu.au/>.

8. Laboratory Safety

Persons who fail to comply with these procedures will not be permitted to undertake the assigned tasks. These procedures have been developed from information supplied by the SA Department of Labour, the University OH&S Unit and the Standards Association of Australia.

The University of Adelaide recognizes its obligations to take all reasonable precautions to safeguard the Health, Safety and Welfare of its staff and students while they are working in the environs of the University.

ALL STUDENTS MUST UNDERTAKE AN OCCUPATIONAL HEALTH AND SAFETY (OH&S) LABORATORY CLASS PRIOR TO UNDERTAKING ANY LABORATORY WORK.

YOU WILL NOT BE ALLOWED TO UNDERTAKE ANY LABORATORY WORK UNTIL AN OH&S INDUCTION CLASS HAS BEEN COMPLETED.

YOU WILL BE NOTIFIED VIA EMAIL FOR THE TIMES AND LOCATION OF THESE SESSIONS. PLEASE CHECK YOUR EMAILS FREQUENTLY TO AVOID MISSING THIS INFORMATION.

IT IS COMPULSORY TO ATTEND THIS OH&S LABORATORY CLASS EVERY YEAR.

General Safety Rules:

- Eating, drinking or application of cosmetics (ie lip balm, hand creams, etc) are not permitted in any laboratory.
- Working under the influence of drugs or alcohol is prohibited.
- Horseplay or running are not tolerated.
- Students must not work alone in laboratories at any time

Personal:

- Suitable clothing which provides adequate protection must be worn. Button loose clothing, tie back long hair, remove jewellery if the possibility exists for it to get caught in moving parts.
- Close toe shoes must be worn in the laboratories, workshops and on all site visits.
- Approved safety equipment is provided and must be used whenever indicated.
- Never undertake any work unless the known and possible hazards of the operation are known as precisely as possible and the appropriate safety precautions adopted.
- Approved safety glasses must be worn when working with any type of equipment that could cause material to become airborne.
- Approved safety glasses must be worn when working with any chemicals, including solvents and epoxy resins.
- Only use equipment when authorised to do so and after you have familiarised yourself with its correct operating procedures.
- Avoid lifting heavy objects – use mechanical aids whenever possible.

Chemical:

- **Chemical waste must not be disposed of via sinks, drains or stormwater channels.**
- Before using any chemical know of its hazards and dangers if in doubt, read the MSDS or ask!). All spills to be cleaned up immediately in accordance with the MSDS.

Housekeeping:

- All bench surfaces are to be kept clean and tidy and free of chemicals and apparatus that is not being used.
- When operating equipment or carrying out an experiment in the laboratory ensure that the area is safe for any personnel who may enter.
- Observe safety signs at all times.
- Walkways must be kept clean and accessible at all times.
- Extension leads, air lines etc. are not to be placed across designated walkways or when finished with, left lying on the ground.
- In areas where there is a risk of water spillage, no electrical cords may be placed on or near the floor.

Electrical:

- All hand held electrical devices and extension leads must be protected with earth leakage devices.
- Switch off all electrical equipment when not in use.

Fire:

- Fire escape routes are to be kept clear at all times.
- Be familiar with FIRE AND EVACUATION PROCEDURES within your working area.
- Know where the fire extinguishers and fire alarm buttons are located for the area in which you are working and know how to use them.

After hours:

- Work outside of core hours 8:00am – 6:00pm, or on weekends is regarded as after hours.
- Work by undergraduate students in labs can only be performed after hours when supervised by an academic staff (or nominee who could be a postgraduate student or member of the technical staff), and at the discretion of the lab supervisor.

9. Engineering Emergency Procedures

1. **Sound alarm** - If the situation is out of control, notify a floor warden or activate a break glass alarm located in the corridors. The alarm activates the emergency warning system and notifies the fire brigade.

Alert tone (beep - beep) sound: - this means standby – await further instructions. It is not a signal to evacuate.

2. **Evacuate tone** - (whoop – whoop) sound: - this means evacuate the building immediately.

Telephone security: - dial **35444**. Explain the nature of the emergency.

After hours a telephone is available by the western ground floor entrance, on the second floor near the lift and in the CATS suite.

3. **Evacuate** - when the whoop – whoop alarm sounds all occupants of the building must evacuate by the nearest exit or follow the directions of the floor wardens (red hats). Leave doors unlocked and lights on. Take personal valuables with you. Mobility impaired occupants should proceed to the most convenient exit point and seek the assistance of a floor warden. **Do not use the lifts. Do not re- enter the building.**

Proceed to the assembly area on the lawns outside the Napier building. (see map below)

4. Wait for the all clear from the chief warden.

