

Course Description

7058 - Masters Project

Course Code:	ELEC ENG 7058
Course Title	Masters Project
Academic Year:	2008
Semester:	1 and 2
Units:	12
Lecturer:	Dr. C. C. Lim - Co-ordinator Ms Kristin Munday
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Aims:

The masters project aims to train students in research and development methodology and techniques, develop critical evaluation skills appropriate to their project topic, and provide project management experience.

Outcomes:

At the end of this course, students are expected to have gained skills in engineering design, research and verification, critical evaluation of findings and project management.

Assumed Knowledge:

ELECENG 7057 Engineering Communication and Critical Thinking or equivalent experience in professional and academic communication and analytical thinking.

Delivery Methods:

Students shall work in groups on a two-semester research and development project under the supervision of an academic staff member. Students shall attend a school structured program in the first project semester. Students are expected to attend all EEE weekly research seminars throughout the course of the masters project. Students shall meet the supervisor regularly to report the progress. The results of the project work shall be presented in written report form, by seminar and demonstration of the completed work.

Course Contents:

The course consists of a project work, a structured program and a research seminar program.

The project work is to perform research and development to provide solutions to engineering problems related to industry or to school research, with emphasis on project management and effective communication.

The School structured program consists of the School Induction, the Barr Smith Library tutorial and the Masters Project tutorial.

The School Induction includes the following topics:

1. layout of school and introduction to key staff
2. building access and security
3. access to computing facilities and policies on their use
4. access to telephones and policies on their use
5. Occupational Health and Safety issues, including evacuation procedures, location of first aid assistance, laboratory and workshop rules.

The Barr Smith Library tutorial is to be done in conjunction with library staff and includes an introduction to online search and database facilities.

The topics in the Masters Project tutorial include managing teamwork, project planning, report writing and presenting seminars.

Duration: Projects are to span the two full semesters. Each student is expected to work approximately 270 hours each semester.

Assessment:

Students shall be assessed on the performance of research, planning, execution and management of the project, as well as on the quality of the project deliverables. The assessment is conducted in stages over the two project semesters. The project assessment consists of three modules. They are:

1. Project Performance Assessment
2. Reports Assessment, and
3. Seminars Assessment

The assessors are the project supervisor and the moderator. The assessment role of the supervisor is to provide primary marks on all the three assessment modules. The role of the moderator is to provide secondary assessment to moderate the marks of the supervisor.

The contributions of the assessment components and the assessors are weighted as follows:

Table 2.1: Assessment components and weighting

	Individual/Group Mark	Supervisor	Moderator	Sub-Total
Project Performance	Individual	5%	-	
First Semester	Individual	25%	5%	
Overall				
Sub-Total				35%
Reports	Group	5%	5%	
Project Plan	Group	5%	-	
Mid-Project Design	Individual	5%	5%	
Document	Group	5%	5%	
Final Report	Group	10%	-	
Research Paper				
Final Project Design				
Document				
Sub-Total				45%
Seminars and	Individual &	2.5%	2.5%	
Demonstration	Group	5%	5%	
Project Plan Seminar	Individual &	2.5%	2.5%	
Final Seminar	Group			
Final Demonstration	Individual &			
	Group			
Sub-Total				20%
TOTAL		70%	30%	100%

Course Schedule: The activity schedule for the two project semesters is shown below.

Table 2.2: Project schedule for the two project semesters

Date	Activity	Deliverable
First Project Semester		
Week 1, Monday, 9am	Project allocation posted on the M.E. noticeboard near EM318	
Week 1	Meet supervisor and group members Sign Project Work Contract Begin project work	
Week 1– Week 3	Attend School Induction Attend Barr Smith Library Tutorial	
Week 1 – Week 12	Attend Masters Project Tutorial Attend EE regular research seminars	
Week 6, Thursday, 2pm	Submit Project Plan§	Plan
Week 7	Present Project Plan seminar Project Plan report and seminar assessment	Seminar

	by supervisor and moderator	
Week 12, Thursday, 2pm	Submit Mid-Project Design Document* Submit project workbook	Document Workbook
Week 13	Review progress with supervisor End first part of project	
Week 14, Friday, 2pm	Project performance assessment by supervisor	
Second Project Semester		
Week 1	Begin second part of project	
Week 1 – Week 12	Attend all EE regular research seminars	
Week 11, Friday, 2pm	Submit Final Report (Individual)*	Report
Week 11, Friday, 2pm	Submit Research Paper* Submit Final Design Document§	Research Paper Final Design Document
Weeks 12	Present final seminar and demonstration	Seminar
Weeks 12, Friday, 2pm	Submit project workbook Submit documentation CD	Workbook Documentation CD
Week 12	Perform project close-out Hold lessons-learned meeting Calibrate	
Week 14, Friday, 2pm	Project assessment by supervisor and moderator	

*These reports shall be submitted to the EE School Office. A late penalty of 20% of the maximum report marks is applied for each day beyond the nominal submission date. Supervisors will vary this rule only in the most unusual circumstances, and then only with the approval of the Head of School.

Course Notes:

The main source is the Masters Project Handbook and the course webpage.

Reference Book:

The main reference book is:

Beer, D & McMurrey, D 2005, *A Guide to Writing as an Engineer* (2nd ed), John Wiley and Sons, Hoboken.

Graduate Attributes:

The course facilitates an environment in which graduates are encouraged to take personal responsibility for developing the following attributes.

- GA1 An advanced level of knowledge and understanding of the theory and practice of engineering and the fundamentals of science and mathematics that underpin these disciplines.
- GA2 A commitment to maintain an advanced level of knowledge throughout a lifetime of engineering practice and the skills to do so.

- GA3 The ability to apply knowledge in a systematic and creative fashion to the solution of practical problems.
- GA4 A commitment to the ethical practice of engineering and the ability to practice in a responsible manner that is sensitive to social, cultural, global, legal, professional and environmental issues.
- GA5 Interpersonal and communication skills for effective interaction with colleagues and the wider community.
- GA6 An ability to work effectively both independently and cooperatively as a leader, manager or team member with multi-disciplinary or multi-cultural teams
- GA7 An ability to identify, formalise, model and analyse problems.
- GA8 The capacity to design, optimise, implement, test and evaluate solutions.
- GA9 An ability to plan, manage and implement solutions that balance considerations of economy, quality, timeliness and reliability as well as social, legal and environmental issues.
- GA10 Personal attributes including: perseverance in the face of difficulties; initiative in identifying problems or opportunities; resourcefulness in seeking solutions; and a capacity for critical thought.
- GA11 Skills in the use of advanced technology, including an ability to build software to study and solve a range of problems.
- GA13 An ability to utilise a systems approach to design and operational performance.
- GA14 Understanding of the principles of sustainable design and development.

These programs also foster the graduate attributes of the University of Adelaide and the Institution of Engineers Australia. These should be read in conjunction with the list above.

Assessment of Graduate Attributes

Attributes GA1, GA2, , GA3, GA4, GA5, GA6, GA7, GA8, GA9, GA10, GA11, GA13 and GA14 are all assessed through the projects work. In addition, GA5 is assessed through the report, design documents and seminars presented by the students as part of their project.