Master of Engineering (Electrical)

Year and Campus:	2016
Coordinator:	Professor David Grayden Email: grayden@unimelb.edu.au
Contact:	Melbourne School of Engineering Current students: # General information: **https://ask.unimelb.edu.au (https://ask.unimelb.edu.au/)** # **Contact Stop 1 (http://students.unimelb.edu.au/stop1)** Future Students: # Further Information: **Master of Engineering (Electrical) (http://www.eng.unimelb.edu.au/study/graduate/master-eng-electrical.html)** # Email: **Enquiry (http://www.eng.unimelb.edu.au/study/degrees/master-engineering-electrical/overview)**
Overview:	Electrical engineers play a key role in the design, implementation and management of systems that exploit electrical phenomena to meet practical needs. These include systems for automation, surveillance, energy conversion, power distribution, telecommunications and information processing, on both very large and very small scales. Graduates are sought after for their strong analytical skills and they find employment in a variety of industries in roles ranging from research-and-development to project management and finance.
Learning Outcomes:	To produce graduates skilled in fundamental electrical engineering principles and the application of these to solve complex open-ended problems. Within this specification, students acquire core skills in the areas of electronics, control, signal processing and communications, and they may choose to undertake advanced study in one or more of these areas, in addition to other topics such as power systems and lightwave systems.
Structure & Available Subjects:	The Master of Engineering (Electrical) consists of 300 points of study - 212.5 points core including Capstone Project plus 87.5 points elective subjects (at least 50 points must be taken from Electrical Engineering Electives listed below). Advanced standing will be awarded for equivalent subjects taken in prior study to applicants on the following basis: # a maximum of 100 points for applicants with a 4 year Bachelor of Engineering or equivalent # a maximum of 100 points for applicants with a 3 year undergraduate degree. Students entering with a three year bachelor degree must complete at least 200 points of study within the Masters of Engineering. In cases where applicants have completed the equivalent of more than 100 points of core masters subjects, discipline specific electives must be taken to fulfill the 200 minimum masters study requirement. Note: applicants from the University of Melbourne with: # An appropriate “Engineering System” major will receive 100 points of advanced standing. Electrical Engineering students who have additionally taken Electronic System Implementation from the Bachelor of Science will receive 100 points of advanced standing and be exempt from Electronic System Implementation as a core subject but will need to take an additional 12.5 points of an approved elective. # Engineering breadth sequences (including those in the Bachelor of Commerce) will receive advanced standing to a maximum of 100 points.
Subject Options:	Total 300 points - 212.5 points core (compulsory) plus 87.5 points elective subjects from the list below. Students must complete all 300 points of subjects, including all core subjects, or have advanced standing or exemption. The core and elective subjects are those listed below. The order of subjects below is one way of progressing through the course - students who meet subject requisites may tailor their individual study plan to take into account advanced standing and their study load. Students plan their

study online; however, Melbourne School of Engineering course advisors are available to assist students with individual study plans.

Suggested first 100 points:

Suggested study plan for the first 100 points:

100 points Core from the list below

Core (100 points)

Subject	Study Period Commencement:	Credit Points:
ELEN20005 Foundations of Electrical Networks	January, Semester 2	12.50
MAST20029 Engineering Mathematics	Summer Term, Semester 1, Semester 2	12.50
ENGR90021 Engineering Practice and Communication	Semester 1, Semester 2	12.50
COMP20005 Engineering Computation	Semester 1, Semester 2	12.50
ELEN30009 Electrical Network Analysis and Design	Semester 1	12.50
ELEN30010 Digital System Design	Semester 1	12.50
ELEN30011 Electrical Device Modelling	Semester 2	12.50
ELEN30012 Signals and Systems	Semester 2, Winter Term	12.5

Suggested second 100 points:

Suggested study plan for the second 100 points:

87.5 points Core
12.5 points Approved Elective

Core (87.5 points)

Subject	Study Period Commencement:	Credit Points:
ELEN90056 Electronic Circuit Design	Semester 1	12.50
ELEN90054 Probability and Random Models	Semester 1	12.50
ELEN90055 Control Systems	Semester 1, Semester 2	12.50
ELEN30013 Electronic System Implementation	Semester 2	12.50
ELEN90066 Embedded System Design	Semester 2	12.50
ELEN90057 Communication Systems	Semester 2	12.50
ELEN90058 Signal Processing	Semester 2	12.50

Suggested third 100 points:

Suggested study plan for the third 100 points:

25 points Electrical Engineering capstone project
50 points Electrical Engineering Electives (from the list below)
25 points Approved Electives

Electrical Engineering Capstone projects (25 points)

Students must complete one of the Electrical Engineering Capstone Projects

Subject	Study Period Commencement:	Credit Points:

ELEN90067 Electrical Engineering Capstone Project	Year Long, Semester 1	25
ELEN90070 Electrical Engineering Capstone ProjectA	Semester 1, Semester 2	12.50

NOTE: ELEN90070 Electrical Engineering Capstone Project A is a year-long subject,students commence this subject in Semester 2 and continue in the consecutive semester (Semester 1 in the following year), upon successful completion of this project, students will receive 25 points credit. Students wishing to undertake this subject should also complete the lecture component of the subject in Semester 1 in the following year. **Students should seek approval from the course coordinator before enrolling in ELEN90070 Electrical Engineering Capstone Project A.**

Electrical Engineering Electives

Total 50 points

Subject	Study Period Commencement:	Credit Points:
ELEN90059 Lightwave Systems	Semester 1	12.50
ELEN90060 Power System Analysis	Semester 1	12.50
ELEN90051 Advanced Communication Systems	Semester 1	12.50
ELEN90052 Advanced Signal Processing	Semester 1	12.50
ELEN90061 Communication Networks	Semester 2	12.50
ELEN90062 High Speed Electronics	Semester 2	12.50
ELEN90064 Advanced Control Systems	Semester 2	12.50
ELEN90053 Electronic System Design	Semester 2	12.50
ELEN90074 Introduction to Power Engineering	Semester 1	12.50
ELEN90075 Power Electronics	Semester 2	12.50

Approved Electives

Total 37.5 points

An approved elective is any postgraduate level subject or third-year undergraduate subject. Please note:

1. All students must meet any requisite prior to enrolling in a subject
2. Students may need written permission from other faculties to enrol in some subjects; please check with the course coordinator of the subject
3. Students may take the following subject as an approved elective:

Subject	Study Period Commencement:	Credit Points:
ENGR90033 Internship	January, Semester 1, Semester 2	25

Links to further information:	http://www.eng.unimelb.edu.au/study/degrees/master-engineering-electrical/overview#nav
Related Course(s):	Master of Engineering