Master of Engineering (Mechanical)

Year and Campus:	2013
Coordinator:	Assoc Prof Peter Lee pvlee@unimelb.edu.au
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Overview:	Mechanical engineers focus on turning energy into power and motion. More specifically, this specialisation looks at the generation, conversion and use of energy, as well as the design, construction and operation of devices and systems. Students in this course learn from staff with world-leading expertise in fluid mechanics, turbulence, thermodynamics, control and biomechanics, and have the chance to undertake an industry project that is both research and industrially based. Group activities and site visits help to consolidate theoretical knowledge and prepare students to undertake careers in fields from automotive design and manufacturing to software programming; and in non-engineering roles in organisations such as banks and consulting firms.
Objectives:	To produce graduates who are both skilled in mechanical engineering principles and have the ability to apply them to complex, open-ended engineering tasks and problems.
Structure & Available Subjects:	The Master of Engineering (Mechanical) consists of 300 points of study - 237.5 points core and 62.5 points elective subjects as detailed below. Advanced standing will be awarded for equivalent subjects taken in prior study 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. Applicants who have completed more than 100 points of core subjects in their undergraduate degree will obtain exemption for the cores taken but will need to replace the points in excess of 100 points with elective subjects. # 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 - 237.5 points core (compulsory) and 62.5 points elective subjects from the lists 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 preferred study load. Students plan their study on-line, however Melbourne School of Engineering course advisors are available to assist students with individual study plans. Students who enter without advanced standing for Engineering Mechanics should commence in Summer Semester or in Semester 2 to assist with course planning.

Suggested first 100 points:

Suggested study plan for the first 100 points:

100 points Core

Core (Total 100 points)

Subject	Study Period Commencement:	Credit Points:
ENGR20004 Engineering Mechanics	Not offered 2013	12.50
MAST20029 Engineering Mathematics	Not offered 2013	12.50
ELEN20005 Foundations of Electrical Networks	Not offered 2013	12.50
ENGR90021 Engineering Communication	Not offered 2013	12.50
MCEN30017 Mechanics & Materials	Not offered 2013	12.50
MCEN30016 Mechanical Dynamics	Not offered 2013	12.50
MCEN30014 Mechanical Design	Not offered 2013	12.50
MCEN30018 Thermodynamics and Fluid Mechanics	Semester 1	12.50

Suggested second 100 points:

Suggested study plan for the second 100 points:

100 points Core

Core (Total 100 points)

Subject	Study Period Commencement:	Credit Points:
COMP20005 Engineering Computation	Semester 1	12.50
MCEN90015 Thermodynamics	Not offered 2013	12.50
MCEN90014 Materials	Not offered 2013	12.50
ELEN90055 Control Systems	Not offered 2013	12.50
MCEN90012 Design and Manufacturing 1	Not offered 2013	12.50
MCEN90008 Fluid Dynamics	Not offered 2013	12.50
MCEN90009 Dynamics of Machines	Not offered 2013	12.50
MCEN90026 Solid Mechanics	Not offered 2013	12.50

Suggested third 100 points:

Suggested study plan for the third 100 points:

37.5 points Core
62.5 points from the electives listed below (student need to take at least 4 electives from the Group 1 list).

Core

Subject	Study Period Commencement:	Credit Points:
MCEN90022 Capstone Project	Semester 1	25
MCEN90013 Design and Manufacturing 2	Not offered 2013	12.50

Group 1 electives

Choose 4 electives from this group.

Subject	Study Period Commencement:	Credit Points:
MCEN90010 Finance & Human Resources for Engineers	Not offered 2013	12.50
MCEN90020 Advanced Materials	Not offered 2013	12.50
MCEN90018 Advanced Fluid Dynamics	Not offered 2013	12.50
MCEN90029 Advanced Solid Mechanics	Not offered 2013	12.50
ELEN90064 Advanced Control Systems	Semester 2	12.50
MCEN90019 Advanced Thermodynamics	Not offered 2013	12.50
MCEN90037 Advanced Dynamics	Not offered 2013	12.50

Group 2 electives

Choose one elective from this group -

Subject	Study Period Commencement:	Credit Points:
MCEN90032 Sensor Systems	Not offered 2013	12.50
ENGR90024 Computational Fluid Dynamics	Not offered 2013	12.50
BMEN90022 Computational Biomechanics	Not offered 2013	12.50
ENGR90026 Engineering Entrepreneurship	Not offered 2013	12.50
MCEN90023 Quality and Reliability	Not offered 2013	12.50
MCEN90031 Applied High Performance Computing	Not offered 2013	12.50
MCEN90028 Robotics and Automation Systems	Not offered 2013	12.50

Links to further information:	http://www.eng.unimelb.edu.au/Postgrad/MEng/me_mechanical.html
Notes:	NOTE: Credit may not be obtained for both ENGR30001Fluid Mechanics & Thermodynamics and MCEN30018 Thermodynamics and Fluid Mechanics
Related Course(s):	Master of Engineering