BMEN90018 Biomedical Engineering Capstone Project

Credit Points:	25
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2015, Parkville This subject commences in the following study period/s: Year Long, Parkville - Taught on campus. Semester 1, Parkville - Taught on campus. Semester 2, Parkville - Taught on campus.
Time Commitment:	Contact Hours: 2 x one hour lectures and up to 24 hours of meetings with supervisors Total Time Commitment: 400 hours
Prerequisites:	**Either** **Subject** / **Study Period Commencement:** / **Credit Points:** BMEN90026 Clinical Trials and Regulations / Semester 1 / 12.50 (BMEN90026 Clinical Trials and regulation may be taken concurrently) **OR** **Subject** / **Study Period Commencement:** / **Credit Points:** BMEN90020 Biomedical Design and Regulation / Not offered 2015 / 12.50 **AND** At least four level 9 Biomedical Engineering (BMEN) subjects **AND** BMEN90018 Semester 1 and BMEN90018 Semester 2 can only be taken in the final semester of enrolment
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	433-464 Project Work **Subject** / **Study Period Commencement:** / **Credit Points:** BMEN90025 Biomedical Eng Capstone Project A / Semester 1, Semester 2 / 12.50 BMEN40001 Biocellular Engineering Research Proj 1 / Not offered 2015 / 12.50 BMEN40002 Biocellular Engineering Research Proj 2 / Not offered 2015 / 25 ELEN40001 Project Work / Not offered 2015 / 25 MCEN40020 Major Project and Professional Practice / Not offered 2015 / 25
Core Participation Requirements:	For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Students Experiencing Academic Disadvantage Policy, academic requirements for this subject are articulated in the Subject Description, Subject Objectives, Generic Skills and Assessment Requirements of this entry. The University is dedicated to provide support to those with special requirements. Further details on

	the disability support scheme can be found at the Disability Liaison Unit website: http://www.services.unimelb.edu.au/disability/
Coordinator:	Assoc Prof Leigh Johnston
Contact:	Assoc Prof Leigh Johnston Email: **l.johnston@unimelb.edu.au (mailto:l.johnston@unimelb.edu.au)**
Subject Overview:	**AIMS** This subject involves undertaking a major research or advanced innovative design project requiring an independent investigation and the preparation of reports on an approved topic. Students will present their findings in a conference presentation format, held at the end of the project cycle in the latter half of semester two. The emphasis of the project can be associated with either: # Explorative approach, where students will pursue outcomes associated with new knowledge or understanding within the biomedical engineering or science disciplines, often as an adjunct to existing academic research initiatives. # A well-defined innovative project, usually based on a research and development required by an external industrial client. Students will be tutored in the synthesis of practical solutions to complex technical problems within a structured working environment, as if they were research and development professional engineers. This subject has been integrated with the Skills Towards Employment Program (STEP) and contains activities that can assist in the completion of the Engineering Practice Hurdle (EPH).
Learning Outcomes:	**INTENDED LEARNING OUTCOMES (ILO)** Having completed this unit the student should be able to: 1 Search, analyse and document engineering science and other relevant literature in order to determine the need for further research in a chosen area 2 Devise a methodology of investigation to improve knowledge or understanding of a chosen topic 3 Collect and analyse a range of data (both qualitative and quantitative) to improve our collective understanding of a chosen topic 4 Write a project report that follows good engineering science practice 5 Present an oral presentation of the findings of an investigation to an audience of peers or lay people.
Assessment:	The Major Project (100% of the overall mark) is made up of: A professional engineering research report of 5,000 words per student, excluding appendices or supporting material that can include diagrams, tables, computations and computer code/output, requiring 210-220 hours of work. A draft of the report is due in week 9 of the final semester (10%). A Final Report is due in week 12 of the final semester (60%). ILOs 1-4 are assessed in this report. A technical oral examination of no more than one half hour duration per student. Technical oral examination includes a formal presentation of 15 minutes per student followed by questions from an academic supervisor and academic examiner, (15%). ILOs 1-3,5 are assessed in this examination. A lay person oral examination of no more than 15 minutes duration, (5%). ILOs 1-3,5 are assessed in this examination. Static display materials (e.g. poster, computer demonstration, prototype), requiring 30-35 hours of work, (10%). ILOs 1-3 are assessed in this component. Intended Learning Outcomes (ILOs) 1, 2 and 3 are assessed in all assessment components. ILO 4 is assessed in the interim and final written reports. ILO5 is assessed in the technical and lay person oral examinations.
Prescribed Texts:	None
Recommended Texts:	None
Breadth Options:	This subject is not available as a breadth subject.

Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	# Ability to undertake problem identification, formulation and solution # Ability to function effectively as an individual and as a member of a collaborative research team # Understanding of the principles of research # Capacity for independent critical thought, rational inquiry and self-directed learning # Openness to new ideas and unconventional critiques of received wisdom.
Notes:	**LEARNING AND TEACHING METHODS** The subject is delivered through two one-hour lectures, and weekly meetings with academic project supervisors. **CAREERS / INDUSTRY LINKS** Exposure to biomedical engineering in industry, hospitals and research laboratories through collaborative projects with external co-supervision arrangements.
Related Majors/Minors/ Specialisations:	Master of Engineering (Biomedical with Business) Master of Engineering (Biomedical)