ELEN90069 Electrical Power Systems

Credit Points:	12.50
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2012, Parkville This subject commences in the following study period/s: Semester 2, Parkville - Taught on campus.
Time Commitment:	Contact Hours: 36 hours Total Time Commitment: 120 hours
Prerequisites:	Enrolment in the Master of Energy Systems.
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	None
Core Participation Requirements:	For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Student Support and Engagement Policy, academic requirements for this subject are articulated in the Subject Overview, Learning Outcomes, Assessment and Generic Skills sections of this entry. It is University policy to take all reasonable steps to minimise the impact of disability upon academic study, and reasonable adjustments will be made to enhance a student's participation in the University's programs. Students who feel their disability may impact on meeting the requirements of this subject are encouraged to discuss this matter with a Faculty Student Adviser and Student Equity and Disability Support: http://services.unimelb.edu.au/disability
Coordinator:	Prof Jamie Evans
Contact:	**jse@unimelb.edu.au (mailto:jse@unimelb.edu.au)**
Subject Overview:	This subject provides an overview of electrical power systems for students without significant background in Electrical Engineering. It will cover the basic elements of electrical power systems including generation, transmission and distribution. Specific topics covered include: # Electrical Network Basics: current, voltage, resistance, analysis of resistive circuits, capacitance, inductance, sinusoidal-steady state analysis # Power System Analysis: AC power, transformers, generators, loads, three-phase systems, power lines, power flow analysis, reliability and stability # Power System Operation: planning, scheduling, distributed generation, electricity markets, smart grid
Objectives:	On completing this subject the student should be able to: • Analyse simple electrical networks using basic device models and circuit theory • Describe the core components of electrical power systems (generation, transmission and distribution) • Describe the main components of the broader power system operations (including scheduling, electricity markets and the smart grid)
Assessment:	• One written examination, not exceeding three hours at the end of semester, worth 60%; • Assessment of team-based project work, not exceeding 20 pages per person in total over the semester, worth 40%.
Prescribed Texts:	Alexandra von Meier, Electric Power Systems: A Conceptual Introduction, Wiley, 2006.
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:	On completion of this subject students should have developed the following generic skills - • Ability to apply knowledge of basic science and engineering fundamentals • Ability to undertake problem identification, formulation and solution • Ability to communicate effectively, with the engineering team and with the community at large • Capacity for independent critical thought, rational inquiry and self-directed learning
Related Course(s):	Master of Energy Systems