

ELEN90022 Quantum Opto-electronics

Credit Points:	12.5
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	This subject is not offered in 2015.
Time Commitment:	Contact Hours: 36 hours of lectures Total Time Commitment: 200 hours
Prerequisites:	Enrolment in a research higher degree(Masters or PhD) in Engineering
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 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/
Contact:	Dr. Marcus Brazil Email: brazil@unimelb.edu.au (mailto:brazil@unimelb.edu.au)
Subject Overview:	<p>AIMS</p> <p>The aim of this subject is to give students an introduction to the theoretical techniques and physical principles required for understanding of photonic systems and applications.</p> <p>INDICATIVE CONTENT</p> <p>Topics include: optical process; quantum mechanical origins of polarisation and photon spin; optical noise.</p>
Learning Outcomes:	<p>Intended Learning Outcomes (ILO)</p> <p>Having completed this subject it is expected that the student be able to:</p> <ol style="list-style-type: none"> 1 Understand photonic systems and applications
Assessment:	Continuous assessment of homework assignments, not exceeding 30 pages in total over the semester, requiring approximately 50-55 hours of work (40%) Final examination, not exceeding three hours at the end of semester (60%) Hurdle requirement: Students must pass the written exam to pass the subject. Intended Learning Outcome (ILO) 1 is assessed in the final exam and through submitted homework assignments.
Prescribed 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:	<ul style="list-style-type: none"> # Ability to apply knowledge of basic science and engineering fundamentals; # In-depth technical competence in at least one engineering discipline; # Ability to undertake problem identification, formulation and solution; # Ability to utilise a systems approach to design and operational performance; # Expectation of the need to undertake lifelong learning, capacity to do so;

	<ul style="list-style-type: none"> # Capacity for independent critical thought, rational inquiry and self-directed learning; # Intellectual curiosity and creativity, including understanding of the philosophical and methodological bases of research activity; # Openness to new ideas and unconventional critiques of received wisdom; # Profound respect for truth and intellectual integrity, and for the ethics of scholarship
Notes:	<p>LEARNING AND TEACHING METHODS</p> <p>The subject is delivered through lectures and homework assignments</p> <p>INDICATIVE KEY LEARNING RESOURCES</p> <p>Students are provided with lecture notes, including worked examples, assignment problems, and recommended reading lists comprising textbooks and journal articles.</p> <p>CAREERS / INDUSTRY LINKS</p> <p>Exposure to research literature and the rigour expected at the level of postgraduate study.</p>
Related Course(s):	<p>Master of Philosophy - Engineering Ph.D.- Engineering</p>