

# ELEN90059 Lightwave Systems

<b>Credit Points:</b>	12.50						
<b>Level:</b>	9 (Graduate/Postgraduate)						
<b>Dates &amp; Locations:</b>	This subject is not offered in 2013.						
<b>Time Commitment:</b>	Contact Hours: 3 one hour lectures per week and one three hour workshop for up to 10 weeks Total Time Commitment: 120 hours						
<b>Prerequisites:</b>	<p>Prerequisite for this subject is:</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>ELEN30011 Electrical Device Modelling</td> <td>Not offered 2013</td> <td>12.50</td> </tr> </tbody> </table> <p>OR</p> <p>Enrolment in Master of Telecommunications Engineering.</p>	Subject	Study Period Commencement:	Credit Points:	ELEN30011 Electrical Device Modelling	Not offered 2013	12.50
Subject	Study Period Commencement:	Credit Points:					
ELEN30011 Electrical Device Modelling	Not offered 2013	12.50					
<b>Corequisites:</b>	None						
<b>Recommended Background Knowledge:</b>	None						
<b>Non Allowed Subjects:</b>	<p>Anti-requisite for this subject is:</p> <p><b><u>ELEN40009(431-466) RF, Microwave and Optoelectronics (../view/2010/ELEN40009)</u></b></p>						
<b>Core Participation Requirements:</b>	<p>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: <a href="http://www.services.unimelb.edu.au/disability/">http://www.services.unimelb.edu.au/disability/</a></p>						
<b>Contact:</b>	<p>Prof Ampalavanapillai Nirmalathas</p> <p>Email: <a href="mailto:nirmalat@unimelb.edu.au">nirmalat@unimelb.edu.au</a> (<a href="mailto:nirmalat@unimelb.edu.au">mailto:nirmalat@unimelb.edu.au</a>)</p>						
<b>Subject Overview:</b>	<p>This subject will explore the physical principles and issues that arise in the design of lightwave systems. Students will study topics from: Transmission of light over wave guides; production of light by lasers; light modulation; conversion of light signals to electrical signals; optical multiplexing and demultiplexing; light amplification; dispersion and dispersion compensation; optical nonlinearities; modulation and advanced detection schemes. This material will be complemented by exposure to lightwave systems and measurement techniques in the laboratory.</p>						
<b>Objectives:</b>	<p>On completing this subject the student should be able to:</p> <ul style="list-style-type: none"> <li># Explain the operation of lightwave systems in terms of the underlying physical principles;</li> <li># Quantitatively model and assess the performance of a lightwave system;</li> <li># Conduct laboratory experiments involving lightwave devices in the laboratory.</li> </ul>						
<b>Assessment:</b>	<p>One written examination, not exceeding three hours at the end of semester, worth 70% (must pass written exam to pass subject); Continuous assessment of submitted project work, not exceeding 30 pages over the semester, worth 30%.</p>						
<b>Prescribed Texts:</b>	TBA						

<b>Recommended Texts:</b>	None
<b>Breadth Options:</b>	This subject is not available as a breadth subject.
<b>Fees Information:</b>	Subject EFTSL, Level, Discipline & Census Date, <a href="http://enrolment.unimelb.edu.au/fees">http://enrolment.unimelb.edu.au/fees</a>
<b>Generic Skills:</b>	<ul style="list-style-type: none"> <li># Ability to apply knowledge of basic science and engineering fundamentals</li> <li># In-depth technical competence in at least one engineering discipline</li> <li># Ability to undertake problem identification, formulation and solution</li> <li># Ability to utilise a systems approach to design and operational performance</li> <li># Capacity for independent critical thought, rational inquiry and self-directed learning</li> <li># Ability to communicate effectively, with the engineering team and with the community at large</li> </ul>
<b>Notes:</b>	Credit may not be obtained for both ELEN40009(431-466) RF, Microwave and Optoelectronics and ELEN90059 Lightwave Systems
<b>Related Course(s):</b>	Bachelor of Engineering (Electrical Engineering) Bachelor of Engineering (Electrical) and Bachelor of Arts Bachelor of Engineering (Electrical) and Bachelor of Commerce Bachelor of Engineering (EngineeringManagement) Electrical Master of Telecommunications Engineering Postgraduate Certificate in Engineering
<b>Related Majors/Minors/ Specialisations:</b>	B-ENG Electrical Engineering stream Master of Engineering (Electrical)