

431-625 Internet Engineering

Credit Points:	12.50
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2009, This subject commences in the following study period/s: Semester 1, - Taught on campus. Semester 2, - Taught on campus. On Campus.
Time Commitment:	Contact Hours: 36 Total Time Commitment: Estimated total time commitment of 120 hours.
Prerequisites:	4-year Electrical Engineering degree or equivalent.
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	None
Core Participation Requirements:	<p><p>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.</p> <p>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</p></p>
Coordinator:	Dr Robert Edwin Warfield
Subject Overview:	<p>Subject content will include:</p> <ul style="list-style-type: none"> # Basic principles of packet switched networking, from the transmission of data over a physical channel through to current and emerging applications on TCP/IP networks. # Application of technologies to form Local-, Metro-, and Wide-Area-Networks. # The Internetworking Protocol: standard format of a datagram, addressing and routing, fragmentation and reassembly, best-effort service, IPv6. # Transport Layer protocols: TCP and UDP. Connection-orientated, reliable service with flow control and congestion avoidance, and connectionless unreliable service. # Network Management, including the overall framework of responsibilities for managing networks, and the SNMP framework for managing TCP/IP networks. # Performance and applications over public and private TCP/IP networks, including: voice and other real-time services; serving web resources; and large file transfer. # Security requirements and solutions, including the management of confidentiality, integrity, and availability. Basic cryptographic principles and applied to Internetworks. # Client-server interaction and the socket interface. # Domain Name System, including the registration of domain names and the real-time translation to IP addresses. # File transfer applications including FTP, TFTP, and current applications including streaming and push technologies. # Email, including the choice of protocols and management of SPAM. # The World Wide Web: static, dynamic, and active content, and transfer of resources by the http protocol.
Objectives:	This subject will help students to gain comprehensive understanding of Internet protocols and how they can be applied to meet customer requirements. The aim is to help students prepare themselves for a responsible position in industry.

Assessment:	Assessment will be based on a Project (group work) and a Final Examination. Group Seminar on Project 5% (group mark) Written Report on Project. Maximum 1500 words per student. 25% (group mark) Formally supervised written examination - 3 hours 70% (end of semester). This final exam is a hurdle. A student must pass the exam to pass the subject.
Prescribed Texts:	The use of either one of the following two text books is recommended. Either book will provide a foundation for the course, and a useful reference for the future: Behrouz A. Forouzan, "TCP/IP Protocol Suite" Second Edition Mc Graw Hill, 2003 OR Douglas E. Comer and Ralph Droms, "Computer Networks and Internets", Prentice Hall (last edition is 4th)
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:	<p>On completion of this subject, the students should have developed:</p> <ol style="list-style-type: none"> 1 Problem-solving abilities in the discipline area, characterised by flexibility of approach. 2 An advanced understanding of the changing knowledge base in the specialist area. 3 An appreciation of customer requirements, and an understanding of how to deliver a comprehensive solution that is based on requirements. 4 An ability to evaluate and synthesise the research and professional literature in the discipline, particularly from the Internet itself. 5 An appreciation of the ways in which advanced knowledge equips the student to offer leadership in the specialist area. 6 A capacity to articulate their knowledge and understanding in spoken and written presentations. 7 The capacity to value and participate in projects which require team-work. 8 A capacity to manage competing demands on time, including self-directed project work.
Related Course(s):	<p>Master of Software Systems Engineering</p> <p>Master of Telecommunications Engineering</p>