COMP90007 Internet Technologies

Credit Points:	12.5
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2016, Parkville This subject commences in the following study period/s: Semester 1, Parkville - Taught on campus. Semester 2, Parkville - Taught on campus.
Time Commitment:	Contact Hours: 3 hours per week Total Time Commitment: 200 hours
Prerequisites:	None
Corequisites:	None
Recommended Background Knowledge:	Basic proficiency in mathematics and computing.
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:	Assoc Prof Udaya Parampalli, Dr Masud Moshtaghi
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Subject Overview:	**AIMS** The subject will introduce the basics of computer networks to students through a study of layered models of computer networks and applications. The first half of the subject deals with data communication protocols in the lower layers of OSI and TCP/IP reference models. The students will be exposed to the working of various fundamental networking technologies such as wireless, LAN, RFID and sensor networks. The second half of the subject deals with the upper layers of the TCP/IP reference model through a study of several Internet applications. **INDICATIVE CONTENT** Topics covered include: Introduction to Internet, OSI reference model layers, protocols and services, data transmission basics, interface standards, network topologies, data link protocols, message routing, LANs, WANs, TCP/IP suite, detailed study of common network applications (e.g., email, news, FTP, Web), network management, current and future developments in network hardware and protocols.
Learning Outcomes:	**INTENDED LEARNING OUTCOMES (ILO)** On completion of this subject the student is expected to: 1 To develop an understanding of network technologies and applications

	2 To be able to use correct terminology within the domain of computer networks 3 To be able to conceptualise and explain the functionality of the different layers within a network architecture 4 To be able to explain the architecture and operation of the Internet
Assessment:	Project work that involves two components: Two equally weighted homework assignments done individually with a total of about 800 words due around Week 3 and Week 7, requiring approximately 15 - 17 hours of work (15%) A 10-minute presentation given by a group working in pairs due around week 11, requiring approximately 13 - 15 hours of work (10%) and a 2000-word report about a current research topic or technology in networks written by a group working in pairs, requiring approximately 15-20 hours of work each (15%) due in week 12 A 3-hour written examination at the end of the semester (60%). Hurdle requirement: To pass the subject, students must obtain at least: 50% overall 7.5/15 in the homework assignments 12.5/25 in the group-based work 30/60 in the end-of-semester written examination. Intended Learning Outcomes (ILOs) 1 to 4 are addressed in the examination and the two assignments. ILOs 3 and 4 and the generic skills are addressed in the project work. Assignment 1 and 2 tests the knowledge of the core modules of the subject topic introduced in lectures. They are generally extensions of tutorial questions. The knowledge earned during the semester is finally tested in 3 hour examination. The project work, done in a group of two students, tests research and presentation skills.
Prescribed Texts:	Tanenbaum, Andrew S. Computer Networks, 4th edition, Prentice Hall
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 completing this subject, students should have the following skills: # Be able to undertake problem identification, formulation and solution # Have a capacity for independent critical thought, rational inquiry and self-directed learning # Have a profound respect for truth and intellectual integrity, and for the ethics of scholarship.
Notes:	**LEARNING AND TEACHING METHODS** The subject will be delivered through a combination of lectures and workshops. Students will also complete two assignments and a research project which will reinforce the material covered in lectures. **INDICATIVE KEY LEARNING RESOURCES** At the beginning of the year, the coordinator will propose a textbook on fundamental networking and will be made available through University Book Shop and library. The current suggested textbook is Computer Networks (5th edition), Andrew Tanenbaum and David Wetherall, Prentice Hall, 2011. **CAREERS / INDUSTRY LINKS** This knowledge and skills learned in the subject forms a basis of many professional careers such as practicing engineers, consultants and Information Technology specialists. There will be one or two lectures from invited practitioners from industry.
Related Course(s):	Doctor of Philosophy - Engineering Master of Information Technology Master of Philosophy - Engineering
Related Majors/Minors/ Specialisations:	MIT Computing Specialisation MIT Distributed Computing Specialisation MIT Health Specialisation MIT Spatial Specialisation Master of Engineering (Mechatronics) Master of Engineering (Software with Business) Master of Engineering (Software)