

433-654 Sensor Networks and Applications

Credit Points:	12.50
Level:	9 (Graduate/Postgraduate)
Time Commitment:	Contact Hours: 24 hours of lectures, 12 hours of tutorial/laboratory classes; Non-contact time commitment: 84 hours Total Time Commitment: Not available
Prerequisites:	433-652: Distributed Systems
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>
Subject Overview:	Topics covered include: Introduction to sensor networks, attributes of sensor networks, wired and wireless sensors, sensors and networks design and deployment issues, bandwidth and energy constraints aware techniques for network discovery, network control and routing, collaborative information processing, offloading processing and data management tasks to computational grids, querying, and tasking, programming sensor networks, standards such as Sensor ML that provides the models and XML schema encoding for defining the geometric, dynamic and observational characteristics of a sensor, and applications in infrastructure security, environment and habitat monitoring, industrial sensing, traffic control, etc.
Objectives:	<p>On successful completion, students should:</p> <ul style="list-style-type: none"> # have developed an understanding of sensor network technologies from three different perspectives: sensing, communication, and computing (including hardware, software, and algorithms) and their applications having potential to transform natural science, engineering, and social science disciplines; # be able to undertake problem identification, formulation and solution; # have a capacity for independent critical thought, rational inquiry and self-directed learning; and # have a profound respect for truth and intellectual integrity, and for the ethics of scholarship.
Assessment:	Term paper of 1000 words and presentation on selected topics in sensor networks during semester (10%), project work during semester (30%) and a written 3-hour examination (60%). All components must be completed satisfactorily to pass the subject.
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:	<p>On completion of this subject students should:</p> <ul style="list-style-type: none"> # be able to undertake problem identification, formulation and solution.
Related Course(s):	Master of Engineering in Distributed Computing Master of Information Technology