

# COMP90017 Sensor Networks and Applications

<b>Credit Points:</b>	12.50
<b>Level:</b>	9 (Graduate/Postgraduate)
<b>Dates &amp; Locations:</b>	This subject is not offered in 2014.
<b>Time Commitment:</b>	Contact Hours: 3 hours contact per week. Total Time Commitment: 200 hours
<b>Prerequisites:</b>	None
<b>Corequisites:</b>	None
<b>Recommended Background Knowledge:</b>	None
<b>Non Allowed Subjects:</b>	None
<b>Core Participation Requirements:</b>	<p>&lt;p&gt;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.&lt;/p&gt;         &lt;p&gt;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: &lt;a href="http://services.unimelb.edu.au/disability"&gt;http://services.unimelb.edu.au/disability&lt;/a&gt;&lt;/p&gt;</p>
<b>Contact:</b>	email: <a href="mailto:etanin@unimelb.edu.au">etanin@unimelb.edu.au</a> (mailto:etanin@unimelb.edu.au)
<b>Subject Overview:</b>	<p><b>AIMS</b></p> <p>Sensor networks are a key component of today's increasingly pervasive computing technologies. In this subject, the aim is to develop an understanding of sensor network technologies from three different perspectives: sensing, communication, and computing (including hardware, software, and algorithms) and their applications.</p> <p><b>INDICATIVE CONTENT</b></p> <p>Topics covered include:</p> <ul style="list-style-type: none"> <li># Attributes of sensor networks</li> <li># Wired and wireless sensors</li> <li># Sensors and networks design and deployment issues</li> <li># Bandwidth and energy constraints aware techniques for network discovery</li> <li># Network control and routing</li> <li># Collaborative information processing</li> <li># Offloading processing and data management tasks, querying</li> <li># Tasking and programming sensor networks</li> <li># Standards that provide the models and schema encoding for defining the geometric, dynamic and observational characteristics of a sensor, and</li> <li># Applications</li> </ul>
<b>Learning Outcomes:</b>	<p><b>INTENDED LEARNING OUTCOMES (ILO)</b></p> <p>On completion of this subject the student is expected to:</p> <ol style="list-style-type: none"> <li>1 Develop an understanding of sensor network technologies from three different perspectives: sensing, communication, and computing (including hardware, software, and algorithms) and their applications</li> </ol>

	2 Discuss and present new sensor network technologies in oral and written form
<b>Assessment:</b>	One project requiring 30 hours (worth 20%) due around week 12 One 10 minute presentation and a term paper (1000 words) which together worth 20% due in week 10 or 11 One 3-hour examination (worth 60%) held at the end of semester Intended Learning Outcome (ILO) 1 is assessed by all the components. ILO 2 is assessed by the project and term presentation/paper components. All components should be completed satisfactorily to obtain a passing mark in this subject.
<b>Prescribed 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>	On completion of this subject students should have the following skills: <ul style="list-style-type: none"> <li># Ability to undertake problem identification, formulation and solution</li> <li># Capacity for independent critical thought, rational inquiry and self-directed learning</li> <li># Profound respect for truth and intellectual integrity, and for the ethics of scholarship</li> </ul>
<b>Notes:</b>	<p><b>LEARNING AND TEACHING METHODS</b></p> <p>The subject will be delivered through a combination of lectures, tutorials, student presentations. Students will write a report about emerging sensing technologies and complete a project.</p> <p><b>INDICATIVE KEY LEARNING RESOURCES</b></p> <p>The subject access a number of recent scholarly papers in the area which are presented through lecture slides. Papers are made available through LMS to the students.</p> <p><b>CAREERS / INDUSTRY LINKS</b></p> <p>Sensor networks are an emerging area in multiple fronts in information and communication technologies, these include but are not limited to environmental and habitat monitoring, infrastructure security, emergency response, transportation and traffic management. The subject hosts industry partners to give invited talks during lecture time such as the Daintree Networks located in Victoria.</p>
<b>Related Course(s):</b>	Master of Engineering in Distributed Computing Master of Information Technology Master of Information Technology Master of Information Technology Master of Philosophy - Engineering Master of Science (Computer Science) Master of Software Systems Engineering Ph.D.- Engineering
<b>Related Majors/Minors/Specialisations:</b>	Computer Science Master of Engineering (Software)