

## COMP90044 Research Methods

<b>Credit Points:</b>	12.50
<b>Level:</b>	9 (Graduate/Postgraduate)
<b>Dates &amp; Locations:</b>	2014, Parkville This subject commences in the following study period/s: Semester 2, Parkville - Taught on campus.
<b>Time Commitment:</b>	Contact Hours: 36 hours, comprising of one 3-hour lecture per week Total Time Commitment: 200 hours
<b>Prerequisites:</b>	Completion of 50 points of third year computing study or equivalent or enrolment in a Masters degree
<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>Coordinator:</b>	Prof James Bailey
<b>Contact:</b>	email: <a href="mailto:baileyj@unimelb.edu.au">baileyj@unimelb.edu.au</a> (mailto:baileyj@unimelb.edu.au)
<b>Subject Overview:</b>	<p><b>AIM</b></p> <p>“The aim of scientific research is to produce new knowledge. To be useful, new knowledge must be able to stand up to critical scrutiny, and its presentation to other researchers and/or to the public must be persuasive. This subject is an introduction to the processes of science as they apply to computing and related disciplines, including designing experiments, locating relevant literature, writing papers, giving presentations and refereeing. Underlying all of these, the subject will foster the development of critical thinking, a skeptical, scientific perspective, and scientific ethics. This subject will be particularly useful for students contemplating undertaking a research degree, or for students currently enrolled in a research degree (MPhil or PhD).”</p> <p><b>INDICATIVE CONTENT</b></p> <p>Introduction to research methods and being a researcher; research writing; reviewing and refereeing; reading and assessing literature; research planning; empirical methods; research presentations; statistical methods; ethics.</p>
<b>Learning Outcomes:</b>	<p><b>INTENDED LEARNING OUTCOMES (ILO)</b></p> <p>Having completed this unit the student is expected to:</p> <ol style="list-style-type: none"> <li>1. Explain the principles of scientific research</li> <li>2. Describe and appreciate the roles of rigour and skepticism in producing results of high impact</li> <li>3. Explain the ethical guidelines governing academic research</li> </ol>

	4. Demonstrate knowledge of and experience in research planning, analysis of research, experimental methods and written and spoken communication
<b>Assessment:</b>	A 1500 word literature review on a chosen research topic (30%), addressing Intended Learning Outcome (ILO) 2 and ILO 4, first draft due in approximately week 5 and second draft due in approximately week 8 A 10 minute presentation on a research topic (20%), addressing ILO 1 and ILO 4, to be delivered in approximately week 12 A 1000 word research plan, focusing on research questions with justifications and discussion of plausible outcomes (20%), addressing ILO 1 and ILO 3 and ILO 4, due in approximately week 10 An 1000 word experimental design to test a hypothesis (10%), addressing ILO 2 and ILO 3 and ILO 4, due in approximately week 12 A 1500 word research paper review (20%), addressing ILO 2 and ILO 4, due in approximately week 7 To pass the subject, students must obtain at least 50% overall
<b>Prescribed Texts:</b>	Zobel, Justin, <i>Writing for Computer Science</i> , second edition, Springer
<b>Recommended Texts:</b>	Zobel, Justin, <i>Writing for Computer Science</i> , second edition, Springer. <i>"Evans, Gruba, Zobel, 'How To Write A Better Thesis', 3rd Edition, Melbourne University Press, 2011"</i>
<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># Ability to utilise a systems approach to complex problems and to design and operational performance</li> <li># Ability to manage information and documentation</li> <li># Capacity for creativity and innovation</li> <li># Ability to communicate effectively both with the engineering team and the community at large</li> </ul>
<b>Notes:</b>	<p><b>LEARNING AND TEACHING METHODS</b></p> <p>The subject will comprise a mixture of lectures and workshops (3 hours each week). A significant amount of project work is assigned throughout the semester.</p> <p><b>INDICATIVE KEY LEARNING RESOURCES</b></p> <p>Evans, D. and Gruba, P. and Zobel, J. "How to Write a Better Thesis", 3rd edition, Melbourne University Press, 2011</p> <p>Zobel, J. "Writing for Computer Science", 2nd edition, Springer, 2004.</p> <p><b>CAREERS / INDUSTRY LINKS</b></p> <p>The subject will provide students with a greater awareness about pathways to and practice for a career in industrial or academic research.</p>
<b>Related Course(s):</b>	Master of Philosophy - Engineering Master of Science (Computer Science) Ph.D.- Engineering
<b>Related Majors/Minors/Specialisations:</b>	B-ENG Software Engineering stream Computer Science Master of Engineering (Software with Business) Master of Engineering (Software)