

# MAST90050 Scheduling and Optimisation

<b>Credit Points:</b>	12.5						
<b>Level:</b>	9 (Graduate/Postgraduate)						
<b>Dates &amp; Locations:</b>	This subject is not offered in 2015.						
<b>Time Commitment:</b>	Contact Hours: One 2-hour lecture per week and one 1-hour computer lab/practical class per week. Total Time Commitment: 170 hours						
<b>Prerequisites:</b>	<p>The following subject, or equivalent:</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>MAST90014 Optimisation for Industry</td> <td>Semester 1</td> <td>12.50</td> </tr> </tbody> </table>	Subject	Study Period Commencement:	Credit Points:	MAST90014 Optimisation for Industry	Semester 1	12.50
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MAST90014 Optimisation for Industry	Semester 1	12.50					
<b>Corequisites:</b>	None						
<b>Recommended Background Knowledge:</b>	None						
<b>Non Allowed Subjects:</b>	None						
<b>Core Participation Requirements:</b>	For the purposes of considering requests for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Students Experiencing Academic Disadvantage Policy, academic requirements for this subject are articulated in the Subject Description, Subject Objectives, Generic Skills and Assessment Requirements for this entry. The University is dedicated to provide support to those with special requirements. Further details on the disability support scheme can be found at the Disability Liaison Unit website: <a href="http://www.services.unimelb.edu.au/disability/">http://www.services.unimelb.edu.au/disability/</a>						
<b>Contact:</b>	Email: <a href="mailto:taylorpg@unimelb.edu.au">taylorpg@unimelb.edu.au</a>						
<b>Subject Overview:</b>	Scheduling is critical to manufacturing, mining, and logistics, and is of increasing importance in healthcare and service industries. Most automated systems, ranging from elevators to industrial robots, embed some kind of scheduling algorithms. Building on the Optimisation background provided in Optimisation for Industry, this subject teaches students how to solve more advanced problems. A particular focus will be scheduling problems, but other more general assignment problems will be discussed.						
<b>Learning Outcomes:</b>	<p>After completing this subject, students will:</p> <ul style="list-style-type: none"> <li># be able to use advanced mathematical and computing techniques to model scheduling problems;</li> <li># know how to develop effective mathematical methods of scheduling;</li> <li># learn how to apply such methods in important real-life situations;</li> <li># gain the ability to pursue further studies in this and related areas.</li> </ul>						
<b>Assessment:</b>	Up to 60 pages of written assignments (60%: two assignments worth 30% each, due mid and late in semester), a 2-hour written examination (40%, in the examination period).						
<b>Prescribed Texts:</b>	TBA						
<b>Recommended Texts:</b>	TBA						
<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>	<p>In addition to learning specific skills that will assist students in their future careers in science, they will have the opportunity to develop generic skills that will assist them in any future career path. These include:</p> <ul style="list-style-type: none"> <li># problem-solving skills: the ability to engage with unfamiliar problems and identify relevant solution strategies;</li> <li># analytical skills: the ability to construct and express logical arguments and to work in abstract or general terms to increase the clarity and efficiency of analysis;</li> <li># collaborative skills: the ability to work in a team;</li> <li># time-management skills: the ability to meet regular deadlines while balancing competing commitments.</li> </ul>
<b>Related Course(s):</b>	<p>Master of Operations Research and Management Science  Master of Philosophy - Engineering  Master of Science (Mathematics and Statistics)  Ph.D.- Engineering</p>
<b>Related Majors/Minors/ Specialisations:</b>	<p>Mathematics and Statistics</p>