

## 421-696 Structures for Blast, Impact and Fire

<b>Credit Points:</b>	12.500
<b>Level:</b>	Graduate/Postgraduate
<b>Dates &amp; Locations:</b>	2008, This subject commences in the following study period/s: Semester 1, - Taught on campus.
<b>Time Commitment:</b>	Contact Hours: 36 hours; Non-contact time commitment: 84 hours Total Time Commitment: Not available
<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; <p>&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> </p>
<b>Subject Overview:</b>	This subject introduces students to advanced protective technologies and special requirements necessary for the successful design of building structures against extreme loading such as blast, impact and fire. Topics covered include: hazard sources and physical phenomena of blasts, impacts and fires, concepts of impulsive loading, behaviour of structural elements subjected to these extreme loadings, medium-structure interaction, dynamic responses of structural systems, design considerations and protective technologies for hardened facilities.
<b>Assessment:</b>	One three-hour examination (70%) and one assignment of 3000 words equivalent (30%).
<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>	<p>On successful completion, students should be able to:</p> <ul style="list-style-type: none"> <li># understand the physical phenomena of blast, impact and fire</li> <li># calculate the extreme loads on structures including blast and impact loads and temperature distribution due to fires</li> <li># model blast wave propagation and blast-structure interaction</li> <li># calculate the dynamic responses of structural elements subject to blast and impact</li> <li># calculate temperature distribution and its effects on structural properties</li> <li># develop computer models and introduce the use of explicit FE code for dynamic analysis of structural systems in buildings, subjected to blast and impact loading</li> <li># design the structural connections for extreme blast and impact loads</li> <li># identify advanced materials for improving protection of structures</li> <li># design structures to prevent progressive collapse</li> <li># identify the protective measures that should be considered in retrofitting or planning a facility which may be exposed to extreme loads</li> </ul>

<b>Related Course(s):</b>	Master of Engineering Structures Master of Utilities Management
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