



UNIVERSITI TEKNOLOGI MARA

**AAR653: STEEL STRUCTURES AND FOUNDATION**

<b>Course Name (English)</b>	STEEL STRUCTURES AND FOUNDATION <b>APPROVED</b>
<b>Course Code</b>	AAR653
<b>MQF Credit</b>	2
<b>Course Description</b>	This course comprises two areas of study. The first part covers topics on steel structures and other composite structures which are commonly applied in more innovative structures or buildings. The second part is the study on soil mechanics, design of foundations and earth retaining structures.
<b>Transferable Skills</b>	Systematically Inquisitive Expert in Field
<b>Teaching Methodologies</b>	Lectures, Tutorial
<b>CLO</b>	CLO1 Discuss the application of steel work and foundation in building construction. CLO2 Apply the understanding of structural response and behaviour of steel structures and foundation.
<b>Pre-Requisite Courses</b>	No course recommendations
<b>Topics</b>	
<b>1. Introduction</b> 1.1) Applications and innovative use of steel and composite structures in building. 1.2) General principles of limit states	
<b>2. Structural response</b> 2.1) Member behavior; tension, compression, bending, shear, torsion, web openings and local buckling 2.2) Frame behavior and stability in space 2.3) Classes of sections 2.4) Co-ordination of design and detailing	
<b>3. Structural Behavior</b> 3.1) Lateral restrained beams (Universal, compound and plate girder) 3.2) Compression members, plate truss, frames and connections	
<b>4. Soil Mechanics</b> 4.1) Classification and identification properties of soil 4.2) Shear strength of soils 4.3) Bearing capacity of soils	
<b>5. Earth retaining structures and basement wall designs</b> 5.1) Types of earth retaining structures	
<b>6. Foundation design</b> 6.1) Shallow foundation 6.2) Deep foundation and piling	

Assessment Breakdown	%
Continuous Assessment	40.00%
Final Assessment	60.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Test	n/a		40%

Reading List	Reference Book Resources
	<ul style="list-style-type: none"> <li>• J.C.McCormac 2008, <i>Structural steel design</i>, Prentice Hall</li> <li>• Budhu,M. 2007, <i>Soil Mechanics and Foundations</i>, USA: John Wiley &amp; Sons, Inc</li> <li>• Aysen,A. 2002, <i>Soil Mechanics: Basic Concept and Engineering</i> Lise,A.A Balkema</li> <li>• Jones, C.J 1994, <i>Site Investigation Practice</i>, London, E. &amp; F.N. Spoon</li> <li>• Tomlison,M.J. 1993, <i>Pile Design and Construction Practice</i>, London, E. &amp; F.N. Spoon</li> </ul>

<b>Article/Paper List</b>	This Course does not have any article/paper resources
<b>Other References</b>	This Course does not have any other resources