



UNIVERSITI TEKNOLOGI MARA

**BCT523: STRUCTURAL DESIGN**

<b>Course Name (English)</b>	STRUCTURAL DESIGN <b>APPROVED</b>
<b>Course Code</b>	BCT523
<b>MQF Credit</b>	3
<b>Course Description</b>	This course covers design of reinforced concrete and steel structures in accordance to relevant design standards. Emphasis is on basic structural elements.
<b>Transferable Skills</b>	understand concept of structural design and able to do design of basic structural steel and reinforced concrete.
<b>Teaching Methodologies</b>	Lectures, Tutorial
<b>CLO</b>	CLO1 Describe the basic concept in structural design in accordance with relevant standard CLO2 Determine suitable design of reinforced concrete and structural steel elements in accordance with relevant standards CLO3 Demonstrate teamwork skills in structural design according to the relevant standards of building structure
<b>Pre-Requisite Courses</b>	No course recommendations
<b>Topics</b>	
<b>1. Reinforced concrete design</b> 1.1) Introduction 1.2) Structural design 1.3) rectangular beam sections in bending and shear 1.4) singly reinforced beams 1.5) doubly reinforced beams 1.6) 1-way spanning solid slabs 1.7) 2-way spanning solid slabs 1.8) staircase 1.9) short column design 1.10) axially loaded pad footing design	
<b>2. Structural Steel Design</b> 2.1) Introduction 2.2) Structural Design 2.3) design of laterally restrained and unrestrained steel beams 2.4) columns ( axially loaded column only ) 2.5) steel connections (bolt and welding )	

Assessment Breakdown	%
Continuous Assessment	100.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Assignment	n/a	20%	CLO2
	Group Project	written report 20% presentation 20%	40%	CLO3
	Quiz	n/a	20%	CLO1
	Test	n/a	20%	CLO2

Reading List	Recommended Text	<ul style="list-style-type: none"> <li>Arya, C. 2009, <i>Design of Structural Elements</i>, 3rd Ed., Spon Press UK.</li> </ul>
	Reference Book Resources	<ul style="list-style-type: none"> <li>McKenzie, W., M., C 2003, <i>Design of Structural Elements</i>, Palgrave Macmillan UK.</li> <li>Dennis Lam 2006, <i>Structural Steelwork</i>, 3rd Ed., Elsevier Great Britain</li> </ul>
Article/Paper List	This Course does not have any article/paper resources	
Other References	This Course does not have any other resources	