



UNIVERSITI TEKNOLOGI MARA

WTE259: WOOD MECHANIC AND STRUCTURE

Course Name (English)	WOOD MECHANIC AND STRUCTURE APPROVED
Course Code	WTE259
MQF Credit	3
Course Description	This course aim is giving student the understanding of wood as a structural material. It involves problem solving skills on the mechanical properties and their basic concept used in timber design and construction.
Transferable Skills	Students will be able to determine the structural beam stability and calculate the forces needed to move an object.
Teaching Methodologies	Lectures, Blended Learning, Discussion, Small Group Sessions
CLO	CLO1 Classify the concepts and principles related to wood mechanic and structure. CLO2 Identify the problems in wood mechanic and structure based on selected topics. CLO3 Determine the bending moment and parallelogram problems in wood mechanic and structure.
Pre-Requisite Courses	No course recommendations
Topics	
1. 1.0 Wood Behaviour 1.1) 1.1 Physical properties of wood 1.2) 1.2 Mechanical properties of wood 1.3) 1.3 Properties affecting strength of wood	
2. 2.0 Wood Structure and Design 2.1) 2.1 Structural wood system 2.2) 2.2 Structural component	
3. 3.0 Principle of Static 3.1) 3.1 Force concept 3.2) 3.2 Resultant force 3.3) 3.3 Parallelogram force 3.4) 3.4 Component vector	
4. 4.0 Wood Properties 4.1) 4.1 Stress and strain 4.2) 4.2 Bending stress 4.3) 4.3 Tensile stress 4.4) 4.4 Column design 4.5) 4.5 Mode of failure	
5. 5.0 Wood Joints 5.1) 5.1 Glue and fastener 5.2) 5.2 Connector systems	
6. 6.0 Loads Design 6.1) 6.1 Dead load 6.2) 6.2 Live load 6.3) 6.3 Combination load 6.4) 6.4 Load duration	

Assessment Breakdown	%
Continuous Assessment	100.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Assignment	Discussion and exercise on the calculation methods from past year questions.	20%	CLO2
	Discussion	Forum Discussion	20%	CLO2
	Online Quiz	Quiz 1	10%	CLO1
	Online Quiz	Quiz 2	10%	CLO1
	Test	Test 1	20%	CLO3
	Test	Test 2	20%	CLO3

Reading List	Recommended Text	<ul style="list-style-type: none"> University of Cambridge Notes, <i>The structure and mechanical behaviour of wood</i> http://www.doitpoms.ac.uk/tlplib/wood/printall.php
	Reference Book Resources	<ul style="list-style-type: none"> Jozef Kudela, Rastislav Lagana (eds.) 2010, <i>Wood Structure and Properties</i>, Arbora Publisher Zvolen, Slovakia. [ISBN: 978-80-968868] Roger M. Rowell (ed.) 2013, <i>Handbook of Wood Chemistry and Wood Composites</i>, Taylor and Francis Group. [ISBN: 978-1-4398-53] Etele Csanady, Endre Magoss, 2013, <i>Mechanics of Wood Machining</i>, Springer-Verlag Berlin Heidelberg [ISBN: 978-3-642-299]
Article/Paper List	This Course does not have any article/paper resources	
Other References	This Course does not have any other resources	