



UNIVERSITI TEKNOLOGI MARA

ARK583: STRUCTURES IV

Course Name (English)	STRUCTURES IV APPROVED
Course Code	ARK583
MQF Credit	2
Course Description	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.
Transferable Skills	Demonstrate ability to investigate problems and provide effective solutions. Demonstrate professional skills, knowledge and competencies.
Teaching Methodologies	Lectures, Tutorial
CLO	CLO1 • Identify the application of steelwork in building construction. (C1) CLO2 • Analyse the structural behavior of steel structures. (C4) CLO3 • Explain the behavior of soil in relation to foundation. (C2) CLO4 • Identify factors that affect choice of foundation. (C1)
Pre-Requisite Courses	No course recommendations
Topics	
1. 1. Introduction 1.1) Applications and innovative use of steel and composite structures in building. 1.2) General principles of limit states	
2. 2. Structural Response 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 construction. 2.4) Co-ordination of design and detailing.	
3. 3. Structural Behavior 3.1) Lateral restrained beams (Universal, compound and plate girder). 3.2) Compression members, plate truss, frames and connections.	
4. 4. Soil Mechanics 4.1) Classification and identification properties of soil. 4.2) Shear strength of soils. 4.3) Bearing capacity of soils.	
5. 5. Earth retaining structures 5.1) Types of earth retaining structures	
6. 6. Foundation design 6.1) Introduction to 6.2) Shallow foundation. 6.3) 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	20%	CLO1 , CLO2 , CLO3 , CLO4
	Test	n/a	20%	CLO1 , CLO2 , CLO3 , CLO4

Reading List	This Course does not have any book resources
Article/Paper List	This Course does not have any article/paper resources
Other References	This Course does not have any other resources