UNIVERSITI TEKNOLOGI MARA

AAR603: REINFORCED CONCRETE STRUCTURES

Course Name (English)	REINFORCED CONCRETE STRUCTURES APPROVED
Course Code	AAR603
MQF Credit	2
Course Description	A further study on structural behaviour, analysis of individual components and design of reinforced concrete structures. It also investigates the principles of pre-stressed concrete technology and design.
Transferable Skills	Systematically Inquisitive Expert in Field
Teaching Methodologies	Lectures, Tutorial
CLO	CLO1 Discuss the application of reinforced concrete in building construction. CLO2 Apply the understanding of material properties, structural behaviour, bending moment and shear force in RC and pre-stressed concrete.
Pre-Requisite Courses	No course recommendations

Topics
1. Structural behaviour and properties of material (concrete and steel) 1.1) Analysis and design of simple structures (ultimate and serviceability limit state) 1.2) Beams; design rectangular beam (tension and compression bar) slabs and columns.
2. Analysis and design of simple structures (ultimate and serviceability limit state) 2.1) Beams; design rectangular beam (tension and compression bar) slabs and columns.
3. Analysis and design of simple structures (ultimate and serviceability limit state) 3.1) Theory of a solid slabs design
4. Analysis and design of simple structures (ultimate and serviceability limit state) 4.1) Theory of a column design; short and slender columns.
5. Pre-stress concrete 5.1) Design approach and basic concepts 5.2) Materials, methods, etc.
6. Design principles 6.1) Principle of span, width and sizes of columns and beams 6.2) Principle of structural layout of simple in-situ R.C. frame construction

Assessment Breakdown	%
Continuous Assessment	40.00%
Final Assessment	60.00%

Details of Continuous Assessment

Assessment Type	Assessment Description	% of Total Mark	CLO
Test	Assessment on the understanding of the application of reinforced concrete in building construction, material properties, structural behaviour, bending moment and shear force in RC and pre-stressed concrete.	40%	CLO1

Reading List

Reference Book Resources

- **Macdonald, A.J 2001, *Structures and Architecture*, Oxford, Architecture Press**
- **Arya C. 1993, *Design of Structural Elements.*, London, E. & F.N. Spoon**
- **White G.R. 1991, *Concrete technology*, 4 Ed., California, Delmar**
- **Mac Ginley T.J. 1990, *Reinforced concrete*, London, E. & F.N. Spoon**

Article/Paper List: This Course does not have any article/paper resources

Other References: This Course does not have any other resources