UNIVERSITI TEKNOLOGI MARA

BCT573: IBS COMPONENTS DESIGN

Course Name (English)	IBS COMPONENTS DESIGN APPROVED
Course Code	BCT573
MQF Credit	3
Course Description	This course deals with design of pre-stressed and pre-cast concrete members. Design of pre-stressed members concentrates on design of flexural member, while design of pre-cast members concentrates on load-bearing walls and element slab.
Transferable Skills	understand concept of pre-stressed and pre-cast concrete design and able to do basic design
Teaching Methodologies	Lectures, Tutorial, Presentation
CLO	CLO1 Explain the basic principles of pre-stressed and pre-cast concrete elements for IBS component in the construction industry. CLO2 Determine suitable design of pre-stressed and pre-cast concrete elements for IBS component in the costruction industry. CLO3 Display teamwork skills related to IBS component design in the construction industry. CLO4 Demonstrate leadership skills through verbal presentation on design in the construction industry.
Pre-Requisite Courses	No course recommendations

Topics
1. Pre-stressed Concrete Design 1.1) introduction to Pre-stressed Concrete Design 1.2) basic principles,properties of materials,limit state design,loss of pre-stress force 1.3) design of flexural members 1.4) analysis of sections 1.5) deflections 1.6) shear 1.7) pre-stressing systems and anchorages
2. Pre-cast Concrete Design 2.1) introductio to pre-cast concrete design 2.2) design of pre-cast concrete load-bearing wall 2.3) design of pre-cast concrete element slab 2.4) wall and floor connections
3. Seismic performance of pre-cast concrete construction 3.1) N/A

Assessment Breakdown	%
Continuous Assessment	100.00%

Details of Continuous Assessment

Assessment Type	Assessment Description	% of Total Mark	CLO
Group Project	group written report and presentation in design pre-stressed and pre-cast concrete elements	30%	CLO3
Presentation	group presentation in design of pre-stressed and pre-cast concrete elements.	20%	CLO4
Test	written test to gain the knowledge on basic priciples of pre-stressed and pre-cast concrte elements.	20%	CLO1
Written Report	written project report on designing a suitable pre-stressed and pre-cast concrete elements for IBS component.	30%	CLO2

Reading List

Recommended Text

- **Elliot, K.S. 2002, *Pre-Cast Concrete Structures*, Butterworth-Heinemann**

Reference Book Resources

- **Hurst,M.K. 1998, *Pre-stressed Concrete Design*, Taylor & Francis**
- **Gerwick Jr. B., C. 2000, *Construction of Prestressed Concrete Structures*, John Wiley & Sons.**
- **Elliot, K., S. 2000, *Multi-Storey Precast Concrete Framed Structures*, Wiley-Blackwell**
- **Englekirk, R., E. 2003, *Seismic Design of Reinforced and Precast Concrete Buildings*, John Wiley and Sons**

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

Other References: This Course does not have any other resources