

Bangladesh Polytechnic Institute

Technology: **Civil**

Semester: **4th**

Sub. Name: **CONSTRUCTION PROCESS-I (6444)**

T P C: 3 3 4

Course Outline

Teacher Name: Imanullah

Mob.No: 01736 40 83 93

Class No.	Discussion and Explanation of Topics/ Titles	Remarks
Class-1	<ul style="list-style-type: none">❖ Understand the features of concrete.➤ State the meaning of concrete.➤ Mention the different kinds of concrete.➤ List the uses of concrete in the construction industry.	
Class-2	<ul style="list-style-type: none">❖ Understand the features of concrete.➤ List the ingredients of different kinds of concrete.➤ Mention the functions of ingredients of concrete.	
Class-3	<ul style="list-style-type: none">❖ Understand the features of concrete.➤ Mention the advantages and limitations of concrete.➤ Write the characteristics of materials used in concrete.	
Class-4	<ul style="list-style-type: none">❖ Understand the properties of concrete.➤ Define the terms: strength, durability, workability, laitance and segregation.➤ State the meaning of water-cement ratio.	
Class-5	<ul style="list-style-type: none">❖ Understand the properties of concrete.➤ List the factors affecting the strength of concrete.➤ List the factors affecting the durability of concrete.	
Class-6	<ul style="list-style-type: none">❖ Understand the properties of concrete.➤ List the factors affecting the workability of concrete.➤ Describe the affect of water-cement ratio on the strength of concrete.	
Class-7	<ul style="list-style-type: none">❖ Understand the techniques of proportioning, mixing,	

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	<p>transporting, placing and compaction of concrete.</p> <ul style="list-style-type: none">➤ Explain the significance of proportioning the ingredients of concrete.➤ List the methods of concrete mix design.	
Class-9	<p>❖ Understand the techniques of proportioning, mixing, transporting, placing and compaction of concrete.</p> <ul style="list-style-type: none">➤ Describe how batching of concrete mix is achieved by volume and weight.➤ Compare the various processes used to mix concrete.➤ Mention the advantages and limitations of ready mix concrete.	
Class-10	<p>❖ Understand the techniques of proportioning, mixing, transporting, placing and compaction of concrete.</p> <ul style="list-style-type: none">➤ State the various methods of transporting concrete.➤ Mention the sequence of placing concrete in different situations.➤ Describe the processes of compaction of concrete.	
Class-11	<p> <u>Feedback</u></p>	
Class-12	<p> <u>Feedback</u></p>	
Class-13	<p>❖ Understand the concept of curing concrete.</p> <ul style="list-style-type: none">➤ State the meaning of curing.➤ State how the curing process affects the strength of hardened concrete.	
Class-14	<p>❖ Understand the concept of curing concrete.</p> <ul style="list-style-type: none">➤ Describe the different methods of curing.➤ Mention the advantages and limitations of various methods	

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	of curing.	
Class-15	 Class Test	
Class-16	❖ Understand the need of different tests on concrete. <ul style="list-style-type: none">➤ Interpret standard test information to establish the properties of various types of aggregates.➤ Express how to draw the grading curve for various sample of aggregate.	
Class-17	❖ Understand the need of different tests on concrete. <ul style="list-style-type: none">➤ Express how to determine the FM value from the grading curve.➤ State the necessity of the following tests on concrete:<ul style="list-style-type: none">a. Slump test.b. Compressive test on hardened cube.c. Compressive test on hardened cylinder.	
Class-18	❖ Understand the features of different special types of concrete. <ul style="list-style-type: none">➤ Compare the properties of polymer concrete and super plasticized concrete.➤ Mention the procedure used in the production of Ferro-cement construction.	

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Class-19	<ul style="list-style-type: none">❖ Understand the features of different special types of concrete.➤ Explain the term pre-stressed concrete.➤ Mention the procedure used in the production of pre-stressed concrete.	
Class-20	<ul style="list-style-type: none">❖ Understand the supervisory aspects of concrete construction.➤ List the special precautions to be observed for concreting under water.➤ List the special precautions to be observed for concreting in cold weather.➤ List the special precautions to be observed for concreting in hot weather.	
Class-21	<ul style="list-style-type: none">❖ Understand the supervisory aspects of concrete construction.➤ List the factors to be considered while supervising good quality concrete production.➤ List the factors to be considered while supervising good quality RCC construction.➤ List the factors to be considered while supervising good quality pre-stressed concrete construction.	
Class-22	<ul style="list-style-type: none">❖ Understand the aspects of foundation.➤ Define the term 'foundation'.➤ State the functions of foundation.➤ List the essential requirements of a good foundation.	
Class-23	<ul style="list-style-type: none">❖ Understand the aspects of foundation.	

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	<ul style="list-style-type: none"> ➤ List the common causes of failure of foundations. ➤ Explain the remedial measures necessary to overcome the failure of foundations. ➤ Mention the precautions necessary to prevent uneven settlement of foundations. 	
Class-24	 <u>Feedback</u>	
Class-25	 <u>Feedback</u>	
	 <u>Mid Term Exam</u>	
Class-26	<ul style="list-style-type: none"> ❖ Understand the features of shallow foundation. ➤ Define the term 'shallow foundation'. ➤ Mention the advantages of shallow foundations. ➤ Mention the limitations of shallow foundations. 	
Class-27	<ul style="list-style-type: none"> ❖ Understand the features of shallow foundation. ➤ Mention the suitability of various types of shallow foundations. ➤ Draw the sketches of strip footing, wide strip footing, eccentrically loaded footing, raft foundation, combined footing, stepped strip foundation, grillage foundation. 	
Class-28	<ul style="list-style-type: none"> ❖ Understand the features of deep foundation. ➤ Define the term 'deep foundation'. ➤ Mention the classification of pile foundations according to function or use, materials and composition, method of construction. 	
Class-29	<ul style="list-style-type: none"> ❖ Understand the features of deep foundation. ➤ Write the advantages and limitations in each case of deep foundations. 	

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	<ul style="list-style-type: none">➤ Describe the following methods of casting and placing concrete pile foundation:➤ Cased cast-in-situ concrete pile.➤ Uncased cast-in-situ concrete pile.➤ Pre-cast concrete pile.	
Class-30	<ul style="list-style-type: none">❖ Understand the features of deep foundation.➤ Identify the types of hammers used for pile driving.➤ Describe the methods for driving concrete pile groups and placing pile caps.	
Class-31	<ul style="list-style-type: none">❖ Understand the features of brick masonry.➤ State the meaning of brick masonry.➤ List the tools required for brick masonry.➤ State the specific uses of brick masonry tools.	
Class-32	<ul style="list-style-type: none">❖ Understand the features of brick masonry.➤ Distinguish among different types of masonry structures.➤ Define the following terms: header, stretcher, lap, course, bed, joint, closers, perpend.	
Class-33	<ul style="list-style-type: none">❖ Understand the features of brick masonry.➤ Identify the defects in brick masonry.➤ List the factors to be considered while supervising brick masonry works.	
Class-34	<ul style="list-style-type: none">❖ Understand the purpose of bond in brick masonry.➤ State the meaning of bond in brick masonry.	

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	<ul style="list-style-type: none">➤ Mention the functions of good brick bonding.➤ Describe the steps for brick laying.	
Class-35	<ul style="list-style-type: none">❖ Understand the purpose of bond in brick masonry.➤ Identify different types of bonds in brick masonry.➤ Draw the neat sketches of different types of bonds in brick masonry.➤ Differentiate between English and Flemish bond.➤ Describe the bonding arrangements around openings and corners.	
Class-36	<ul style="list-style-type: none">❖ Understand the features of composite masonry.➤ State the meaning of composite masonry.➤ Identify different types of composite masonry.➤ Sketch details of brick backed stone slab masonry.	
Class-37	<ul style="list-style-type: none">❖ Understand the features of composite masonry.➤ Sketch details of reinforced brick masonry.➤ Mention the advantages and limitations of using reinforced brick masonry.➤ Mention the advantages and limitations of hollow clay block masonry	
Class-38	<ul style="list-style-type: none">❖ Understand the features of partition wall.➤ State the meaning of partition wall.➤ Mention the common requirement of partition walls.➤ Mention the functions of partition wall.	
Class-39	<ul style="list-style-type: none">❖ Understand the features of partition wall.	

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	<ul style="list-style-type: none"> ➤ List different types of partition walls. ➤ Describe the procedure of construction of the following types of partition walls: 	
Class-40	<ul style="list-style-type: none"> ❖ Understand the features of partition wall. ➤ Mention the advantages and limitations of each type of partition walls. ➤ Differentiate among the load bearing (main) walls and partition walls. 	
Class-41	<ul style="list-style-type: none"> ❖ Understand the features of cavity wall. ➤ State the meaning of cavity wall. ➤ Explain the necessity of cavity wall construction. ➤ Sketch the general features of cavity walls. ➤ Mention the advantages and limitations of cavity walls over solid brick walls. 	
Class-42	<ul style="list-style-type: none"> ❖ Understand the features of cavity wall. ➤ Identify different types of wall ties used in cavity wall. ➤ Determine the spacing of wall ties in used in cavity wall. ➤ Describe the construction procedure of cavity wall. ➤ Mention the precautions to be taken while construction of cavity wall 	
Class-43	<ul style="list-style-type: none"> 📌 <u>Feedback</u> 	
Class-44	<ul style="list-style-type: none"> 📌 <u>Feedback</u> 	
Class-45	<ul style="list-style-type: none"> 📌 <u>Class Test</u> 	

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Reference Book:-

- 1 Building construction
- 2 Building construction
- 3 Building construction

Dr. B C Punmia

G J Kulkarni

S P Aurora and S P Brindra