



Concrete Technology

SWAYAM Prabha Course Code - C19

PROFESSOR'S NAME	PROF. B. Bhattacharjee
DEPARTMENT	Civil Engineering
INSTITUTE	Indian Institute of Technology, Delhi
Course Outline	The course on “Concrete Technology” focuses on concrete making materials including supplementary cementitious materials. Concrete production process also forms a part of the discussion. Going through the course one would develop first-hand knowledge on concrete production process and properties and uses of concrete as a modern material of construction. The courses will enable one to make appropriate decision regarding ingredient selection and use of concrete.

COURSE DETAILS

S. No	Module ID/ Lecture ID	Lecture Title/Topic
1	L1	Production and Composition
2	L2	Structure and Hydration
3	L3	Structure and Hydration.
4	L4	Properties and Tests
5	L5	Types and Use
6	L6	Aggregates (Size , Shape)
7	L7	Packing, FM,SM
8	L8	Properties
9	L9	Chemical Admixtures

10	L10	Chemical Admixtures.
11	L11	Mineral Admixtures
12	L12	Mineral Admixtures.
13	L13	Mineral Admixtures..
14	L14	Mix Proportioning of Concrete: General Principles
15	L15	Mix design of Concrete: General and IS Method
16	L16	Mix Design of Concrete: Is Example and British (DOE) Method
17	L17	Mix Design of concrete: ACI 211 Method
18	L18	Mix Design of concrete: Packing Density, Rheology
19	L19	Batching and Mixing of concrete: General Principles
20	L20	RMC and Transporting Concrete
21	L21	Workability and Pumping of Concrete
22	L22	Compaction and Curing Concrete
23	L23	Strength of Concrete: Factors Affecting
24	L24	Strength of Concrete: Aggregate Contribution
25	L25	Strength of Concrete: Factors Affecting Test Results
26	L26	Mechanical Properties of Concrete: Elastic Modulus, Poisson's Ratio, Fatigue, Impact
27	L27	Creep of Concrete
28	L28	Creep and Shrinkage of Concrete
29	L29	Shrinkage of Concrete
30	L30	Shrinkage of Concrete.
31	L31	Fundamental Concepts, Degradation Process, Attacks
32	L32	Frost Action and Rebar Corrosion

33	L33	Carbonation and Chloride Affect
34	L34	Rebar Corrosion
35	L35	Rebar Corrosion and General Strateggy
36	L36	High Strength Concrete
37	L37	High Strength Matrics and SCC
38	L38	Self Compacting Concrete
39	L39	Fiber Concrete
40	L40	Fiber and Roller Compacted Concrete
41	L41	Special Concrete and Sustainability

References if Any: