



BASIC CONSTRUCTION MATERIALS

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TYPE OF COURSE : New | Core | UG

COURSE DURATION : 12 Weeks (18 Jan' 21 - 09 Apr' 21)

EXAM DATE : 25 Apr 2021

PRE-REQUISITES : None

INTENDED AUDIENCE : Any Interested Learners

COURSE OUTLINE :

The course intends to provide basic information on the structure and properties of construction materials to undergraduate students. The contents of the course will focus on a fundamental understanding of the structure of common materials, the types of bonds, and mechanisms of damage and failure in materials. It will then introduce the different materials used in construction, with respect to the approached to their design and use. At the end of the course, the student should be able to link the material choice with the application in construction.

ABOUT INSTRUCTOR :

Prof Manu Santhanam works at the Department of Civil Engineering at IIT Madras. He specializes in the multi-scale assessment of cementitious materials. His research interests include concrete durability, special concrete and admixtures, and non-destructive evaluation.

Dr. Radhakrishna G. Pillai is an Associate Professor in the Department of Civil Engineering at IIT Madras. He specializes on durability, corrosion and its control, and repair procedures in/for concrete structures. His long-term goal includes developing methods to estimate and extend service life of concrete structures.

COURSE PLAN :

- Week 1:** Structure and properties of materials
- Week 2:** Structure and properties of materials (Cont'd)
- Week 3:** Structure and properties of materials (Cont'd)
- Week 4:** Stone / Brick / Mortar
- Week 5:** Cement and Concrete
- Week 6:** Cement and Concrete (Cont'd)
- Week 7:** Cement and Concrete (Cont'd)
- Week 8:** Steel / Aluminium / Copper
- Week 9:** Steel / Aluminium / Copper (Cont'd)
- Week 10:** Composite materials / FRP / Polymers and Plastics
- Week 11:** Wood / Glass
- Week 12:** Pavement materials