

## Course syllabus

Department of Civil Engineering, Indian Institute of Technology Madras

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### CE2330 – Civil Engineering Materials and Construction

**Credit Distribution:** C:9 L:3 T:0 P:0 E:0 O:6 TH:0

**Course Type:** Theory

**Description:** To introduce the first year Civil Engineering students to the concepts of the structure of construction materials, as well the common construction practices and equipment.

**Course Content:**

- **Materials:** 1. Materials engineering concepts 2. Nature of materials 3. Steel and other metals 4. Aggregates and water 5. Cement and mineral/chemical admixtures 6. Concrete 7. Masonry 8. Bituminous materials 9. Wood and wood products 10. Composites
- **Construction:** 1. Foundations 2. Masonry 3. Concrete and steel construction 4. Floors and roofs 5. Lintels, arches and staircases 6. Waterproofing 7. Formwork and scaffolding 8. Pavements 9. Construction equipment

**Text Books:** No prescribed text book

**Reference Books**

- Materials for Civil and Construction Engineers, Michael S. Mamlouk and John P. Zaniewski, Addison Wesley Longman Inc., USA, 1999.
- Materials Science and Engineering: An introduction, W.D. Callister, John Wiley and Sons, New York, 1994.
- Building Materials, P.C. Varghese, Prentice-Hall of India, New Delhi, 2008.
- Civil Engineering Materials, Shan Somayaji, 2nd Edition, Prentice Hall, New Jersey, 2008.
- Fundamentals of Building Construction, Edward Allen and Joseph Iano, 5th Edition, John Wiley & Sons Inc., New Jersey, 2008.
- Building Construction, B. C. Punmia, Laxmi Publications, New Delhi, 1993.

**Prerequisite:** NIL