Course Number and Name
BCE060 - MODERN CONSTRUCTION MATERIALS
Credits and Contact Hours
3 & 45
Course Coordinator's Name
Mr.S.Vinothkumar
Text Books and References

REFERENCES:

- Santhakumar A.R., Concrete Technology, Oxford University Press, New Delhi. 2007.
- Mamlouk, M.S. and Zaniewski, J.P., Materials for Civil and Construction Engineers, Prentice Hall Inc., 1999.
- Ashby, M.F. and Jones.D.R.H.H. "Engineering Materials 1: An Introduction to Properties, applications and designs", Elsevier Publications, 2005.
- Shan Somayaji, Civil Engineering Materials, Prentice Hall Inc., 2001
- Aitkens , High Performance Concrete, McGraw Hill, 1999
- Deucher, K.N, Korfiatis, G.P and Ezeldin, A.S, Materials for Civil and Highway Engineers, Prentice Hall Inc., 1998.
- Shetty M.S, Concrete Technology: Theory and Practice, S.Chand & Company Ltd., 2005.
- ACI Report 440.2R-02, "Guide for the Design and Construction of Externally Bonded Rp Systems For Strengthening Concrete Structures", American Concrete Institute, 2002.

Course Description
• To bring about an exposure to design concepts structures, the loads, systems, structural materials, design procedures, repair and rehabilitation of systems

Prerequisites	Co-requisites
Building Construction Technology	NIL
required, elective, or selected elective (as per Table 5-1)	

Course Outcomes (COs)	
CO1	Identify the various types of concretes and their constituents and properties.
CO2	Identify the various types of metals, their properties and applications.
CO3	Identify the various composite materials, their properties and applications.
CO4	Understand the concept of water-proofing and identify the purpose of flooring and façade materials.
CO5	Design and develop smart intelligent buildings.

Student Outcomes (SOs) from Criterion 3 covered by this Course

COs/SOs	a	b	c	d	e	f	g	h	i	j	k
CO1	M				H		M			L	
CO2	M				H		M				
CO3	M				H		M		L		
CO4	M				H		M				

	CO5	M				H		M					

List of Topics Covered

UNIT I SPECIAL CONCRETES 10

Concretes, Behaviour of concretes - High Strength and High Performance Concrete – Fibre Reinforced Concrete, Self compacting concrete, Alternate Materials to concrete.

UNIT II METALS 10

Steels - New Alloy Steels – Aluminum and its Products –Coatings to reinforcement – Applications.

UNIT III COMPOSITES 10

Plastics –Reinforced Polymers – FRP – Applications

UNIT IV OTHER MATERIALS 10

Water Proofing Compounds – Non-weathering Materials – Flooring and Façade Materials

UNIT V SMART AND INTELLIGENT MATERIALS 5

Smart and Intelligent Materials for intelligent buildings - Special features