Cours	se Code	Course Name	L-T-P- Crodits	Year of			
			Creuits	Introduction			
CI	E 204	CONSTRUCTION TECHNOLOGY	4-0-0-4	2016			
Prerequisite : Nil							
Cours	e objectiv	es:					
 To study details regarding properties and testing of building materials, To study details regarding the construction of building components To study properties of concrete and concrete mix design To impart the basic concepts in functional requirements of building and building services. To develop understanding about framed construction and building failures 							
Syllab	us:			1 1			
Constr	uction Ma	terials –. Timber -Mortar – Iron and Steel –. Structu	ral steel – M	odern materials.			
Concre	ete-Admix	ction foundations Introduction to Cost effective cor	x proportion	ng asonry Lintels			
and arc	thes – Floo	rs and flooring –		asoni y – Linteis			
Roofs	and roof c	coverings -Doors, windows and ventilators -Finishing	works. Tall I	Buildings – steel			
and co	ncrete fra	me –prefabricated construction – slip form construct	ion. Vertical	transportation –			
Stairs -	-Elevators	– Escalators –ramps.		-			
- Build	ling failure	es and Retrofitting-failures in RCC and Steel structure	s– Foundatio	n failure-			
Expec	ted Outco	mes:					
The stu	idents will	be able to					
i.	understan	d construction materials, their components and manufa	acturing proce	ess			
ii.	know the	properties of concrete and different mix design method	ds				
iii.	understan	d the details regarding the constr <mark>u</mark> ction of building cor	nponents				
iv.	analyse a	nd apply learning of materials, structure, servicing	and construct	tion of masonry			
	domestic	buildings.					
v.	define an	d describe the concepts and design criteria of tall frame	ed and load be	earing buildings.			
Text b	ooks						
1.	Arora and	l Bindra, Building construction, Dhanpath Rai and Son	s.				
2.	Punmia E	B. C, Building construction. Laxmi Publications					
3.	Rangwala S C., Engineering Materials, Charotar Publishers						
4.	Shetty M	.S., Concrete Technology, S. Chand & company.					
Refere	nce Book	S Mantiaal Transmontation for Duilding American Elecuit					
1.	Adier K, vertical Transportation for Building, American Elsevier Pub.						
2. 3	Gambhir	M L Concrete Technology Tata McGrawHill	i, wiedław II				
4.	Krishna F	Raiu N. Design of Concrete Mixes, CBS publishers.					
5.	Mcking T.M, Building Failures, Applied Science Pub.						
6.	National Building Code.						
7.	Neville A.M. and Brooks.J.J, Concrete Technology, Pearson Education.						
8.	Smith P &	& Julian W. Building services, Applied Science Pub.					
9.	Tall build	ling systems & concepts, Monograph on planning and	design of Tall	building,			

COURSE PLAN					
Module	Contents	Hours	Sem. Exam Marks		
I	 Properties of masonry materials – review of specifications; Mortar – Types – Sand – properties – uses. Timber products: properties and uses of plywood, fibre board, particle board. Iron and Steel –Reinforcing steel – types – specifications. Structural steel – specifications Miscellaneous materials (only properties, classifications and their use in construction industry): Glass, Plastics, A.C. Sheets, Bitumen, Adhesives, Aluminium 	9	15%		
П	Concrete – Aggregates – Mechanical & Physical properties and tests – Grading requirements – Water quality for concrete – Admixtures – types and uses – plasticizers – accelerators – retarders –water reducing agents Making of concrete - batching – mixing – types of mixers – transportation – placing – compacting – curing Properties of concrete – fresh concrete – workability – segregation and bleeding - factors affecting workability & strength – tests on workability – tests for strength of concrete in compression, tension & flexure Concrete quality control – statistical analysis of results – standard deviation –acceptance criteria – mix proportioning (B.I.S method) – nominal mixes.	9	15%		
	FIRST INTERNAL EXAMINATION				
III	Building construction - Preliminary considerations for shallow and deep foundations Masonry – Types of stone masonry – composite walls - cavity walls and partition walls -Construction details and features – scaffoldings Introduction to Cost-effective construction - principles of filler slab and rat-trap bond masonry	9	15%		
IV	Lintels and arches – types and construction details. Floors and flooring – different types of floors and floor coverings Roofs and roof coverings – different types of roofs – suitability – types and uses of roofing materials Doors, windows and ventilators – Types and construction details Finishing works – Plastering, pointing, white washing, colour washing, distempering, painting. Methods of providing DPC. Termite proofing	9	15%		
SECOND INTERNAL EXAMINATION					

V	Tall Buildings – Framed building – steel and concrete frame – structural systems –erection of steel work–concrete framed construction– formwork – construction and expansion. joints Introduction to prefabricated construction – slip form construction Vertical transportation: Stairs – types - layout and planning- Elevators – types – terminology – passenger, service and goods elevators – handling capacity - arrangement and positioning of lifts – Escalators – features –use of ramps	10	20%		
VI	 Building failures – General reasons – classification – Causes of failures in RCC and Steel structures, Failure due to Fire, Wind and Earthquakes. Foundation failure – failures by alteration, improper maintenance, overloading. Retrofitting of structural components - beams, columns and slabs 	10	20%		
END SEMESTER EXAMINATION					

QUESTION PAPER PATTERN (End semester examination):

Maximum Marks :100

Exam Duration: 3 Hrs

- Part A -Module I & II : 2 questions out of 3 questions carrying 15 marks each
- Part B Module III & IV: 2 questions out of 3 questions carrying 15 marks each
- Part C Module V & VI : 2 questions out of 3 questions carrying 20 marks each
- Note : 1. Each part should have at least one question from each module

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