

INDIAN INSTITUTE OF TECHNOLOGY TIRUPATI
PROFORMA FOR NEW COURSE

1.	Title of the Course	Civil Engineering Materials and Construction
2.	Course Number	CE2105
3.	Status of the Course	Core
4.	Structure of Credits	3-0-0-3
5.	Offered To	UG
6.	New Course/Modification to	New
7.	To be Offered by	Department of Civil & Environmental Engineering
8.	To take effect from	July 2018
9.	Prerequisite	Nil
10.	Whether approved by the Department	Yes
11.	Course Objective: This course will provide a basic overview of various civil engineering materials and their applications. The course will focus on the importance and functionality of various components of buildings and other structures and will also cover the stages and strategies associated with various construction processes.	
12.	Course Content: Concrete- properties in fresh and hardened state, durability, special concrete; Steel- production, properties and types; Bituminous- types and properties of asphalt, bituminous concrete for pavement; Masonry- bricks, concrete blocks, lime and gypsum; Timber- types of wood; seasoning, mechanical properties, defects, preservation techniques; Glass-types of glass, production, application in civil structure; Miscellaneous materials- polymers and plastics, composites and smart materials; Overview of buildings; Foundations- deep and shallow, shoring; Superstructure- load bearing masonry, arches, lintels, scaffolding, formwork; Floors and roofs- flat and pitched roofs, centering, floor finishes; Staircases and other elements of construction; Doors and windows; Framed construction- multi-storied buildings.	
13.	Text book(s): 1. Mamlouk S P and Zaniewski J P, <i>Materials for Civil and Construction Engineers</i> , Prentice Hall Pearson Education, New Jersey (2014). 2. Punmia B C, Jain A K and Jain A K, <i>Building Construction</i> , Laxmi Publications, New Delhi (2015).	
14.	Reference(s): 1. Allen E and Iano J, <i>Fundamentals of Building Construction</i> , John Wiley & Sons, New Jersey (2008). 2. Callister W D, <i>Material Science and Engineering: An Introduction</i> , John Wiley and Sons, New Jersey (2010).	