

1.	Title of the course	Civil Engineering Materials
2.	Course number	CE210M
3.	Structure of credits (L-T-P-C)	2-0-3-4
4.	New course/modification to	Modified with CE202L/CIVIL ENGINEERING MATERIALS AND CONSTRUCTION
5.	To be offered by	Civil and Environmental Engineering
6.	Proposed by	A V Rahul
7.	Prerequisite	None
8.	<b>Course Objective(s):</b> To discuss basic civil engineering materials concerning their structure, properties, and use. To demonstrate common test methods for characterizing building materials.	
9.	<b>Course Content:</b> Introduction to different construction materials, material variability, characteristic strength; Cement and concrete: cement production, properties and types, aggregates, chemical and mineral admixtures, fresh and hardened properties of concrete; Metals: iron and steel metallurgy, steel used in construction, copper, aluminium; Masonry materials: stone, bricks, concrete blocks, mortars; Timber: structure, properties, wood-based composites; Pavement material; Polymers and polymer-based composites; Experiments for testing properties of cement, concrete, brick, steel reinforcement bars.	
10.	<b>Textbook(s):</b> 1. Mamlouk M S and Zaniewski J P, Materials for Civil and Construction Engineers, 4th Edition, Prentice Hall (2016). 2. Soutsos M and Domone P, Construction Materials: Their Nature and Behaviour, 5th Edition, CRC Press (2017).	
11.	<b>Reference(s):</b> 1. Callister W D and Rethwisch D G, Materials Science and Engineering: An Introduction, 9th Edition, Wiley (2013). 2. Young J F, Bentur A and Mindess S, The Science and Technology of Civil Engineering Materials, Pearson (1997). 3. Mindess S, Young J F and Darwin D, Concrete, 2nd Edition, Prentice Hall (2002). 4. Varghese P C, Building Materials, 2nd Edition, Prentice Hall (2015).	