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| 1. | Title of the course | Civil Engineering Materials and Construction |
| 2. | Course number | CE202L |
| 3. | Structure of credits | 3-0-0-3 |
| 4. | Offered to | UG |
| 5. | New course/modification to | Modification To CE2105/8 |
| 6. | To be offered by | Department of Civil and Environmental Engineering |
| 7. | To take effect from | July 2022 |
| 8. | Prerequisite | Nil |
| 9. | **Course Objective(s):** 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. | |
| 10. | **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. | |
| 11. | **Textbook(s):**<br>1. Mamlouk S P and Zaniewski J P, *Materials for Civil and Construction Engineers*, Prentice Hall Pearson Education, New Jersey (2014).<br>2. Punmia B C, Jain A K and Jain A K, *Building Construction*, Laxmi Publications, New Delhi (2015). | |
| 12. | **Reference(s):**<br>1. Allen E and and Iano J, Fundamentals of Building Construction, John Wiley & Sons, New Jersey (2008).<br>2. Callister W D, *Material Science and Engineering: An Introduction, John Wiley and Sons*, New Jersey (2010). | |