1.	Title of the course	Prestressed Concrete Design
2.	Course number	CE501L
3.	Structure of credits	3-0-0-3
4.	Offered to	PG
5.	New course/modification to	Modification To CE5121/14
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):** To introduce the behaviour of prestressed concrete members, analysis and design of members subjected to axial tension, flexure, shear and torsion.	
10.	**Course Content:** Prestressing systems and material properties; Losses in prestressing; Analysis and design of members subjected to axial load, flexure, shear and torsion at service and ultimate loads; Ultimate strength of rectangular and flanged sections; Partially prestressed concrete; Unbonded post-tensioned concrete; Behaviour of prestressed concrete members; Deflection due to gravity loads and prestressing force; Prediction of crack width; Transmission of prestressing force; Analysis of cantilever and continuous beams: cable profile, moment redistribution; Special topics: composite sections, one-way slabs, two-way slabs, compression members, circular prestressing.	
11.	**Textbook(s):** 1. Lin T Y and Burns N H, *Design of Prestressed Concrete Structures*, 3rd Edition, John Wiley & Sons (2010). 2. Nawy E G, *Prestressed Concrete – A Fundamental Approach*, 5th Edition, Prentice Hall (2009).	
12.	**Reference(s):** 1. Raju N K, *Prestressed Concrete*, 1st Edition, Tata McGraw-Hill (2018). 2. Nilson A, *Design of Prestressed Concrete*, 2nd Edition, John Wiley & Sons (1987). 3. Rajagopalan N, *Prestressed Concrete*, 2nd Edition, Narosa Publishing House (2017). 4. Raju N K, Prestressed Concrete, 1st Edition, Tata McGraw-Hill (2018).	