Civil and Infrastructure Engineering

Semester VII						
S. No	**Course Code**	**Course Name**	**L**	**T**	**P**	**C**
1	CE 401	Construction Engineering and Management	2	1	0	6
2	CE 403	Civil and Infrastructure Engineering Design	1	0	1	3
3		Institute Elective-V				6
4		HSS Basket 1 or 2 (Elective-II)				6
5		BTP-I	0	0	6	6
		Total Credits				**27**

Civil and Infrastructure Engineering

1	**Title of the course** (L-T-P-C)	**Construction Engineering and Management** **2-1-0-6**
2	**Pre-requisite courses(s)**	NIL
3	**Course content**	Fundamentals of construction project management: Introduction, Project Initiation, and Planning, Time Value of Money, Investment Analysis, Cost-Benefit Analysis; Construction schedule management: Work Breakdown Structures, Development of project activity networks, Precedence Diagram Method, Critical Path Method (CPM), Program Evaluation and Review Technique (PERT), Line Balance Methods in scheduling. Construction material management: Resources in construction, Resource levelling, the crashing of project schedules, earned value analysis Construction Quality and safety: Safety and occupational hazards in construction, Fundamentals of quality control in construction, Safety in construction - Cost of Accidents - Safety norms - Safety aids Introduction to Construction Contracts: Estimation, Tenders & Contracts - EOI-Prequalification - Types of Contracts - Terminology used, fundamentals of delay analysis and claims, Construction Finances – decision making, Advances in construction management: Introduction to Building Information Modelling (BIM), Lean construction, and Integrated Project Delivery in construction
4	**Texts/References**	**Reading:** 1. Kumar Neeraj Jha, "Construction Project Management: theory and practice" Pearson Education India; 2nd edition, 2015. 2. F. Lawrence Bennett, "The Management of Construction: A Project Lifecycle Approach", Routledge; 1st edition, 2016. 3. S. Choudhury "Project Management", McGraw Hill Education, 2017. **References:** 1. Riggs, James L., David D. Bedworth, and Sabah U. Randhawa., "Engineering Economics", McGraw Hill Education; 4th edition, 2004. 2. Garold D. Oberlender, "Project management for engineering and construction", McGraw Hill Education; Second edition, 2014. 3. Chitkara, K. K. "Construction Project Management", McGraw-Hill; Forth Edition, 2019.