

## Civil and Infrastructure Engineering

Semester VII						
S.No	Course Code	Course Name	L	T	P	C
1	CE309T	<u>Construction Engineering and Management</u>	2	1	0	6
2	CE401C	<u>Civil and Infrastructure Engineering Design</u>	1	0	1	3
3		Institute Elective-III				6
4		HSS Elective-II				6
5	CE401P	BTP-I	0	0	6	6
		Total Credits				27

# Civil and Infrastructure Engineering

1	<b>Title of the course (L-T-P-C)</b>	<b>Construction Engineering and Management 2-1-0-6</b>
2	<b>Pre-requisite courses(s)</b>	NIL
3	<b>Course content</b>	<p>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.</p> <p>Construction material management: Resources in construction, Resource levelling, the crashing of project schedules, earned value analysis</p> <p>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</p> <p>Introduction to Construction Contracts: Estimation, Tenders &amp; Contracts - EOI-Prequalification - Types of Contracts - Terminology used, fundamentals of delay analysis and claims, Construction Finances – decision making,</p> <p>Advances in construction management: Introduction to Building Information Modelling (BIM), Lean construction, and Integrated Project Delivery in construction</p>
4	<b>Texts/References</b>	<p><b>Reading:</b></p> <ol style="list-style-type: none"> <li>1. Kumar Neeraj Jha, “Construction Project Management: theory and practice” Pearson Education India; 2nd edition, 2015.</li> <li>2. F. Lawrence Bennett, “The Management of Construction: A Project Lifecycle Approach”, Routledge; 1st edition, 2016.</li> <li>3. S. Choudhury “Project Management”, McGraw Hill Education, 2017.</li> </ol> <p><b>References:</b></p> <ol style="list-style-type: none"> <li>1. Riggs, James L., David D. Bedworth, and Sabah U. Randhawa., “Engineering Economics”, McGraw Hill Education; 4th edition, 2004.</li> <li>2. Garold D. Oberlender, “Project management for engineering and construction”, McGraw Hill Education; Second edition, 2014.</li> <li>3. Chitkara, K. K. “Construction Project Management”, McGraw-Hill; Forth Edition, 2019.</li> </ol>