

1.	Title of the course	Estimation and Construction Management
2.	Course number	CE401L
3.	Structure of credits	3-1-0-4
4.	Offered to	UG
5.	New course/modification to	Modification To CE4101/8
6.	To be offered by	Department of Computer Science and Engineering
7.	To take effect from	July 2022
8.	Prerequisite	Nil
9.	<b>Course Objective(s):</b> This course introduces basic concepts on engineering economics, quantity and cost estimates of Civil Engineering works, construction management, planning and control of Civil Engineering projects.	
10.	<b>Course Content:</b> Engineering Economics: Interest rates and equivalence, cash flows, nominal and real interest rates, annual and future worth of cash flows, arithmetic and geometric gradient, comparison of alternatives, rate of return, cost-benefit analysis, depreciation, equipment costing; Estimation: Purpose and types of estimates, units of items of work, methods of building estimates, quantity take-off (of earthwork, brickwork, formwork, plastering and painting, reinforced concrete work, steel work, road work etc.), specifications and cost estimate, rate analysis; Planning and Control: WBS and bar charts, networks and relationships, critical path method, floats, resource levelling, PERT, earned value analysis; Construction Management: Construction contracts, safety and quality.	
11.	<b>Textbook(s):</b> 1. Dutta B N, <i>Estimating and Costing in Civil Engineering: Theory and Practice</i> , UBS Publishers' Distributors Pvt. Ltd (2016). 2. Jha K N, <i>Construction Project Management: Theory and Practices</i> , Pearson Education India (2015).	
12.	<b>Reference(s):</b> 1. Chakraborti M, <i>Estimating, Costing Specification and Validation in Civil Engineering</i> , by author (2017). 2. Oberlender G D, <i>Project Management for Engineering &amp; Construction</i> , McGrawHill Education (2014). 3. IS 1200, <i>Methods of Measurement of Building and Civil Engineering Works</i> , Bureau of Indian Standards, New Delhi (1974). 4. CPWD, <i>Delhi Schedule of Rates</i> , Central Public Works Department, Government of India, New Delhi (2016).	