

**JAIPUR ENGINEERING COLLEGE AND RESEARCH CENTRE**

**CIVIL ENGINEERING DEPARTMENT**

**COURSE OUTCOMES**

**Name of Subject – Construction Technology & Equipment      CODE – 5CE3.01      Semester- 5th**

<b>S. No</b>	<b>Subject Code</b>	<b>Subject Name</b>	<b>Course Outcomes ( CO)</b>
1	5CE3.01	<b>Construction Technology &amp; Equipment</b>	CO1- To understand the concept of Engineering Economy, Depreciation and Depletion. CO2- To understand safety in construction. CO3- To understand need of construction planning and objective of material management. CO4-To understand the various technology and equipment involved in construction.

# JAIPUR ENGINEERING COLLEGE AND RESEARCH CENTRE

## CIVIL ENGINEERING DEPARTMENT

### PROGRAM OUTCOMES

**Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

**Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

**Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

**Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

**The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

**Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

**Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

**Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

**JAIPUR ENGINEERING COLLEGE AND RESEARCH CENTRE****CIVIL ENGINEERING DEPARTMENT****CO-PO MAPPING****Name of Subject – Construction Technology & Equipment      CODE – 5CE3.01      Semester- 5th**

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**1- Low****2 - Medium****3 - High**

<b>CO/PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>
<b>CO1</b>	3	3	2	-	1	3	2	3	2	2	3	3
<b>CO2</b>	3	3	3	-	2	3	2	3	2	2	2	3
<b>CO3</b>	3	3	3	-	2	3	3	3	2	2	3	3
<b>CO4</b>	3	3	3	3	3	3	3	3	2	2	3	3

## LECTURE PLAN

Academic Year – 2020-21	Semester - V
Course – UG	Branch – Civil Engineering
Class – B.TECH	Subject – Construction Technology & Equipment
Subject Code – SCE3-01	Subject Type - Theory
Name of Teacher – Shivangni Khandelwal	Workload – 4hrs/week

Lec No.	Unit Code	Topic Description	Expected Month	Expected Week	Plan of Teaching
1	1.1	<b>Introduction:</b> Objective, scope and outcome of the course.	July 2020	1	PPT
2	2.1	Introduction of Engineering Economy	July 2020	2	PPT
3	2.2	Principle of Engineering Economy		2	PPT
4	2.3	Minimum cost point analysis		3	PPT
5	2.4	Breakeven point analysis		3	PPT
6	2.5	Depreciation		4	PPT
7	2.6	Depletion		4	PPT
8	3.1	Safety in construction		August & September 2020	1
9	3.2	Causes, classification, cost and measurement of an accident	1		PPT
10	3.3	safety programme for construction	2		PPT
11	3.4	protective equipment & accident report	3		PPT
12	3.5	safety measure for storage and handling of building materials	3		PPT
13	3.6	safety measure for Construction of elements of a building	4		PPT
14	3.7	safety measure in demolition of buildings	4		PPT
15	3.8	Safety lacuna in Indian scenario & Fire safety provisions as per NBC	1		PPT

16	4.1	Need of Construction Planning	September & October 2020	1	PPT
17	4.2	Constructional Resources, construction team		2	PPT
18	4.3	stages in construction		3	PPT
19	4.4	preparation of construction schedule		3	PPT
20	4.5	Job layout		4	PPT
21	4.6	inspection and quality control;		4	PPT
22	4.7	Objective and functions of material management		1	PPT
23	5.1	Construction Equipment and Management	October & November 2020	1	PPT
24	5.2	Earth Moving Equipment-Bull dozers tractor pulled scrapers		2	PPT
25	5.3	Power shovels; Draglines; clamshells; cranes; Hoes		3	PPT
26	5.4	Trenching machine types Hauling Equipment		4	PPT
27	5.5	Drilling, Blasting and Tunneling Equipment		4	PPT
28	5.6	Pile Driving Equipment		1	PPT
29	-	Content Beyond Syllabus	December 2020	-	PPT

## RTU SYLLABUS

### 5CE3-01: Construction technology and equipment

**Credit: 2      Max. Marks: 100 (IA:20, ETE:80)**

**2L+0T+0P      End Term Exam: 2 Hours**

SN	Contents	Hours
<b>1</b>	<b>Introduction:</b> Objective, scope and outcome of the course.	<b>1</b>
<b>2</b>	<b>Engineering Economy:</b> Principle of Engineering Economy, Minimum cost point analysis, Breakeven point analysis, Depreciation and depletion	<b>6</b>
<b>3</b>	<b>Safety in construction:</b> Causes, classification, cost and measurement of an accident, safety programme for construction, protective equipment, accident report, safety measure: (a) For storage and handling of building materials. (b) Construction of elements of a building (c) In demolition of buildings; Safety lacuna in Indian scenario. Fire safety provisions as per NBC.	<b>8</b>
<b>4</b>	<b>Construction Planning:</b> Need of construction planning, Constructional Resources, construction team, stages in construction, preparation of construction schedule, Job layout, inspection and quality control.  <b>Materials Management:</b> Objective and functions of material management	<b>7</b>
<b>5</b>	<b>Construction Equipment and Management</b> Earth Moving Equipment-Bull dozers, tractor, pulled scrapers, Power shovels, Draglines clamshells; cranes; Hoes, Trenching machine types Hauling Equipment; Drilling, Blasting and Tunnelling Equipment; Pile Driving Equipment	<b>6</b>
	<b>TOTAL</b>	<b>28</b>