

**VASAVI COLLEGE OF ENGINEERING (Autonomous)**

IBRAHIMBAGH, HYDERABAD – 500 031

**Department of Mechanical Engineering****MECHANICAL TECHNOLOGY (Open Elective-I)**

SYLLABUS FOR B.E.III-SEMESTER

L:T:P(Hrs/week):2:0:0	SEE Marks:60	Course Code: <b>U18OE320ME</b>
Credits :02	CIE Marks:40	Duration of SEE:03Hours

<b>COURSE OBJECTIVE</b>	<b>COURSE OUTCOMES</b>
The objective of this course is to learn the basic principles of excavating equipment, conveying equipment hoisting equipment, concrete producing equipment and pneumatic equipment.	<i>On completion of the course, students will be able to</i>
	1 identify the operations of various earth moving equipments for maintenance and selection with respect to their applications.
	2 justify various conveying equipment for transporting material based on working principles.
	3 Explain the working principles of various types of hoisting equipment in civil engineering applications.
	4 examine various aggregate and concrete producing equipments used in concrete production and working of pneumatic equipment.

**UNIT-I: EXCAVATING EQUIPMENT**

General description, operation, maintenance and selection of Earth moving and Excavating Equipment: Shovels, Dragline, Clamshell, Cable excavator, Bucket wheel excavator, Tractor, Bulldozer, Scraper, Trenchers, Grader, Earth Compactors.

**UNIT-II: CONVEYING EQUIPMENT**

Belt conveyor, Screw Conveyor, Bucket Conveyor, Apron Conveyor and Aerial Ropeway.

**UNIT-III: HOISTING EQUIPMENT**

Hoist winch, Differential and Worm geared chain hoists, Fork lift trucks, Gayed and stiffly derricks, swing and non-swing mobile crane, whirler crane, Construction elevator, passenger lift and Bucket elevators.

**UNIT-IV:**

**Aggregate and concrete producing equipment:** Crushers – Jaw, Gyratory, Hammer and Roll Crushers, Screens – Stationary, Shaking and Vibrating screens. Concrete mixers and Concrete pumps.

**Pneumatic Equipment:** Reciprocating air-compressor, construction pneumatic tools; jack hammer, paving breaker, Rock drill, concrete vibrator.

**Learning Resources:**

1. R.L. Peurifoy, "Construction Planning Equipment and Methods", 7<sup>th</sup> Edition, McGraw-Hill Publishers, 1956.
2. Mahesh Varma, "Construction Equipment and its planning and application", Metropolitan books Co, Delhi, 2004
3. Goodes Spence, "Building and Civil Engineering Plant", Crosby Lock Wood, 1995.

**The break-up of CIE: Internal Tests+ Assignments + Quizzes**

- 1 No. of Internal Tests:  Max.Marks for each Internal Tests:
- 2 No. of Assignments:  Max. Marks for each Assignment:
- 3 No. of Quizzes:  Max. Marks for each Quiz Test:   
Duration of Internal Test: **1 Hour 30 Minutes**