5062 - MATERIAL HANDLING EQUIPMENT								
Teaching Schedule Per Week			Progressive Assessment		Examination Schedule (Marks)			
					Theory		Practical Ex.	Total
Lectures	Practical	Credit						
3	2	5	25	25	3 Hrs	100	25 oral	175

Pre-requisite	Source	Semester	Theory	Test	Total	TW	PR	Gr Total
Nil	MEC							

RATIONALE:- In an industry material handling technician will come across a variety of materials handling equipments and other associated attachments. His job may involve selection of appropriate handling equipment, supervise operator, carry out maintenance and inspection etc. This necessitates that the technician is equipped with sufficient knowledge in this regard. This course on material handling equipment is aimed in providing him the knowledge for carrying out above functions.

COURSE CONTENT	Hrs	Mks
1. HANDLING SYSTEM & CLASSIFICATION	6	12
1. Role of Equipment in Handling System & Classification of Equipment: Basic handling equipment types; Classification of equipment based on function performed; Classification of equipment based on movement; Use of free rolling, sliding, propelling and vibrating properties in material handling	18	36
2. WORKING AND CONSTRUCTION, Working and Construction, Advantages and Limitations of Selected Equipment 1 Cranes: Bridge cranes, Jib cranes, Stacker cranes, Revolving cranes, Derrick cranes, Mobile cranes 2 Conveyors: Roller conveyors, Troughed belt conveyors, Bucket conveyors, Apron conveyors, Arm conveyors, Car type conveyors, Flat belt conveyor, Steel slat conveyors, Screw conveyors, Vibrating conveyors, Flight conveyors, Trolley conveyors , Pneumatic conveyors 3 Industrial powered trucks: Dolleys, Four wheeled hand trucks, Semi live skid, Trailers, Fork lift trucks, Platform lift trucks , Walkie trucks, 4 Excavating Equipment's: Bull dozers, Power shovels, Draglines, Hoes, Scrappers, Reclaimers, Wheel loaders, Hydraulic excavators , 5 Bulk Handling Equipments, monorails and Hoists,		
3. LOAD ATTACHMENT ACCESSORIES 1 Lifting rings, 2 Chains,.3 sling ,.4 Grabs, 5 Hooks,.6 Lifting tackles, 7 Wire ropes,.8 Testing and specifying	8 5	16 12
4. SELECTION AND SAFETY REQUIREMENTS: Factors for consideration in selecting appropriate handling equipment for a particular application; Safety requirement in material handling; Need for safety and training	8	16
5. STUDY OF SYSTEMS 1 Powering systems, Study of powering systems, Electric motors: Duty cycle and other specifications as per I.S. for selection of motors for MHE – precautions and checks before and during operations, Power input required at prime mover point, Capacity of the equipment 2 Study of safety systems: Study of transmission systems used on various Handling equipments, Various types of Gear boxes, Worm gear box, Helical gear box, Variable speed gear box, Transmission systems	4	8
6. Trends and Automation in Handling: Trends in handling equipments, Automation in handling materials		
Total	48	100

TERM WORK

Term work shall consist of following

1. Study of at least six different types of handling equipments
2. Sketching of different types of hooks, grabs
3. Study of wire rope attachments
4. Study of safety aspects

REFERENCE BOOKS

1. material handling systems design by James M. Apple
2. Material handling equipment by M.P. Alexandrove.
3. Material handling , Principles and Practices by Theodore H.. Allegri
4. Conveyors related equipment by Don Dememanis
5. Materials management and Materials handling by S. C. Sharma.
6. Materials handling Equipment by R.B. Chowdary and G.R. N. Tagore.
7. Construction Planning, Equipment and methods by R. L. Peurifoy.