

5051 - SPECIAL VEHICLES									
Teaching Schedule Per Week			Progressive Assessment		Examination Schedule (Marks)				
Lectures	Practical	Credits			Theory		Practical Ex.		Total
3	2	5	25	25	3 Hrs.	100	-		150
Pre-requisite		Source	Semester	Theory	Test	Total	TW	PR	Gr Total
4062				75	25	100	25	-	125

Rationale: The past two decades have brought a total revolution in the machinery, methods and techniques used in construction, mining and other excavating projects. And as mining and construction are the backbone of the Industrial Development, it is primordial for an automobile engineer, to be conversant with the special vehicles used in earth moving and also to have a basic knowledge regarding the function, classification and major constructional features of the different type of special equipment used in such projects.

COURSE CONTENTS		Hrs	Mks
1. MAIN CONSTRUCTION EQUIPMENT		16	30
Function, classification and major features of main construction equipment namely :			
(a) Excavators (Power Shovels & Hyd. Excavators including attachments),			
(b) Dozers, traxcavators, wheel waders, scrapers & graders (including attachments),			
(c) Hauling equipment (Dumpers and Trailers)			
2. ADDITIONAL CONSTRUCTION EQUIPMENT		14	25
Function, classification and major features of main construction equipment namely:			
(a) Compacting equipment (plain & vibrating), (b) Dewatering equipment,			
(c) Pneumatic equipment (drills, hammer & mixers), (d) Hoisting equipment			
(cranes, fork cranes & accessories), (e) Trenching equipment (chain & wheel trenches)			

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3. BASIC SUB ASSEMBLIES	10	20
Salient features regarding modifications in basic sub assemblies like clutch, brake, transmission, differential, final drives, turbo charger and torque converter in relation to ordinary tractors.		
4. PREVENTION, MAINTENANCE AND REPAIR	6	20
Prevention, maintenance and repairs emphasising safety aspect, inspection, searching, field repair and lubrication of chassis and primovers of special equipment.		
5. PROMINENT MAKES IN INDIA	2	5
Prominent makes in India type of equipment manufactured in India. Horsepower of primovers and basic information about the other subassemblies.		
Total	48	100

TERM WORK:

1. To draw line diagram of the power transmission from the primover to tracks / wheels in different types of special vehicles.
2. To prepare sketches of accessories and attachment used in different types of special equipment.
3. To compile information regarding the special vehicles manufactured in India.

REFERENCE BOOKS:

1. Construction planning, equipment & methods by B. L. Peurrefoy.
2. Moving the earth by Herbert L. Nichols.
3. The art of earth moving by Sagma Singh.
4. Construction Planning, Equipment & Methods by Mahesh Verma.

