

## LESSON PLAN

**Name of Faculty: DR. SANJAY GUPTA**

**Discipline: AUTOMOBILE ENGINEERING**

**Semester: VI**

**Subject: TRACTOR AND SPECIAL PURPOSE VEHICLES**

**Lesson plan Duration: 15 WEEKS**

**Work Load (Lecture/Practical) per week: THEORY-3**

<b>WEEK</b>	<b>THEORY</b>	
	<b>LECTURE NO.</b>	<b>TOPIC</b>
<b>1<sup>ST</sup></b>	1	UNIT 1: Tractors Classification of tractors
	2	Main tractor assemblies, types of engine used
	3	Basics trends in tractor design
	4	Human factor in tractor design
<b>2<sup>ND</sup></b>	5	Tractor stability, weight performance
	6	Forces acting on a tractor on move, parallel pull and rolling resistance
	7	Applications of tractors
<b>3<sup>RD</sup></b>	8	UNIT 2: Tractor Chassis: Types of clutch used in tractors
	9	Transmission system layout
	10	Final drive, reduction gear
<b>4<sup>TH</sup></b>	11	Tractor brake system
	12	Operator seat design
<b>5<sup>TH</sup></b>	13	Draw bar working

	14	UNIT 3. Supplementary System Power take off shaft
	15	<b>Sessional Test-1</b>
<b>6<sup>TH</sup></b>	16	Double clutch system
	17	Belt pulley drive
	18	Traction control unit
<b>7<sup>TH</sup></b>	19	Three point linkages
	20	UNIT 4: Tractor Wheels and Tyres Salient features of wheels and tyres
	21	Wheel base/wheel tracks, height of frame, ground clearance
<b>8<sup>TH</sup></b>	22	Specifications of wheels and tyres
	23	Dual versus tandem tyres
	24	Effect of tyre inflation
<b>9<sup>TH</sup></b>	25	Tread design
	26	Differential lock
	27	Hydraulic system Functions of hydraulic system
<b>10<sup>TH</sup></b>	28	UNIT 5: Hydraulic system layout
	29	Various components of hydraulic system and their functions
	30	<b>Sessional Test-2</b>
<b>11<sup>TH</sup></b>	31	Methods of attaching implements
	32	Various control systems – depth control, position control
	33	Draft control system – manual
<b>12<sup>TH</sup></b>	34	Draft control system – automatic, combination control
	35	Working of hydraulic control levers
	36	Other uses of hydraulic control system

<b>13<sup>TH</sup></b>	37	UNIT 6: Special purpose vehicle Description and working principle of Bull Dozer
	38	Description and working principle of Cranes
	39	Description and working principle of Front end loader
<b>14<sup>TH</sup></b>	40	Description and working principle of Fire station vehicle
	41	UNIT 7: Repair and Maintenance Faults and their rectification in tractor
	42	Maintenance of tractor
<b>15<sup>TH</sup></b>	43	Selection criteria of a tractor
	44	Prominent makes of Indian tractors
	45	<b>Sessional Test-3</b>