

340- K L N MEMORIAL POLYTECHNIC COLLEGE

MADURAI-625009

LESSON PLAN

COURSE: MECHANICAL ENGINEERING

SEMESTER: 06

SUBJECT: INDUSTRIAL ENGINEERING & MANAGEMENT

SUB CODE: 4020610

HANDLED BY: M. LENIN KUMAR / DR. K. R. RAMESH BABU

WEEK	PORTIONS TO BE COVERED
I	SELECTION OF SITE FOR AN INDUSTRY PLANT LAYOUT- PRINCIPLES, TYPES, TECHNIQUES
II	MATERIAL HANDLING PRINCIPLES, EQUIPMENTS PLANT MAINTENANCE -TYPES, SAFETY ACCIDENTS – CAUSES, COST
III	ACCIDENT – PRONENESS, PREVENTION INDUSTRIAL DISPUTES – CAUSES, SETTLEMENT INDIAN FACTORIES ACT 1948 - PROVISIONS
IV	PRODUCTIVITY – OBJECTIVES, METHODS TO IMPROVE METHOD STUDY – OBJECTIVES, SELECTION OF JOB
V	METHOD STUDY – PROCEDURE, CHART & DIAGRAMS WORK MEASUREMENT - TIME STUDY PROCEDURE
VI	WORK MEASUREMENT – ALLOWANCES, TECHNIQUES
VII	PERSONAL MANAGEMENT – DEFINITION, PRINCIPLES LEADERSHIP – QUALITIES, TYPES MODERN MANAGEMENT TECHNIQUES
VIII	HRM – RESPONSIBILITY, PROCEDURE, TRAINING JOB EVALUATION, WAGES – COMPONENTS, METHODS
IX	WAGE PAYMENT - PROBLEMS ORGANIZATION – TYPES, APPROACHES, ENVIRONMENTAL EFFECTS, IMPLICATIONS
X	FINANCIAL MANAGEMENT – CAPITAL: TYPES, RESOURCES, FACTORY COSTING SELLING PRICE OF A PRODUCT
XI	DEPRECIATION – CAUSES, METHODS, PROBLEMS STOCK CONTROL, ABC ANALYSIS OF INVENTORY
XII	MINIMUM STOCK, ECONOMIC ORDER QUANTITY – PROBLEMS, SUPPLY CHAIN MANAGEMENT
XIII	ENGG ETHICS – DEFINITION, TYPES, CORE QUALITIES SOLVING ETHICAL CONFLICTS, KOHIBERGS MORAL DEVELOPMENT
XIV	VALUE BASED ETHICS, INTELECTUAL PROPERTY RIGHTS, MORAL VALUES & INTEGRITY, RESPECT OTHERS
XV	OTHER HUMAN VALUES, STRESS MANAGEMENT

340- K L N MEMORIAL POLYTECHNIC COLLEGE

MADURAI-625009

LESSON PLAN

COURSE : MECHANICAL ENGINEERING

SEMESTER: 06

SUBJECT: E - VEHICLE TECHNOLOGY & POLICY

SUB CODE: 4020620

HANDLED BY: J.SAHAYA PETER DALY – 3RD YEAR, A - SECTION

HANDLED BY: A. BALAMURUGAN – 3RD YEAR, B - SECTION

WEEK	PORTIONS TO BE COVERED
1	CONVENTIONAL VEHICLE, AIR POLLUTION, HYBRID ELECTRICAL VEHICLES, DRIVE TRAIN SYSTEM.
2	ALL WHEEL DRIVES, PARTS OF DRIVE TRAIN SYSTEM, BEV, NECESSITY OF BEV.
3	DIFFERENCE BETWEEN BEV & CONVENTIONAL VEHICLE, ADVANTAGES OF BEV, HEV, FCEV.
4	ELECTRICAL VEHICLE, PERFORMANCE, ENERGY CONSUMPTION, CONCEPT OF HEV.
5	ARCHITECTURE OF HEV, SERIES AND PARALLEL, TYPES OF EV MOTOR, PMDC.
6	DC MOTOR DRIVE, HUB MOTOR, MERITS AND DEMERITS OF DC MOTORS, BLDC MOTOR DRIVE.
7	ELECTRO CHEMICAL BATTERIES, LEAD ACID BATTERIES, NICKEL BATTERIES, BMS.
8	CELL SERIES AND PARALLEL, BATTERY CHARGING, TRICKLE CHARGING, DC CHARGING AND MAINTENANCE.
9	BATTERY CHEMISTRY, EFFECTS OF EV, IMPACTS OF EV, INDIA ELECTRIC MOBILITY POLICY.
10	GLOBAL SCENARIO OF EV, ELECTRIC MOBILITY IN INDIA, NATIONAL ELECTRIC MOBILITY, ORIGINAL EQUIPMENT MANUFACTURES.
11	NEED OF EV POLICY, ADVANTAGES OF EV ECO, SCOPE OF EV POLICY, ARAI STANDARDS
12	AIS 038,039, GLOBAL IMPACT, TAMIL NADU E VEHICLE POLICY 2019, OBJECTIVES OF EV POLICY.
13	POLICY MEASURES, PROMOTE EV MANUFACTURING , REGULATION OF EV, CITY BUILDING CODS.
14	CAPACITY BUILDING, CHARGING STRUCTURE, IMPLEMENTING AGENCIES, R&D.
15	RECYCLING ECO SYSTEM, BATTERY AND EVS.

340- K L N MEMORIAL POLYTECHNIC COLLEGE

MADURAI-625009

LESSON PLAN

COURSE : MECHANICAL ENGINEERING

SEMESTER: 06

SUBJECT: AUTOMOBILE TECHNOLOGY

SUB CODE: 4020633

HANDLED BY: J.THIRUMALAI KUMARAN – 3RD YEAR, A - SECTION

HANDLED BY: P.T. KUMARAN – 3RD YEAR, B - SECTION

WEEK	PORTIONS TO BE COVERED
1	ENGINE COMPONENTS AND FUNCTIONS, VALVE MECHANISM, L.I.F.T COOLING SYSTEM.
2	TYPES OF COOLING SYSTEM, THERMOSTAT AND ITS TYPES, TROUBLES IN COOLING SYSTEM, TYPES OF LUBRICANTS.
3	TYPES OF LUBRICATING SYSTEM , TECHNIQUES, OIL FILTERS, TROUBLES , FUEL AND TYPES.
4	S. U ELECTRICAL PUMPS, DTSI, VTI, CCVTI , PGMFI, MPFI, SINGLE ACTING PUMP, FUEL INJECTION PUMP.
5	DISTRIBUTOR TYPE PUMP, CRDI SYSTEM, FUEL INJECTOR, SINGLE AND MULTI HOLE, PINTLE AND PINTAUX.
6	TYPES OF FILTERS, ALCOHOL, HYDROGEN, CNG, LPG, MERITS AND DEMERITS, POWER TRANSMISSION SYSTEM.
7	REAR ENGINE, REAR DRIVE, FOUR WHEEL DRIVE, TYPES OF CLUTCH, FLUID COUPLING AND GEAR BOX.
8	TYPES OF GEAR BOX, TROUBLES, UNIVERSAL JOINTS, SLIP JOINTS, GEAR ARRANGEMENTS.
9	WORM WHEEL, TYPES OF TUBE DRIVE, DIFFERENTIAL, TROUBLES, FLOATING AXLES.
10	STUB AXLE DRIVE, TOE IN AND TOE OUT, STEERING LINKAGES, RE CIRCULATING BALLS, TROUBLES.
11	STEERING GEAR TYPES, STEERING SYSTEM, SUSPENSION SYSTEM AND TYPES, SPRING TYPES, SHOCK ABSORBER AND ITS TYPES.
12	BRAKE SYSTEM AND ITS TYPES, WHEELS AND TYPES, TYRE COMPARISON.
13	BATTERY TYPES, METHOD OF CHARGING, RUNNING CLUTCH AND BENDIX DRIVE, SWITCH, ALTERNATOR.
14	REGULATOR, IGNITION SYSTEM AND ITS TYPES, TROUBLES AND REMEDIES, LIGHTING AND SIGNAL CIRCUIT.
15	WIPERS, EVS AND HEVS, HYBRID ELECTRIC VEHICLE, FUEL ANALYSIS, MOTOR VEHICLES ACT.

340- K L N MEMORIAL POLYTECHNIC COLLEGE

MADURAI-625009

LESSON PLAN

COURSE : MECHANICAL ENGINEERING

SUBJECT: SOLID MODELLING PRACTICAL

HANDLED BY: J.SAHAYA PETER DALY – 3RD YEAR, A - SECTION

HANDLED BY: A. BALAMURUGAN – 3RD YEAR, B - SECTION

SEMESTER: 06

SUB CODE: 4020640

WEEK	PORTIONS TO BE COVERED
1	CAD SOFTWARE, SKETCH, ELEMENTS, COMMANDS.
2	MIRROR, ROTATE, BLOCK, PARTMODELLING, REFERENCE PLANES, REFERENCE POINTS AND AXES, CO-ORDINATE SYSTEMS, REVOLVE, SWEEP, HELIX AND SPIRAL.
3	LOFTS , DOME, SHELL, DRAFT, RIP, WRAP, INTERSECT, HOLES, PATTERNS, ASSEMBLY APPROACHES, MATE, COINCIDENT.
4	SAVE, PLOT, MODEL VIEW, EXPLODED VIEW, PROJECTED VIEW, SECTION VIEW, APPEARANCE, RENDERING.
5	DRAW THE GIVEN MODEL 1 DRAWING USING 3D MODELING COMMANDS.
6	DRAW THE GIVEN MODEL 2 DRAWING USING 3D MODELING COMMANDS.
7	DRAW THE GIVEN MODEL 3 DRAWING USING 3D MODELING COMMANDS.
8	DRAW THE GIVEN MODEL 4 DRAWING USING 3D MODELING COMMANDS.
9	DRAW THE GIVEN MODEL 5 DRAWING USING 3D MODELING COMMANDS.
10	DRAW THE GIVEN MODEL 6 DRAWING USING 3D MODELING COMMANDS.
11	REVOLVING CENTRE.
12	TAIL STOCK.
13	MACHINE VICE.
14	CRANE HOOK.
15	PETROL ENGINE CONNECTING ROD.
16	PIPE VICE.

LESSON PLAN

COURSE : DEPARTMENT OF MECHANICAL ENGINEERING

SUBJECT : AUTOMOBILE TECHNOLOGY PRACTICAL

SEMESTER : 6

SUB. CODE : 4020653

HANDLED BY : M. SELVA GANAPATHY (III YEAR A SEC)

HANDLED BY : P.T. KUMARAN (III YEAR B SEC)

Weeks	Portion to be covered
1	Introduction about Automobile Technology.
2	Dismantling and Assembling of four stroke petrol engine.
3	Removing camshaft replacing timing gears, removing valves.
4	Removing, servicing and replacing of fuel pump, oil pump, water pump.
5	Removing, servicing and replacing MPFI system.
6	Dismantling and assembling of CRDI system
7	Test a battery with specific gravity test
8	Test a battery with voltage method.
9	Removing and replacing of pressure and clutch plate.
10	Dismantling and inspection of constant mesh gear box.
11	Dismantling, assembling and adjusting of steering gear box.
12	Dismantling and assembling starter motor.
13	Dismantling and assembling of alter motor.
14	Trace the automobile electrical system with respect to battery coil system.
15	Trace the automobile electrical system with respect to horn relay circuit.
16	Trace the automobile electrical system with respect to wiper circuit.