BISHNUPUR PUBLIC INSTITUTE OF ENGINEERING
MECHANICAL DEPT
3RD YR 5TH SEM

		LECTURE SCHEDULE-ADVANCED MANUFACTURING PROCESSES	Total marks=100(tTheory=70,internal=30)			
Subject Code		Course offered in Part – III 1st Semester	OBJECTIVE	INPUT	LEARNING OUTCOME	Date of Delivery
DAY	Title	Topics to be coverd				
Day 1	traditional machining processes	Electrical discharge Machining,Principle of working	WORKING PRINCIPLE OF EDM	PULSE GENERATER(DC), PRODUCTION OF ELECTRIC SPARK, HEATING AFFECT,	FEATURES OF EDM MACHINE, WORKING	
Day 2		Setup of EDM, Dielectric fluid, tools (electrodes),	CONSTRUCTION OF MACHINE, DIELECTRIC MEDIUM, CUTTING TOOL(ELECTRODES)	DC POWER SOURCE, SERVO MOTOR, ELECTRODE, DIELECTRIC, PUMP, FILTER	CONSTRUCTION OF EDM, USED TOOLS ETC	
Day 3		Process parameters, Output characteristics, Applications e.g. microhole drilling,	APPLICATION OF EDM, PROCESS PATAMETER	CURRENT VOLTAGE CHARACTERISTICS, APPLICATION LIKE MICROHOLE, DESIGN WORK	APPLICATION OF EDM PROCESS IN DIFFERENT FIELD	
Day 4		curve hole drilling.Wire cut EDM - Principle of working,	SPECIAL APPLICATION OF EDM	CURVE HOLE DRILLING, WIRE CUT PRINCIPLE	HOW TO USE EDM FOR SECIAL PURPOSE	
Day 4		Setup of WEDM, controlling Parameters, Applications.	CONSTRUCTION OF WEDM, APPLICATION	POWER SOURCE, TOOLS, DIELECTRIC, PUMP, APPLICATION FIELD	CONSTRUCTION OF WEDM, USED TOOLS ETC, APPLICATION	
Day 5		Laser Beam Machining.Physical principle of Laser,Laser action in ruby rod, Types of Lasers.	LASER FUNDAMENTALS, TYPES, PRINCIPLE OF WORKING	FORMATION OF BEAM, PRINCIPLE OF WORKING, RUBY ROD, TYPES OF LASER	PRINCIPLE OF LASER AND ITS TYPES	
Day 6		Set-up for LBM	CONSTRUCTIONAL FEATURES OF LBM	FLASH LAMP, REFLACTING MIRROR, FOCUS LENS, LASER BEAM, WORKPIECE	CONSTRUCTIONAL FEATURES OF LBM	

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Subject Code		Course offered in Part – III 1st Semester	OBJECTIVE	INPUT	LEARNING OUTCOME	Date of Delivery
DAY	Title	Topics to be coverd				
Day 7	Non	Characteristics, controlling Parameters, Applications,	CHARACTERISTICS AND APPLICATION OF LBM	V-I CURVE, CONTROLLING PARAMETER(CURRENT, VOLT, FOCUL LENGTH), APPLICATION	CHARACTERISTICS AND APPLICATION OF LBM	
Day 8		Application Of Laser Beam for Welding (LBW)	APPLICATION OF LBW	MICRON PARTS WELDING, ACCURATE, METAL AND NON-METAL WELDING	APPLICATION OF LBW	
Day 9		Principle of working & Applications of ECM & USM	WORKING PRINCIPLE OF ECM AND ITS APPLICATION	CHEMICAL MEDIUM (ELECTROLYTE) USED, TOOLS, ANODE, CATHODE, APPLICATION	WORKING PRINCIPLE OF ECM AND ITS APPLICATION	
Day 10		Principle of working & Applications of ECM & USM	WORKING PRINCIPLE OF USM AND ITS APPLICATION	TRANSDUCER, ULTRASONIC TOOL, ABRASIVE SLURRY NOZZLE, OSCILLATOR, FIXTURE	WORKING PRINCIPLE OF USM AND ITS APPLICATION	
Day 11	Jigs and Fixtures	Introduction. Difference between jig and fixture	BASICS OF JIGS AND FIXTURES	DIFFERENCE BETWEEN JIGS AND FIXTURE	WHAT IS THE DIFFERENCE BETWEEN THEM	
Day 12		Different components of Jig/ fixture	COMPONENTS OF JIGS AND FIXTURES	LOCATING SYSTEM, CLAMPING SYSTEM, SKELETON OR BODY	CONSTRUCTIONAL FEATURES OF JIGS AND FIXTURES	
Day 13		principle of location. Types of locators and clamping dev	TYPES OF LOCATOR AND CLAMPING DEVICES	DIAMOND PIN LOCATOR, JACK PIN LOCATOR, ADJUSTABLE PIN LOCATOR,SCREW CLAMP, POWER CLAMP,QUICK ACTION CLAMP	TYPES OF LOCATOR AND CLAMPING DEVICES	

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Subject Code		Course offered in Part – III 1st Semester	OBJECTIVE	INPUT	LEARNING OUTCOME	Date of Delivery
DAY	Title	Topics to be coverd				
Day 14		General principles of jig/fixture design.Types of jigs and fixtures.	PRINCIPLE OF JIGS AND FIXTURE DESIGN	RIGIDITY, FOOL PROOFING, CLEARANCE ETC	PRINCIPLE OF JIGS AND FIXTURE DESIGN	
Day 15		Concept of NC & CNC, CNC Turning Centre, Advantages & Disadvantages of CNC machine tools,	BASICS OF NC, CNC, ADVANTAGES AND DISADVANTAGES OF CNC	CONCEPT OF NC MACHINE, CNC TURNING CENTER, ADVANTAGES	BASICS OF NC, CNC, ADVANTAGES AND DISADVANTAGES OF CNC	
Day 16		Applications of NC/CNC Machine, Classification of CNC M/C Tools (Based on motion type, based on control loops, based on axis, based on power supply),	APPLICATION OF CNC, CLASSIFICATION OF CNC, BASICS OF CONTROLLING SYSTENS	TYPES OF MOTION, CONTROL LOOPS, AXIS SYSTEM, POWER SUPPLY BASIS	DIFFERENT CLASSIFICATION OF CNC MACHINES	
Day 17		Different components of CNC machine tools & their functions,Components of CNC System (function & application): Stepper motor, Servo motor, Encoders (rotary & linear encoder),Recirculating ball screw, Automatic tool changer,	DIFFERENT COMPONENT AND FUNCTIONS OF CNC MACHINE	STEPPER MOTOR, SERVO MOTOR, ENCODER, AUTOMATIC TOOL CHANGER, CUTTING TOOL	DIFFERENT COMPONENT AND FUNCTIONS OF CNC MACHINE	
Day 18		Tool magazine. work holding methods for turning centre(name & relative advantage &disadvantage), work holding methods for machining centre(name & relative advantage & disadvantage), steps in CNC process.	DIFFERENT METHODS OF WORK HOLDING AND ITS ADVANTAGES, STEPS IN CNC PROCESS	DIFFERENT METHODS OF WORK HOLDING AND ITS ADVANTAGES, STEPS IN CNC PROCESS	STEPS USED IN CNC MACHINING PROCESS	

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Subject Code		Course offered in Part – III 1st Semester	OBJECTIVE	INPUT	LEARNING OUTCOME	Date of Delivery
DAY	Title	Topics to be coverd				
Day 19	CNC Machine Tools:	Part Programming: concept of part programming, reference point (Machine Zero,Program Zero, Part Origin), Axis identification of Turning Centre & Machining Centre,	CONCEPT OF PART PROGRAMMING, AXIS IDENTIFICATION OF TURNING CENTER AND MACHINING CENTER	MACHINE ZERO, PROGRAM ZERO, AXIS SYSTEM, PART PROGAME WRITING	CONCEPT OF PART PROGRAMMING, AXIS IDENTIFICATION OF TURNING CENTER AND MACHINING CENTER	
Day 20		CNC Codes for manual part programming G – codes, M- Codes, Spindle speed control, feed rate control, Tool selection) part programming for turning centre using different codes & fixed cycles (canned cycle, do-loop & Subroutine) to get step, taper,	PROGRAMMING CODES: G-CODE, M-CODE, S-CODE, F-CODE, T-CODE	FUNCTION OF EACH CODE AND THEIR WORKING POSITION	PROGRAMMING CODES: G-CODE, M-CODE, S-CODE, F-CODE, T-CODE	
Day 24		plain & circular turning, facing, external threading & parting off operation.	DIFFERENT OPERATION THROUGH CNC TOOL	PLAIN AND CIRCULAR TURNING, FACING, THREAD CUTTING, PARTING	APPLICATION OF CNC IN DIFFERENT OPERATIONS	
Day 25		part programming for machining centre considering Cutter radius compensation,ramp on/off motion, tool offset and using different codes,	DIFFERENT CODES AND PROGRAMMING USED FOR CUTTER RADIUS COMPENSATION, TOOL OFFSET	SPECIAL CODES USED FOR CUTTER RADIUS COMPENSATION, TOOL OFFSET	DIFFERENT CODES AND PROGRAMMING USED FOR CUTTER RADIUS COMPENSATION, TOOL OFFSET	

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Subject Code		Course offered in Part – III 1st Semester	OBJECTIVE	INPUT	LEARNING OUTCOME	Date of Delivery
DAY	Title	Topics to be coverd				
Day 26		canned cycles & subroutine for generating different milled surface. CNC part program verification.	CNC PART PROGRAMMING VARIFICATION, CANNED CYCLES, SUBROUTING	CNC PART PROGRAMMING VARIFICATION, CANNED CYCLES, SUBROUTING	CNC PART PROGRAMMING VARIFICATION, CANNED CYCLES, SUBROUTING	
Day 27		Principles of computer aided part programming.	PRINCIPLE OF COMPUTER AIDED PART PROGRAMMING	PART GEOMETRY, TOOL PATH SPECIFICATION, ARITHMETIC CALCULATION,	PRINCIPLE OF COMPUTER AIDED PART PROGRAMMING	
Day 28		REVISION				
Day 29		REVISION				
Day 30	FMS	Concept, Basic components of FMS (Different workstations, Automated material handling & storage system,	BASIC CONCEPT OF FMS AND ITS COMPONENTS	DIFFERENT WORKSTATIONS, AUTOMATED MATERIAL HANDLING AND STORAGE SYSTEM	BASIC CONCEPT OF FMS AND ITS COMPONENTS	
Day 31		computer control system	COMPUTER CONTROL SYSTEM IN FMS	COMPUTER CONTROL SYSTEM IN FMS	COMPUTER CONTROL SYSTEM IN FMS	
Day 32		types of FMS layout,	DIFFERENT TYPES OF FMS LAYOUT	PROGESSIVE ORLINE TYPE, LADDER TYPE, OPEN FIELD TYPE, LOOP TYPE, ROBOT CENTERED TYPE	DIFFERENT TYPES OF FMS LAYOUT	
Day 33		objectives of FMS, advantages & disadvantages of FMS.	OBJECTIVE, ADVANTAGES AND DISADVANTAGES OF FMS	FLEXIBILITY, AUTOMATION, LEAD TIME, HIGH PRODUCTIVITY, MAN POWER	OBJECTIVE, ADVANTAGES AND DISADVANTAGES OF FMS	
Day 34		REVISION				

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Subject Code		Course offered in Part – III 1st Semester	OBJECTIVE	INPUT	LEARNING OUTCOME	Date of Delivery
DAY	Title	Topics to be coverd				
Day 35		REVISION				
Day 36		REVISION				

PREPARED BY--SIBASISH GHARA,DEBLINA BISWAS

Lecturer's Signature

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MECHANICAL DEPT

3RD YR 5TH SEM

		LECTURE SCHEDULE-AUTOMOBILE ENGINEERING – I (ELECTIVE-I)	Total marks 50 (theory=35,internal=15)			
Subject Code		Course offered in Part – III 1st Semester	OBJECTIVE	INPUT	LEARNING OUTCOME	GOOGLE ATTENDANCE
DAY	Title	Topics to be coverd				
Day 1	INTRODUCTION	History of I.C engine, external engine, Classification of I.C engine	OVERVIEW OF INTERNAL COMBUSTION AND EXTERBNAL CONBUSTION ENGINE, CLASSIFICATION OF IC ENGINE	OTTO AND RUDOLF DIESEL INVENTION, CLASSIFICATION ACCORDING TO CYCLE OF OPERATION, THERMODYNAMIC CYCLE, METHOD OF IGNITION, NO. OF CYLINDERS, COOLING SYSTEM	CONCEPT OF IC AND EC ENGINE AND ITS CLASSIFICATION	
Day 2		Automobile, components of automobile	TYPES OF AUTOMOBILE AND ITS COMPONENTS	ENGINE, POWER TRANSMISSION SYSTEM,SUSPENSION SYSTEM, STEERING SYSTEM, BRAKING SYSTEM, ELECTRICAL SYSTEM,	FUNCTIONS AND LOCATIONS OF AUTOMOBILE COMPONENTS	
Day 3		Construction, materials & functions	CONSTRUCTIONAL FEATURES OF AUTOMOBILE, MATERIAL AND FUNCTIONS	NON-FERROUS METALS, ELECTRICAL PARTS, PROCESS POLYMERS, TYRES, RUBBER, GLASS,	DIFFERENT MATERIAL USED IN AUTOMOBILE CONSTRUCTION	
Day 4		Cylinder block, cylinder liners (wet & dry liners),cylinder head, crankcase, oil pan & gasket	DIFFERENT COMPONENTS OF PISTON CYLINDER ARRANGEMENT	CYLINDER BLOCK, CYLINDER LINERS, CYLINDER HEAD, CRANKCASE, OIL PAN AND GASKET	DIFFERENT COMPONENTS OF PISTON CYLINDER ARRANGEMENT	

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3RD YR 5TH SEM

		LECTURE SCHEDULE-AUTOMOBILE ENGINEERING – I (ELECTIVE-I)	Total marks 50 (theory=35,internal=15)			
Subject Code		Course offered in Part – III 1st Semester	OBJECTIVE	INPUT	LEARNING OUTCOME	GOOGLE ATTENDANCE
DAY	Title	Topics to be coverd				
Day 5	CONSTRUCTIONAL FEATURES	Piston. piston clearance, advantages & disadvantages of al-alloy piston to cast iron piston	ADVANTAGES AND DISADVANTAGES OF AL-ALLOYPISTON AND CAST IRON PISTON	PISTON, PISTON CLEARANCE, COMPARISON BETWEEN AL ALLOY PISTON AND CAST IRON PISTON	ADVANTAGES AND DISADVANTAGES OF AL-ALLOYPISTON AND CAST IRON PISTON	
Day 6		Piston rings, compression rings, oil control rings, blow by	FUNCTIONS AND LOCATIONS OF PISTON RINGS	PISTON RING, COMPRESSION RING, OIL CONTROL RINGS,	FUNCTIONS AND LOCATIONS OF PISTON RINGS	
Day 7		Piston pin, types, connecting rod, crankshaft	FUNCTION AND USED MATERIAL FOR PISTON PIN, CONNECTING ROD, CRANKSHAFT	PISTON PIN, CONNECTING ROD, CRANKSHAFT	FUNCTION AND USED MATERIAL FOR PISTON PIN, CONNECTING ROD, CRANKSHAFT	
Day 8		Flywheel, vibration damper	FUNCTION OF FLYWHEEL AND VIBRATION DAMPER	PRIMARY FLYWHEEL, SECONDARY FLYWHEEL, PLANOTARY GEAR,	FUNCTION OF FLYWHEEL AND VIBRATION DAMPER	
Day 9		Valve gear ,types of valve actuating mechanism	CONCEPT OF VALVE ACTUATING MECHANISM AND VALVE GEAR	OVER HEAD VALVE MECHANISM, SIDE VALVE MECHANISM, PNEUMATIC VALVE ACTUATER, VARIABLE VALVE ACTUATER	CONCEPT OF VALVE ACTUATING MECHANISM AND VALVE GEAR	

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3RD YR 5TH SEM

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Subject Code		Course offered in Part – III 1st Semester	OBJECTIVE	INPUT	LEARNING OUTCOME	GOOGLE ATTENDANCE
DAY	Title	Topics to be coverd				
Day 10		over head valve actuating mechanism ,working principle,	WORKING PRINCIPLE OF OVER HEAD VALVE ACTUATING MECHANISM	VALVE LIFTER, PUSH ROD, CAM, VALVE SPRING, ROCKER ARM, ADJUSTING SCREW	WORKING PRINCIPLE OF OVER HEAD VALVE ACTUATING MECHANISM	
Day 11		components, tappet clearance	COMPONENTS OF VALVE ACTUATING MECHANISM, TAPPET CLEARANCE	COMPONENTS OF VALVE ACTUATING MECHANISM, BUCKET TAPPET, HYDRAULIC TAPPET	COMPONENTS OF VALVE ACTUATING MECHANISM, TAPPET CLEARANCE	
Day 12		Timing gears, camshaft	FUNCTION OF TIMING GEARS AND CAMSHAFT	FUNCTION OF CAMSHAFT, CRANKSHFT GEAR, TIMING GEAR WHEEL, VALVE CAMSHAFT GEAR, IDLE GEAR, FUEL CAMSHAFT	FUNCTION OF TIMING GEARS AND CAMSHAFT	
Day 13		Fuel feed system in S.I engine, types, gravity & pump fee	CONCEPT OF FUEL FEED SYSTEM IN SI ENGINE AND ITS TYPES	GRAVITY SYSTEM, PRESSURE SYSTEM, VACCUM SYSTEM, PUMP SYSTEM, FUEL INJECTION SYSTEM	CONCEPT OF FUEL FEED SYSTEM IN SI ENGINE AND ITS TYPES	
Day 14		layout of S.I engine fuel pump system, function of each components	FUNCTION OF EACH COMPONENTS OF SI ENGINE FUEL PUMP SYSTEM AND ITS LAYOUT	ECU, PRESSURE REGULATOR, FUEL TANK, HIGH PRESSURE FUEL PUMP	FUNCTION OF EACH COMPONENTS OF SI ENGINE FUEL PUMP SYSTEM AND ITS LAYOUT	

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Subject Code		Course offered in Part – III 1st Semester	OBJECTIVE	INPUT	LEARNING OUTCOME	GOOGLE ATTENDANCE
DAY	Title	Topics to be coverd				
Day 15	FUEL SUPPLY SYSTEM	Fuel mixing & circuit control system, carburetor, types	AIR-FUEL MIXING SYSTEM, TYPES OF CARBURATOR	CONSTRUCTION OF SIMPLE CARBURATOR, UPDRAUGHT, DOWNDRAUGHT, CROSS DRAUGHT	AIR-FUEL MIXING SYSTEM, TYPES OF CARBURATOR	
Day 16		working principle of simple carburetor, requirement of air- fuel ratio, defects of carburetor& its remedy	WORKING PRINCIPLE OF SIMPLE CARBURATOR, DEFECTS OF CARBURATOR AND REMEDY	WORKING PRINCIPLE OF SIMPLE CARBURATOR, STOICHIOMETRIC MIXTURE, RICH MIXTURE, LEAN MIXTURE, AIR- FUEL RATIO	WORKING PRINCIPLE OF SIMPLE CARBURATOR, DEFECTS OF CARBURATOR AND REMEDY	
Day 17		Circuits of carburetor, float, starting, idling, low speed, high speed & accelerating circuit	CIRCUITS OF CARBURATOR, CONCEPT OF FLOAT, STARTING, IDLING	CHOKE CIRCUIT, IDLE CIRCUIT, FLOAT CIRCUIT, ACCELERATION CIRCUIT, STARTER CIRCUIT, FLOAT, STARTING, IDLING, LOW SPEED, HIGH SPEED,	CIRCUITS OF CARBURATOR, CONCEPT OF FLOAT, STARTING, IDLING	
Day 18		Petrol injection system, types	TYPES OF PETROL INJECTION SYSTEM	MANIFOLD INJECTION, GASOLINE INJECTION, MPFI, SINGLE POINT INJECTION, THROTTLE INJECTION, PORT INJECTION	DIFFERENT TYPES OF PETROL INJECTION SYSTEM	
Day 19		layout & working principle of multi point fuel injection system, advantages & disadvantages	WORKING PRINCIPLE AND LAYOUT OF MPFI AND ITS ADVANTAGES AND DISADVANTAGES	WORKING PRINCIPLE AND LAYOUT OF MPFI AND ITS ADVANTAGES AND DISADVANTAGES	WORKING PRINCIPLE AND LAYOUT OF MPFI AND ITS ADVANTAGES AND DISADVANTAGES	
Day 20		Fuel supply system in C.I engine, layout	WORKING OF FUEL SUPPLY SYSTEM IN CI ENGINE AND ITS LAYOUT	WORKING OF FUEL SUPPLY SYSTEM IN CI ENGINE AND ITS LAYOUT	WORKING OF FUEL SUPPLY SYSTEM IN CI ENGINE AND ITS	
Day 21		components ,function, types	COMPONENTS OF FUEL SUPPLY SYSTEM IN CI ENGINE	FUEL PUMP, SPEED SENSORS, OTHER ACTUATORS, CONTOL UNIT, INJECTOR	COMPONENTS OF FUEL SUPPLY SYSTEM IN CI ENGINE	

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Subject Code		Course offered in Part – III 1st Semester	OBJECTIVE	INPUT	LEARNING OUTCOME	GOOGLE ATTENDANCE
DAY	Title	Topics to be coverd				
Day 22		working & line diagram of common rail, individual pump s	WORKING AND LINE DIAGRAM OF COMMON RAIL, INDIVIDUAL PUMP SYSTEM	WORKING AND LINE DIAGRAM OF COMMON RAIL, INDIVIDUAL PUMP SYSTEM	WORKING AND LINE DIAGRAM OF COMMON RAIL,	
Day 23		fuel injectors, single orifice, multiple orifice	FUNCTION OF FUEL INJECTORS, SINGLE ORIFICE, MULTIPLE ORIFICE	WORKING OF FUEL INJECTOR, AND ORIFICE SYSTEM	CONCEPT OF INJECTOR AND ORIFICE	
Day 24	CONTROL SYSTEM	Steering system- Requirement of steering system	WORKING OF STEERING SYSTEM	RACK AND PINION,STEERING WHEEL	LIGHT FORCE IS NEEDED TO STEER A HEAVY CAR	
Day 25		Construction and working ofsteering linkage	CONSTRUCTION AND WORKING OF STEERING SYSTEM	ARMS ,RODS AND BALL SOCKETS	CONNECTS TO THE FRONT WHEELS	
Day 26		Steering gear box- construction & working of rack and pinion & recirculating ball type gearbox	CONSTRUCTION AND WORKING OF RACK AND PINION	GEAR MESHED,NO BACKLASH IN GEAR	GIVES PRECISE STEERING	
Day 27		Introduction to Power steering,	POWER STEERING WORKING PRINCIPLE	ACTUATORS-HYDRAULIC OR ELECTRIC	MAKES IT EASIER FOR VECHICLES TO TURN	
Day 28		Steering geometry- camber, caster, toe-in, toe-out, Kingpin inclination & their effects.	WORKING OF GEOMETRY OF STEERING	ACKERMANN STEERING GEOMETRY	TELLS US ABOUT THE ANGULAR RELATIONSHIP BETWEEN SUSPENSION AND STEERING PARTS	

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Subject Code		**Course offered in Part – III 1st Semester**	OBJECTIVE	INPUT	LEARNING OUTCOME	**GOOGLE ATTENDANCE**
DAY	**Title**	**Topics to be coverd**				
Day 29		Brake system- construction & working of hydraulic & Pneumatic brakes. Comparison of disc & drum brake.	WORKING OF BRAKE SYSTEM	HYDRAULIC AND PNEUMATIC BRAKES,BRAKE PEDAL,AIR VALVE	INHIBITS MOTION BY ABSORBING ENERGY FROM MOVING SYSTEM	
Day 30		Revision				
Day 31		Revision				
Day 32	E TRANSMISSION	Working & construction of Clutch	WORKING AND CONSTRUCTION OF CLUTCH	DRIVING SHAFT,DRIVEN SHAFT	TELLS US ABOUT THE WORKING PRINCIPLE OF CLUTCH	
Day 33		construction & working of coil spring & diaphragm spring type clutch	WORKING AND CONSTRUCTION OF COIL SPRING	COMPRESSION SPRINGS,CLUTCH DISC	UNDERSTANDING ABOUT HOW A COIL SPRING	
Day 34		Gear Box- tractive effort and tractive resistance	GEAR BOX FUNCTIONS AND WORKING	COUNTER SHAFT,MULTIPLE GEARS	WORKING OF GB,WIDELY USED	
Day 35		types of G.B construction & working of constant mesh G	TYPES OF GB	HELICAL,COAXIAL,BEVEL HELICAL GEAR BOX	UNDERSTANDING ABOUT TYPES OF GB USED	
Day 36		Working & construction of synchromesh G.B	WORKING OF SYNCHROMESH GB	SYNCHRONIZER,COUNTER SHAFT,REVERSE IDLER	HOW SYNCHROMESH GB WORKS	
Day 37		Working & construction of Epicyclic G.B	WORKING OF EPICYCLIC GB	RING GEAR,PLANETARY CARRIER	HOW EPICYCLIC GB WORKS	
Day 38		Torque converter, Overdrive, Transfer case	WORKING OF TORQUE CONVERTER	ROTATING POWER ,ROTATING DRIVEN LOAD,POWER SOURCE	BRIEF IDEA ABOUT TORQUE CONVERTER	

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Subject Code		Course offered in Part – III 1st Semester	OBJECTIVE	INPUT	LEARNING OUTCOME	GOOGLE ATTENDANCE
DAY	Title	Topics to be coverd				
Day 39	AUTOMOBIL	Final drive- necessity, construction & working of propelle	WORKING AND CONSTRUCTION OF PROPELLER SHAFT	DRIVE SHAFT,TORQUE TANSMISSION ,DIFFERENTIAL	BRIEF IDEA ABOUT PROPELLER	
Day 40		Construction & working of Diffrential	WORKING AND CONSTRUCTION OFDIFFRENTIAL	SUN GEAR,PLANET PINION,DRIVING PINION	IDEA ABOUT DIFFRENTIAL IN TRANSMISSION SYSTEM	
Day 41		Construction & working of Axle	FUNCTIONS OF AXLE	SHAFT,ROTATING WHEEL	AXLE AND AITS USES	
Day 42		Type of rear axles, front axles & their applications	DIFFERENT TYPES OF AXLE	DRIVING WHEELS,SWIVEL PIN,KINGPIN	DIFFERENT TYPES OF AXLE USED NOWADAYS	
Day 43		Revision				
Day 44		Revision				
Day 45		Revision				
Day 46		Revision				
Day 47		Necessity & classification of suspension system.	WORKING OF SUSPENSION SYSTEM	FORCE DISSIPATION,SPRINGS,DAMPERS,STRUTS	BRIEF IDEA ABOUT SUSPENSION SYSTEM IN	
Day 48		Working & construction of Leaf spring	WORKING AND CONSTRUCTION OF LEAF SPRING	SPRING STEEL,GRADATION IN SIZE	CONSTRUCTION AND WORKING OF LEAF SPRINGS	

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Subject Code		Course offered in Part – III 1st Semester	OBJECTIVE	INPUT	LEARNING OUTCOME	GOOGLE ATTENDANCE
DAY	Title	Topics to be coverd				
Day 49	SUSPENSION SYSTEM,WHEELS&TYRES	Working & construction of Rigid Axle Suspension	WORKING AND CONSTRUCTION OF RIGID AXLE SUSPENSION	SET OF WHEELS,ROLLING,PITCHING	AXLE SUSPENSION BRIEF IDEA	
Day 50		Introduction to air suspension	MAIN PRINCIPLE OF AIR SUSPENSION	COMPRESSOR,AIR FILTER,AIR SPRING	AIR SUSPENSION ROLE IN SUSPENSION SYSTEM	
Day 51		Construction & working of McPherson & wishbone link s	WORKING AND CONSTRUCTION OF DIFFERENT LINK SUSPENSION	STEERING KNUCKLE,SPRING LEG	BRIEF IDEA DIFFERENT LINK SUSPENSIONS	
Day 52		Construction & working of Trailing Link Suspensions	WORKING AND CONSTRUCTION OF DIFFERENT LINK SUSPENSION	LATERAL ROD,SHOCK ABSORBER, COIL SPRING	BRIEF IDEA ABOUT TRAILING LINK SUSPENSIONS	
Day 53		Construction & working of telescopic shock absorbers.	WORKING AND CONSTRUCTION OF TELESCOPIC SHOCK ABSORBERS	FOOT VALVE,AXLE ,PIVOT POINT	FUNCTIONS OF TELESCOPIC SHOCK IN SYSTEM	
Day 54		Construction & working of spoked wheel, disc wheel &	WORKING AND CONSTRUCTION OF WHEEL	FRICTION,FORCE MULTIPLERS	BRIEF IDEA ABOUT WHEEL VITAL IMPORTANCE	
Day 55		Types of rims, their construction & working.	TYPES OF RIMS	LOCKING RING RIM,LOCKING RING	FUNCTIONS AND DIFFERENT RIMS USED	
Day 56		Construction& Working of radial, cross-ply and tubed, tubeless tyre & tyre specifications	DIFFERENT TYPES OF TYRES AND WORKING	AIR TIGHT RUBBER,WHEEL RIM	IDEA ABOUT TYRES PREVENTIVE MEASURES	

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Subject Code		Course offered in Part – III 1st Semester	OBJECTIVE	INPUT	LEARNING OUTCOME	GOOGLE ATTENDANCE
DAY	Title	Topics to be coverd				
Day 57		Comparison Between Different Types Of Tyres	DIFFERENCE BETWEEN DIFFERENT TYPES OF TYRES	TUBED, TUBELESS	DIFFERENT TYRES USED	
Day 58		Factors affecting tyre life	TYRE LIFE FACTORS	SPEED,PREESURE,LOAD	MEASURES TAKEN TO IMPROVE TYRE LIFE CYCLE	
Day 59		Wheel Alignment and Balancing	WHEEL ALIGNMENT	WEAR AND TEAR,TYRE ANGLES	IDEA ABOUT WHEEL ALIGNMENT IN	
Day 60	OMOBILE ELECTRICAL SYSTEM& BODY	Construction and Working of Battery ,Battery Rating	WORKING OF LEAD ACID,LITHIUM ION BATTERY	CATHODEAND ANODE REACTION,DILUTE SULPHURIC ACID	BATTERY WORKING,DIFFERENT TYPE USED	
Day 61		Construction and Working of Ignition System	WORKING OF IGNITION SYSTEM	ELECTRIC SPARK,IGNITE MIXTURE OF PETROL AND AIR	CREATION OF ELECTRIC SPARK IN ENGINE	
Day 62		Working of Electronic Ignition System	TO GENERATE SPARK BY TRANSISTORS	ELECTRONIC CIRCUITS,SENSORS	BETTER ECONOMY&LOWER EMISSION	
Day 63		Working of CDI Ignition System	WORKING OF CAPACITOR DISCHARGE IGNITION	IDI,CAPACITOR,SPARK PLUGS	GENERATES CHARGE AND STORES TO IGNITE	
Day 64		Construction &Working Of Starting Motor	WORKING OF STARTING MOTOR	MOTOR,MAGNETIC SWITCH,SAFETY SWITCH,BATTERY	PRODUCES HIGH POWER SO CAN OPERATE FOR A SHORT	
Day 65		Charging System:Construction&Working of Alternator	WORKING OF ALTERNATOR	CRANKSHAFT,RECTIFIER,DC CURRENT	WORKING OF BATTERY CHARGING IN VECHILES	
Day 66		Wiring System:Harnessing & Colour Codes	HOW WIRING IS DONE IN AUTOMOBILES	COLOUR CODED WIRES,INSULATING TAPES	WORKING OF WIRING SYSTEM	
Day 67		Working of Head Light,Tail light,Indicator Light and their	How LIGHTING SYSTEM WORKS	BATTERY,AMMETER,CIRCUIT BREAKER	LIGHTING SYSTEM WORKINGPRINCIPLE	

BISHNUPUR PUBLIC INSTITUTE OF ENGINEERING

MECHANICAL DEPT

3RD YR 5TH SEM

		LECTURE SCHEDULE-AUTOMOBILE ENGINEERING – I (ELECTIVE-I)	**Total marks 50 (theory=35,internal=15)**			
Subject Code		**Course offered in Part – III 1st Semester**	OBJECTIVE	INPUT	LEARNING OUTCOME	**GOOGLE ATTENDANCE**
DAY	**Title**	**Topics to be coverd**				
Day 68	**AUT**	Construction &Working of Fuel Level Gauges	WORKING OF FUEL LEVEL SENSORS	SENSING SYSTEM,GAUGE	MONITOR FUEL CONSUMPTION	
Day 69		Construction &Working of Oil Gauge and Water Tempera	WORKING OF OIL PRESSURE GAUGE	SENSOR,ELECTRIC GAUGES	INDICATOR TO ENGINE OVERALL	
Day 70		Use of Microprocessor in Automobile Control Systems	WHY MICROPROCESSOR ARE USED	ECM,ECU,RPM,MAP	MAINTAIN DESIRED FUELING AND IGNITION	
Day 71	**Revision**	Revision				
Day 72		Revision				
Day 73		Revision				
Day 74		Revision				
Day 75		Revision				
Day 76		Revision				

PREPARED BY ----- SIBASISH GHARA,ABHIJEET MANDAL

Lecturer's Signature----

BISHNUPUR PUBLIC INSTITUTE OF ENGINEERING
MECHANICAL 3RD YAER 5TH SEMESTER

		WORKSHOP SCHEDULE-ADVANCED MANUFACTURING				signature
Subject		Course offered in Part – III 1ST Semester				Full Marks 100(EXTERNAL=50,INTERNAL=50)
DAY	Title	Topics to be coverd	OBJECTIVE	INPUT	LEARNING OUTCOME	Date of Delivery
Day 1	EXP / STUDY	Study of Non traditional machining process like EDM, Wire EDM , ECM ,USM & also one assignment on the processes	concept of EDM,wire EDM machining process	EDM ,Wire EDM demonstration through youtube video	application of EDM ,Wire EDM machine,how to operate this machine,	
Day 2		Study of Non traditional machining process like EDM, Wire EDM , ECM ,USM & also one assignment on the processes	concept of USM machining process	USM demonstration through youtube video	application of USM machine,how to operate this machine,	
Day 3		Study of Non traditional machining process like EDM, Wire EDM , ECM ,USM & also one assignment on the processes	concept of ECM , machining process	ECM demonstration through youtube video	application of ECM machine,how to operate this machine,	
Day 4	EXP / STUDY	One assignment on part programming of straight turning , taper turning , radius forming operation in a turning centre	concept of taper turning ,straight turning,Radius forming oparation in lathe machine	Turning	application of taper turning,Straight turning & Radius forming Process	
Day 5		One assignment on part programming of straight turning , taper turning , radius forming operation in a turning centre	PART PROGRAMMING of Taper Turning	Taper Turning	How taper turning process is done by using codes	
Day 6		One assignment on part programming of straight turning , taper turning , radius forming operation in a turning centre	Part Programming Of Straight Turning, Radius Forming	Radius Forming & Straight Turning	How Radius Forming & Straight Turning process is done by using codes	
Day 7		Practice on making Eccentric turning in a round job using centre lathe.	What is eccentric turning	model of eccentric turning	Defination & application of eccentric turning.	

BISHNUPUR PUBLIC INSTITUTE OF ENGINEERING
MECHANICAL 3RD YAER 5TH SEMESTER

		WORKSHOP SCHEDULE-ADVANCED MANUFACTURING				signature
Subject		Course offered in Part – III 1ST Semester				Full Marks 100(EXTERNAL=50,INTERNAL=50)
DAY	Title	Topics to be coverd	OBJECTIVE	INPUT	LEARNING OUTCOME	Date of Delivery
Day 8	EXP / STUDY	Practice on making Eccentric turning in a round job using centre lathe.	Drawing of job with required dimension(eccentric turning) & marking on raw material	ECCENTRIC TURNING JOB MATERIAL-300mm (length)x100mm (dia), M.S bar	Structure of eccentric turning and how to mark a raw material	
Day 9		Practice on making Eccentric turning in a round job using centre lathe.	Process of Side cutting tool grinding	ECCENTRIC TURNING JOB MATERIAL-300mm (length)x100mm (dia), M.S bar	How to Grind a cutting tool	
Day 10		Practice on making Eccentric turning in a round job using centre lathe.	Centering of job	ECCENTRIC TURNING JOB MATERIAL-300mm (length)x100mm (dia), M.S bar	How to center a job	
Day 11		Practice on making Eccentric turning in a round job using centre lathe.	Process of Eccentric Turning	ECCENTRIC TURNING JOB MATERIAL-300mm (length)x100mm (dia), M.S bar	How eccentric turning is done in lathe machine i.e procedure	

BISHNUPUR PUBLIC INSTITUTE OF ENGINEERING
MECHANICAL 3RD YAER 5TH SEMESTER

		WORKSHOP SCHEDULE-ADVANCED MANUFACTURING				signature
Subject		Course offered in Part – III 1ST Semester				Full Marks 100(EXTERNAL=50,INTERNAL=50)
DAY	Title	Topics to be coverd	OBJECTIVE	INPUT	LEARNING OUTCOME	Date of Delivery
Day 12		Practice on making Eccentric turning in a round job using centre lathe.	Process of Eccentric Turning	ECCENTRIC TURNING JOB MATERIAL-300mm (length)x100mm (dia), M.S bar	How eccentric turning is done in lathe machine i.e procedure	
Day 13	EXP / STUDY	Practice on making simple job by CNC machining centre	Conept of CNC machining	CNC MACHINE	Application CNC machine	
Day 14		Practice on making simple job by CNC machining centre	Code of CNC programming & make a part program	CNC MACHINE	coding of various operations performed in CNC	
Day 15		Practice on making simple job by CNC machining centre	Step Turning operation in CNC machine	CNC MACHINE programming	using codes of cnc programing how to make step turning operation in a job in CNC lathe	
Day 16		Practice on making simple job by CNC machining centre	Facing & Turning operation in CNC machine	CNC MACHINE programming	using codes of cnc programing how to make Facing & Turning operation in a job in CNC lathe	
Day 17		Practice on making face milling, slotting, contour machining on a machining centre	Concept of Milling Machine	Milling Machine	Milling Machine parts & its function	
Day 18		Practice on making face milling, slotting, contour machining on a machining centre	Concept of Milling Cutters	Milling Cutters	Types of Milling cutters	
Day 19		Practice on making face milling, slotting, contour machining on a machining centre	Concept & Drawing of Face Milling,Slotting,Contour Machining	Milling Machine	What is face milling,Slotting,Contour operation	

BISHNUPUR PUBLIC INSTITUTE OF ENGINEERING
MECHANICAL 3RD YAER 5TH SEMESTER

		WORKSHOP SCHEDULE-ADVANCED MANUFACTURING				signature
Subject		**Course offered in Part – III 1ST Semester**				**Full Marks 100(EXTERNAL=50,INTERNAL=50)**
DAY	**Title**	**Topics to be coverd**	OBJECTIVE	INPUT	LEARNING OUTCOME	**Date of Delivery**
Day 20	**EXP / STUDY**	Practice on making face milling, slotting, contour machining on a machining centre	Process of Face milling	FACE MILLING-JOB MATERIAL-70mmx50mm,30mm, M.S Plate	How Face Milling is done in Milling Machine	
Day 21		Practice on making face milling, slotting, contour machining on a machining centre	Process of Slotting	Slotting JOB MATERIAL-80mmx25mm(dia), M.S Bar	How Slotting is done in Milling Machine	
Day 22		Practice on making face milling, slotting, contour machining on a machining centre	Process of Contour Machining	Contour Machining JOB MATERIAL-	How Contour Machiningis done in Milling Machine	
Day 23		Practice on making face milling, slotting, contour machining on a machining centre	Process of Gearing Cutting	SPUR GEAR JOB MATERIAL-20mmx 150mm(dia),M.S Bar	How Gear cutting is done in Milling Machine	

Instructor's sig **Lecturer's Signature**

BISHNUPUR PUBLIC INSTITUTE OF ENGINEERING

MECHANICAL DEPT

3RD YR 5TH SEM

		LECTURE SCHEDULE-FLUID MECHANICS & MACHINERY	Total marks=100(Theory=70,internal=30)			
Subject Code		Course offered in Part – III 1st Semester	OBJECTIVE	INPUT	LEARNING OUTCOME	GOOGLE ATTENDENCE
DAY	Title	Topics to be coverd				
Day 1	Properties of fluid	Density, Specific gravity, Specific Weight, Specific Volume	Fluid properties	Density, Specific gravity, Specific Weight, Specific Volume	understand density, Specific gravity, Specific Weight, Specific Volume	
Day 2		Dynamic Viscosity, Kinematics Viscosity, Surface tension, Capillarity	Fluid properties	Dynamic Viscosity, Kinematics Viscosity, Surface tension, Capillarity	properties of fluid	
Day 3		Vapour Pressure, Compressibility	Fluid properties	Vapour Pressure, Compressibility	properties of fluid	
Day 4		Revision				
Day 4		Revision				
Day 5		Fluid pressure, Pressure head, Pressure intensity	concept of Fluid pressure, Pressure head,	fluid pressure, Pressure head, Pressure intensity	fluid pressure, Pressure head, Pressure intensity	
Day 6		Concept of absolute vacuum, gauge pressure, atmospheric pressure,absolute pressure	Concept of absolute vacuum, gauge pressure, atmospheric pressure,absolute pressure	absolute vacuum, gauge pressure, atmospheric pressure,absolute pressure	understand absolute vacuum, gauge pressure, atmospheric pressure,absolute pressure	

BISHNUPUR PUBLIC INSTITUTE OF ENGINEERING

MECHANICAL DEPT

3RD YR 5TH SEM

		LECTURE SCHEDULE-FLUID MECHANICS & MACHINERY	Total marks=100(Theory=70,internal=30)			
Subject Code		Course offered in Part – III 1st Semester	OBJECTIVE	INPUT	LEARNING OUTCOME	GOOGLE ATTENDENCE
DAY	Title	Topics to be coverd				
Day 7	Fluid Pressure & Pressure Measurement	Simple and differential manometers, Bourden pressure gauge.	concept of Simple and differential manometers, Bourden pressure gauge.	Simple and differential manometers, Bourden pressure gauge.	understand Simple and differential manometers, Bourden pressure gauge.	
Day 8		Concept of Total pressure on immersed bodies(flat vertical, flat inclined)	Concept of Total pressure on immersed bodies(flat vertical, flat inclined)	Total pressure on immersed bodies(flat vertical, flat inclined)	understand Total pressure on immersed bodies(flat vertical, flat inclined)	
Day 9		center of Pressure, Pr. Distribution diagram.	concept of center of Pressure, Pr. Distribution diagram.	center of Pressure, Pr. Distribution diagram.	understand center of Pressure, Pr. Distribution diagram.	
Day 10		Numericals on Manometers, Total Pressure & Centre of pressure.	how to determine Total Pressure & Centre of pressure.	Numerical problem	measurement of Total Pressure & Centre of pressure.	
Day 11		Numericals on Manometers, Total Pressure & Centre of pressure.	how to determine Total Pressure & Centre of pressure.	Numerical problem	measurement of Total Pressure & Centre of pressure.	

BISHNUPUR PUBLIC INSTITUTE OF ENGINEERING

MECHANICAL DEPT

3RD YR 5TH SEM

		LECTURE SCHEDULE-FLUID MECHANICS & MACHINERY	Total marks=100(Theory=70,internal=30)			
Subject Code		Course offered in Part – III 1st Semester	OBJECTIVE	INPUT	LEARNING OUTCOME	GOOGLE ATTENDENCE
DAY	Title	Topics to be coverd				
Day 12		Numericals on Manometers, Total Pressure & Centre of pressure.	how to determine Total Pressure & Centre of pressure.	Numerical problem	measurement of Total Pressure & Centre of pressure.	
Day 13	W	Types of fluid flows: steady-unsteady, uniform-non-uniform,	Types of fluid flows	uniform-non-uniform flow, laminar, turbulant flow	dependence of various characteristics on types of flow	
Day 14		laminar turbulent.				
Day 15		Continuity equation,Bernoulli's theorem, Venturimeter – Construction, principle of working, Coefficient of discharge,	concept of Continuity equation,Bernoulli's theorem, Venturimeter – Construction, principle of working, Coefficient of discharge,	Continuity equation,Bernoulli's theorem, Venturimeter – Construction, principle of working, Coefficient of discharge,	defination, equation, construction of venturimeter	
Day 16		Derivation for discharge through venturimeter.	To Derive discharge through venturimeter.	Rate of flow through venturimeter.	To know how to Derive discharge through venturimeter.	

BISHNUPUR PUBLIC INSTITUTE OF ENGINEERING

MECHANICAL DEPT

3RD YR 5TH SEM

		LECTURE SCHEDULE-FLUID MECHANICS & MACHINERY	Total marks=100(Theory=70,internal=30)			
Subject Code		Course offered in Part – III 1st Semester	OBJECTIVE	INPUT	LEARNING OUTCOME	GOOGLE ATTENDENCE
DAY	Title	Topics to be coverd				
Day 17	Fluid Flo	Orifice meter – Construction, Principle of working, hydraulic coefficients, Derivation for discharge through Orifice meter	To learn Construction of orificemeter, Principle of working, hydraulic coefficients, Derivation for discharge through Orifice meter	Orifice meter – Construction, working principle, hydraulic coefficients, Derivation for discharge through Orifice meter	To know the Construction Orifice meter, Principle of working, hydraulic coefficients, and how to Derive discharge through Orifice meter	
Day 18		Pitot tube – Construction, Principle of Working	To learn Construction of Pitot tube, Principle of Working	Pitot tube – Construction, working principle	To know about Pitot tube, Principle of Working	
Day 19		Numericals on Venturimeter, orifice meter, pitot tube.	Numericals on Venturimeter, orifice meter, pitot tube.	Discharge measurement on Venturimeter, orifice meter, pitot tube.	To know how to calculate discharge on Venturimeter, orifice meter, pitot tube.	
Day 20		Numericals on Venturimeter, orifice meter, pitot tube.				
Day 24		Laws of fluid friction (Laminar and turbulent),Darcy's equation and Chezy's equation for frictional losses.	To learn fluid friction, frictional loss	Laws of fluid friction,Darcy's equation and Chezy's equation for frictional losses.	To determine how to calculate fluid friction,Darcy's equation and Chezy's equation for frictional losses.	
Day 25	ipes	Minor losses in pipes	To learn Minor losses in pipes	Minor losses	To determine Minor losses in pipes	

BISHNUPUR PUBLIC INSTITUTE OF ENGINEERING

MECHANICAL DEPT

3RD YR 5TH SEM

		LECTURE SCHEDULE-FLUID MECHANICS & MACHINERY	Total marks=100(Theory=70,internal=30)			
Subject Code		Course offered in Part – III 1st Semester	OBJECTIVE	INPUT	LEARNING OUTCOME	GOOGLE ATTENDENCE
DAY	Title	Topics to be coverd				
Day 26	Flow Through P	Hydraulic gradient and total gradient line.Hydraulic power transmission through pipe	To learn Hydraulic gradient and total gradient line. Power transmission through pipe	Hydraulic gradient and total gradient line. Power transmission	To know about Hydraulic gradient and total gradient line and Hydraulic power transmission through pipe	
		Numericals to estimate major and minor losses.	To learn major losses and minor minor losses	Numerical problem	how to determine major losses and minor minor losses	
Day 27		Numericals to estimate major and minor losses.				
Day 28	Impact of jet	Impact of jet on fixed vertical, moving vertical flat plates.	To learn Impact of jet on fixed vertical, moving vertical flat plates.	Impact of jet on different plates.	To know how to determine Impact of jet on fixed vertical, moving vertical flat plates.	
Day 29		Impact of jet on curved vanes with special reference to turbines & pu	To learn Impact of jet on curved vanes with special reference to turbines & pumps	Impact of jet on curved vanes of turbines & pumps	To know how to calculate Impact of jet on curved vanes of turbines & pumps	
Day 30		Simple Numericals on work done and efficiency.	To solve some problems on work done and efficiency.	work done and efficiency related problems	How to determine work done and efficiency.	
Day 31		Simple Numericals on work done and efficiency.				
Day 32		Simple Numericals on work done and efficiency.				
Day 33		Simple Numericals on work done and efficiency.				

BISHNUPUR PUBLIC INSTITUTE OF ENGINEERING

MECHANICAL DEPT

3RD YR 5TH SEM

		LECTURE SCHEDULE-FLUID MECHANICS & MACHINERY	Total marks=100(Theory=70,internal=30)			
Subject Code		Course offered in Part – III 1st Semester	OBJECTIVE	INPUT	LEARNING OUTCOME	GOOGLE ATTENDENCE
DAY	Title	Topics to be coverd				
Day 34		Construction , principle of working and applications	To learn the Construction , principle of working and	Construction , working principle and applications	To know about Construction , principle of working and applications	
Day 35		Construction , principle of working and applications				
Day 36		Types of casings and impellers.	Types of casings and	Types of casings and impellers.	To know about Types of casings and impellers.	
Day 37		Concept of multistage	To learn the Concept of multistage	Concept of multistage	how multistage works	
Day 38		Manometric head, Work done, Manometric efficiency, Overall efficiency, NPSH	To learn Manometric head, Work done, Manometric efficiency, Overall efficiency, NPSH	Manometric head, Work done, Manometric efficiency, Overall efficiency, NPSH	To know about Manometric head, Work done, Manometric efficiency, Overall efficiency, NPSH	
Day 39	nps	Numerical on calculations of overall efficiency and power required to drive pumps.	some problems on overall efficiency and power required to drive pumps.	Numerical on calculations of overall efficiency and power required to drive pumps.	To know how to calculate overall efficiency and power required to drive pumps.	

BISHNUPUR PUBLIC INSTITUTE OF ENGINEERING

MECHANICAL DEPT

3RD YR 5TH SEM

		LECTURE SCHEDULE-FLUID MECHANICS & MACHINERY	Total marks=100(Theory=70,internal=30)			
Subject Code		Course offered in Part – III 1st Semester	OBJECTIVE	INPUT	LEARNING OUTCOME	GOOGLE ATTENDENCE
DAY	Title	Topics to be coverd				
Day 40	Centrifugal Pur	Reciprocating Pump Construction, working principle and applications of single and double acting reciprocating pumps.	To learn Construction of Reciprocating Pump, working principle and applications of single and double acting reciprocating pumps.	Construction, working principle and applications of single and double acting reciprocating pumps.	To know about Construction, working principle and applications of single and double acting reciprocating pumps.	
Day 41		Concept of Slip, Negative slip, Cavitation and separation	To learn Slip, Negative slip, Cavitation and separation	Concept of Slip, Negative slip, Cavitation and separation	To know about Slip, Negative slip, Cavitation and separation	
Day 42		Use of Air Vessel.	To learn Uses of A	Application of Air Vessel	To know about Uses of Air Vessel.	
Day 43		Indicator diagram with effect of acceleration head & frictional head.	To learn Indicator diagram with acceleration head & frictional head.	Indicator diagram	To know about Indicator diagram with acceleration head & frictional head.	
Day 44		Revision				
Day 45		Revision				
Day 46		Revision				
Day 47		Revision				

BISHNUPUR PUBLIC INSTITUTE OF ENGINEERING

MECHANICAL DEPT

3RD YR 5TH SEM

		LECTURE SCHEDULE-FLUID MECHANICS & MACHINERY	Total marks=100(Theory=70,internal=30)			
Subject Code		Course offered in Part – III 1st Semester	OBJECTIVE	INPUT	LEARNING OUTCOME	GOOGLE ATTENDENCE
DAY	Title	Topics to be coverd				
Day 48	REVISION	Revision				
Day 49		Revision				
Day 50		Revision				
Day 51		Revision				

PREPARED BY-MITHUN MONDAL

Lecturer's Signature

BISHNUPUR PUBLIC INSTITUTE OF ENGINEERING
MECHANICAL DEPT
3RD YR 5TH SEM

SUB NAME: Measurement & Control

SL NO		Day		objective	input	learing out come	GOOGLE ATTENDANCE
1	Introduction to measuring system & Introduction to Control system	1	Introduction to measuring system: Significance Of Measurement, block diagram of a measuring system,	Introduction to measuring system:	LIVE CLASS, CLASS NOTE	basic KNOWLADGE of mesurement	
2		2	Functional Elements Of measurement System				
3		3	Classification Of Instrument	type of instruments	LIVE CLASS, CLASS NOTE	knowladge of instruments	
4		4	Finctions of control system Block diagram of open loop & closed loop system, Basic elements of closed loop system.	Finctions of control system	LIVE CLASS, CLASS NOTE,video lecturer	knowladge of control stystem and working	
5		5	Example of measurement & control system for Heating a room at specific temperature, Maintain a particular shaft speed……	measurement & control system for Heating	LIVE CLASS, CLASS NOTE,video	knowladge of Maintain and measurement	
6	Displacement measurement	6	Working principle & use of Potentiomete.	Working principle of Potentiomete.	LIVE CLASS, CLASS NOTE,video lecturer	knowladge of potentiometer and uses	
7		7	Differential transformer (LVDT & RVDT)	Working principle of transformer.	CLASS NOTE,video lecturer	useas of industri and working	
8		8	Capacitive element & Optical encoders…….	Working Optical encoders…	LIVE CLASS, CLASS NOTE,video lecturer	knowledgeOptical encoders…	

BISHNUPUR PUBLIC INSTITUTE OF ENGINEERING
MECHANICAL DEPT
3RD YR 5TH SEM

SUB NAME: Measurement & Control

SL NO		Day		objective	input	learing out come	GOOGLE ATTENDANCE
9	Speed Measurement	9	Mechanical tachometer, Electrical Tachometer.	Working Tachometer.	LIVE CLASS, CLASS NOTE,video lecturer	knowledge of techometer	
10		10	incremental optical encoder, Eddy current drag cup tachome	working	LIVE CLASS, CLASS NOTE,video lecturer	knowledge of techometer and basic	
12		11	Magnetic pickup tachometer.	working	LIVE CLASS, CLASS NOTE,video lecturer	knowledge of techometer and basic	
13		12	Stroboscopic tachometer.	Stroboscopic tachometer.	LIVE CLASS, CLASS NOTE,video lecturer	knowledge of techometer and basic industri use	
14		13	Photoelectric tachometer.	Photoelectric tachometer.	LIVE CLASS, CLASS NOTE,video lecturer	basic working principle	

BISHNUPUR PUBLIC INSTITUTE OF ENGINEERING
MECHANICAL DEPT
3RD YR 5TH SEM

SUB NAME: Measurement & Control

SL NO		Day		objective	input	learing out come	GOOGLE ATTENDANCE
17		14	non contacting electrical tachometer (inductive pick up & capacitive pick up)…….	electrical tachometer	LIVE CLASS, CLASS NOTE,video lecturer	basic working principle	
19	Temperature measurement	15	Pressure thermometer, Resistance Temperature Detector.	Temperature Detecto	CLASS NOTE,video lecturer	basic working principle and uses	
21		16	Platinum resistance thermometer, thermister, thermocouple	thermister, thermocouple	LIVE CLASS, CLASS NOTE,video	basic working principle and uses	
23		17	Quartz thermometer, radiation pyrometer, optical pyrometer	radiation pyrometer, optical	LIVE CLASS, CLASS NOTE,video	basic working principle and uses	
24	Measure	18	Variable area meter – Rotameter, Variable velocity meter.	Variable velocity meter	LIVE CLASS, CLASS NOTE,video lecturer	basic working principle and uses	
25		19	Anemometer, Special methods- ultrasonic flow meter.	ultrasonic flow meter.	LIVE CLASS, CLASS NOTE,video lecturer	basic working principle and special method	
26		20	Hot wire anemometer, electromagnetic flow meter…….	electromagnetic flow meter…	LIVE CLASS, CLASS NOTE,video lecturer	basic working principle and special method	

BISHNUPUR PUBLIC INSTITUTE OF ENGINEERING
MECHANICAL DEPT
3RD YR 5TH SEM

SUB NAME: Measurement & Control

SL NO		Day		objective	input	learing out come	GOOGLE ATTENDANCE
27	Miscellaneous Measurement	21	Acoustic Measurement: Characteristics of Sound, sound measuring system Sound level meter (using Piezo – electric crystal type microphone).	Characteristics of Sound, sound measuring	LIVE CLASS, CLASS NOTE,video lecturer	basic working principle and special method and useas	
28		22	Force measurement: Electromechanical method, strain gauge load cell	working of strain gaug	LIVE CLASS, CLASS NOTE,video lecturer	basic working principle and special method and useas	
29		23	Shaft power measurement: Eddy current dynamometer, Strain gauge transmission dynamometer	Shaft power measurement:	LIVE CLASS, CLASS NOTE,video lecturer	basic working principle	
30		24	strain gauge materials, resistance strain gauge – unbounded & bonded, wire gauge	working of strain gaug	LIVE CLASS, CLASS NOTE,video lecturer	basic working principle and special method and useas	
31		25	foil gauge & semiconductor gauge, strain gauge rosettes.	foil gauge & semiconductor gauge,	LIVE CLASS, CLASS NOTE,video lecturer	basic working principle and special method and useas	

BISHNUPUR PUBLIC INSTITUTE OF ENGINEERING
MECHANICAL DEPT
3RD YR 5TH SEM

SUB NAME: Measurement & Control

SL NO		Day		objective	input	learing out come	GOOGLE ATTENDANCE
32		26	Humidity measurement: Hair hygrometer, humistor hygrometer.	Humidity measurement	LIVE CLASS, CLASS NOTE,video lecturer	basic working principle and useas	
34		27	Liquid level: floats, differential pressure cell……..	Liquid leve	LIVE CLASS, CLASS NOTE,video lecturer and lab video	basic working principle and useas	
35	trol syst	28	Servomotor, mechanism & comparison of hydraulic.	working Servomoto	LIVE CLASS, CLASS NOTE,video lecturer and lab video	basic working principle and special method and useas	
36		29	pneumatic, electronic control systems	electronic control systems	CLASS NOTE,video lecturer and	knowledge and working principle	
37		30	proportional control action.	working control action.	LIVE CLASS, CLASS NOTE,video lecturer and lab video	basic knowledge and working principle	

Prepared By
Amit Mukherjee
EE Department

BISHNUPUR PUBLIC INSTITUTE OF ENGINEERING
MECHANICAL DEPT

3RD YR 5TH SEM

		LECTURE SCHEDULE - POWER ENGINEERING	Total marks=100(Theory=70,internal=30)			
Subject Code		Course offered in Part – V th Semester	OBJECTIVE	INPUT	LEARNING OUTCOME	GOOGLE ATTENDANCE
DAY	Title	Topics to be coverd				
Day 1		Basic Principle, representation on P-V & T-S diagrams and deduction of Thermal Efficiency of Otto Cycle,	Learn about Otto Cycle	Otto Cycle,Thermal Efficiency	To know about Otto Cycle	
Day 2		Basic Principle, representation on P-V & T-S diagrams and deduction of Thermal Efficiency of Diesel cycle	Learn about Diesel Cycle	Dual Cycle,Thermal Efficiency	To know about Dual Cycle	
Day 3		Basic Principle, representation on P-V & T-S diagrams and deduction of Thermal Efficiency of Dual cycle	Learn about Dual Cycle	Dual Cycle,Thermal Efficiency	To know about Dual Cycle	
Day 4		Simple numeric on Otto cycle	Numerical on Otto Cycle	Numerical	To solve the problem on Otto Cycle	
Day 5		Simple numeric on Diesel cycle	Numerical on Diesel Cycle	Numerical	To solve the problem on Diesel Cycle	
Day 6		Simple numeric on Dual cycle	Numerical on Dual Cycle	Numerical	To solve the problem on Dual Cycle	
Day 7		Classification of I.C. Engines.Working Principle, Construction with function of components and Comparison of Two-Stroke(Petrol and Diesel)	Classification,construction and working principle of Two stroke I.C Engine	Two stroke Petrol Engine,Two Stroke Diesel Engine	To know about Two stroke Petrol and Two stroke Diesel Engine	

BISHNUPUR PUBLIC INSTITUTE OF ENGINEERING
MECHANICAL DEPT

3RD YR 5TH SEM

		LECTURE SCHEDULE - POWER ENGINEERING	Total marks=100(Theory=70,internal=30)			
Subject Code		Course offered in Part – V th Semester	OBJECTIVE	INPUT	LEARNING OUTCOME	GOOGLE ATTENDANCE
DAY	Title	Topics to be coverd				
Day 8		Working Principle, Construction with function of components and Comparison of Four-Stroke (Petrol and Diesel) Engines.	Classification,construction and working principle of Four stroke I.C Engine	Four stroke Petrol Engine,Four Stroke Diesel Engine	To know about Four stroke Petrol and Four stroke Diesel Engine	

BISHNUPUR PUBLIC INSTITUTE OF ENGINEERING
MECHANICAL DEPT

3RD YR 5TH SEM

		LECTURE SCHEDULE - POWER ENGINEERING	Total marks=100(Theory=70,internal=30)			
Subject Code		Course offered in Part – V th Semester	OBJECTIVE	INPUT	LEARNING OUTCOME	GOOGLE ATTENDANCE
DAY	Title	Topics to be coverd				
Day 9		Hypothetical & Actual Indicator Diagram of Two-Stroke and Four-Stroke (Petrol and Diesel) Engines.	Indicator Diagram of Two-Stroke and Four-stroke Engines	Indicator Diagram	To know about Indicator diagram of Two stroke and Four stroke Engines	

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		LECTURE SCHEDULE - POWER ENGINEERING	Total marks=100(Theory=70,internal=30)			
Subject Code		Course offered in Part – V th Semester	OBJECTIVE	INPUT	LEARNING OUTCOME	GOOGLE ATTENDANCE
DAY	Title	Topics to be coverd				
Day 1	I.C. Engine and Pollution Control:	Valve Timing Diagram of Two-Stroke and Four-Stroke (Petrol and Diesel) Engines.	Valve Timing Diagram of Two-Stroke and Four-Stroke Engines	Valve Timing Diagram	To Know about Valve Timing diagram of two stroke and four stroke engines	

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		LECTURE SCHEDULE - POWER ENGINEERING	Total marks=100(Theory=70,internal=30)			
Subject Code		Course offered in Part – V th Semester	OBJECTIVE	INPUT	LEARNING OUTCOME	GOOGLE ATTENDANCE
DAY	Title	Topics to be coverd				
Day 1		Brief Description of I.C. Engine Combustion (SI & CI), Firingorder of Multi-cylinder I.C. Engine, Scavenging, Preignition, Detonation.	Learn about S.I and C.I Engine,Scavenging,Preignition,Detonation	S.I & C.I Engine,Scavenging,Preignition, Detonation	To know about S.I and C.I Engine,Scavenging,Preignition, Detonation	
Day 1		Brief Description of Supercharging, Turbo-charging, Simple Carburetor, M.P.F.I. and Fuel Injection Pump.	Turbo-charging, Simple Carburetor, M.P.F.I. and Fuel Injection	Supercharging, Turbo-charging, Simple Carburetor,M.P.F.I. and Fuel Injection Pump.	To know about Supercharging, Turbo-charging, Simple Carburetor, M.P.F.I. and Fuel Injection Pump.	

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		LECTURE SCHEDULE - POWER ENGINEERING	Total marks=100(Theory=70,internal=30)			
Subject Code		Course offered in Part – V th Semester	OBJECTIVE	INPUT	LEARNING OUTCOME	GOOGLE ATTENDANCE
DAY	Title	Topics to be coverd				
Day 1		Basic Concept of Governing of I.C Engine, Lubrication of I.C Engine and Cooling of I.C Engine.	Learn about Governing of I.C Engine, Lubrication of I.C Engine and Cooling of I.C Engine.	Governing , Lubrication and Cooling of I.C Engine.	To know about Governing of I.C Engine, Lubrication of I.C Engine and Cooling of I.C Engine.	

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3RD YR 5TH SEM

		LECTURE SCHEDULE - POWER ENGINEERING	Total marks=100(Theory=70,internal=30)			
Subject Code		Course offered in Part – V th Semester	OBJECTIVE	INPUT	LEARNING OUTCOME	GOOGLE ATTENDANCE
DAY	Title	Topics to be coverd				
Day 1		Performance of I. C Engine – Indicator Power, Brake Power, Morse Test, Mechanical Efficiency, Thermal Efficiency, Relative Efficiency (Efficiency Ratio), Volumetric Efficiency,	Concept about Indicator Power, Brake Power,Morse Test, Mechanical Efficiency, Thermal Efficiency, RelativeEfficiency	Indicator Power, Brake Power, Morse Test, Mechanical Efficiency, Thermal Efficiency, Relative Efficiency, Volumetric Efficiency,	Performance of I. C Engine – Indicator Power, Brake Power, Morse Test, Mechanical Efficiency, Thermal Efficiency, Relative Efficiency (Efficiency Ratio),	
Day 1		Performance of I. C Engine – Specific Fuel Consumption and Heat Balance Sheet. (Simple numerical)	Learn about Specific Fuel Consumption and Heat Balance Sheet. (Simple	Specific Fuel Consumption, Heat Balance Sheet	To know about Specific Fuel Consumption and Heat Balance Sheet. (Simple numerical)	
Day 1		Pollutants in Exhaust Gases of Petrol and Diesel Engines, their effects on environment and possible ways of reducing the Pollutants in the Exhaust Gases.	Learn about Pollutants their effects on environment and possible	Pollutants	To know about Pollutants their effects on environment and possible ways of reducing it	
Day 1		Revision	Revision	Revision	Revision	
Day 1		Revision	Revision	Revision	Revision	
Day 1		Revision	Revision	Revision	Revision	
Day 2		Working Principle, Classification and Application of Steam Nozzles	Learn about Steam Nozzles	Steam Nozzles	To know about Steam Nozzles	

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3RD YR 5TH SEM

		LECTURE SCHEDULE - POWER ENGINEERING	Total marks=100(Theory=70,internal=30)			
Subject Code		Course offered in Part – V th Semester	OBJECTIVE	INPUT	LEARNING OUTCOME	GOOGLE ATTENDANCE
DAY	Title	Topics to be coverd				
Day 2	Turbines:	Working Principle, Classification and Application of Steam Diffusers	Learn about Steam Diffusers	Steam Diffusers	To know about Steam Diffusers	

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		LECTURE SCHEDULE - POWER ENGINEERING	Total marks=100(Theory=70,internal=30)			
Subject Code		Course offered in Part – V th Semester	OBJECTIVE	INPUT	LEARNING OUTCOME	GOOGLE ATTENDANCE
DAY	Title	Topics to be coverd				
Day 2	fusers and Steam T	Continuity Equation, Sonic Velocity and concept of Mach Number.	Learn about Continuity Equation, Sonic Velocity ,	Continuity Equation, Sonic Velocity, Mach Number.	To know about Continuity Equation, Sonic Velocity Mach Number.	
Day 2		Steady Flow Energy Equation for flow through Steam Nozzles. (Simple numerical)	Learn about Steady Flow Energy Equation	Steady Flow Energy Equation	To know about Steady Flow Energy Equation	
Day 2		Concept of Critical Pressure and Critical Pressure Ratio. Classification of Steam	Learn about Critical pressure and critical	Critical Pressure,Critical pressure ratio	To knowabout Critical pressure and critical pressure ratio	
Day 2		Working Principle, Construction with function of components of Simple Impulse Turbine ,Velocity Diagrams, Work done, Power and	Learn about Construction and Working function of	Impulse turbine	To know about Construction and Working function of Impulse turbine	

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		LECTURE SCHEDULE - POWER ENGINEERING	Total marks=100(Theory=70,internal=30)			
Subject Code		Course offered in Part – V th Semester	OBJECTIVE	INPUT	LEARNING OUTCOME	GOOGLE ATTENDANCE
DAY	Title	Topics to be coverd				
Day 2	Nozzles / Dif	Working Principle, Construction with function of components of Simple Impulse-Reaction Turbine. Velocity Diagrams, Work done, Power and Efficiency of Simple Impulse Turbine.	Learn about Construction and Working function of Impulse-reaction turbine	Impulse-reaction turbine	To know about Construction and Working function of Impulse-reaction turbine	
Day 2		Simple numerical of Simple impulse Turbine by using Graphical Method only	Solve the Impulse turbine numerical	Impulse turbine numerical	To know about the Impulse turbine numerical	
Day 2		Simple numerical of Simple impulse Reaction Turbine by using Graphical Method only	Solve the Impulse-reaction turbine numerical	Impulse-reaction turbine numerical	To know about the Impulse-reaction turbine numerical	

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3RD YR 5TH SEM

		LECTURE SCHEDULE - POWER ENGINEERING	**Total marks=100(Theory=70,internal=30)**			
Subject Code		**Course offered in Part – V th Semester**	OBJECTIVE	INPUT	LEARNING OUTCOME	**GOOGLE ATTENDANCE**
DAY	**Title**	**Topics to be coverd**				
Day 2		Concept of Compounding of Steam Turbine.	Learn about Compounding of steam turbine	Compounding of steam turbine	To know about Compounding of steam turbine	
Day 3		Concept of Governing of Steam Turbine.	Learn about Governing of Ste	Governing of Steam Turbine.	To know about Governing of Steam Turbine.	
Day 3		Basic Principle, representation on P-V & T-S diagrams and deduction of Thermal Efficiency of Brayton or Joule Cycle. (No numerical)	Learn about Brayton Cycle	Brayton Cycle	To know about Brayton Cycle	
Day 3		Classification and Applications of Gas Turbine.	Learn about Gas turbine	Gas turbine	To know about Gas turbine	
Day 3		Comparison, labelled schematic flow diagram and function of components of Closed Cycle gas turbines	Learn about Closed cycle gas turbines	Closed cycle gas turbines	To know about Closed cycle gas turbines	
Day 3		Comparison, labelled schematic flow diagram and function of components of Open Cycle Gas Turbines.	Learn about Open cycle gas turbines	Open cycle gas turbines	To know about Open cycle gas turbines	

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		LECTURE SCHEDULE - POWER ENGINEERING	Total marks=100(Theory=70,internal=30)			
Subject Code		Course offered in Part – V th Semester	OBJECTIVE	INPUT	LEARNING OUTCOME	GOOGLE ATTENDANCE
DAY	Title	Topics to be coverd				
Day 3	Gas Turbine and Jet Propulsion:	Methods to improve thermal efficiency of gas turbine(Regeneration, Inter-Cooling, Reheating using T-S Diagram)	Learn how to improve the efficiency of gas turbines	Regeneration, Inter- Cooling, Reheating	To know how to improve the efficiency of gas turbines	

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		LECTURE SCHEDULE - POWER ENGINEERING	Total marks=100(Theory=70,internal=30)			
Subject Code		Course offered in Part – V th Semester	OBJECTIVE	INPUT	LEARNING OUTCOME	GOOGLE ATTENDANCE
DAY	Title	Topics to be coverd				
Day 3		Basic Principles of Turbojet, Turbo Propeller &Ram Jet.	Learn about Turbojet, Turbo Propeller &Ram Jet.	Turbojet, Turbo Propeller &Ram Jet.	To know about Turbojet, Turbo Propeller &Ram Jet.	
Day 3		Rocket Propulsion- Solid Propellants and Liquid Propellants	Learn about various types of Rocket Propulsion	Rocket Propulsion	To know the various types of Rocket Propulsion	
Day 3		Components & Function of Liquid Propellants Rocket Engine.	Learn about Liquid Propellants Rocket Engine	Liquid Propellants Rocket Engine	To know about Liquid Propellants Rocket Engine	
Day 3		Revision	Revision	Revision	Revision	
Day 4		Revision	Revision	Revision	Revision	
Day 4		Revision	Revision	Revision	Revision	
Day 4		Classification of Hydraulic Turbines.Construction and working principle of Pelt	Learn about Construction and working principle of	Hydraulic Turbines	To know about the Construction and working principle of Hydraulic Turbines	
Day 4		Construction and working principle of Francis and Kaplan Turbine.	Learn about Construction and working principle of Francis and kaplan Turbines	Francis and kaplan Turbines	To know about the Construction and working principle Francis and kaplan Turbines	

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		LECTURE SCHEDULE - POWER ENGINEERING	Total marks=100(Theory=70,internal=30)			
Subject Code		Course offered in Part – V th Semester	OBJECTIVE	INPUT	LEARNING OUTCOME	GOOGLE ATTENDANCE
DAY	Title	Topics to be coverd				
Day 4	Hydraulic Turbines:	Draft Tubes – working principle and types, Concept of Cavitation in Turbines	Learn about Construction and working principle of Draft tubes	Draft tubes	To know about the Construction and working principle of Draft tubes	

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		LECTURE SCHEDULE - POWER ENGINEERING	Total marks=100(Theory=70,internal=30)			
Subject Code		Course offered in Part – V th Semester	OBJECTIVE	INPUT	LEARNING OUTCOME	GOOGLE ATTENDANCE
DAY	Title	Topics to be coverd				
Day 4		Velocity Diagrams, Work done, Power and Efficiency of Pelton Wheel	Learn about Velocity Diagrams, Work done, Power and Efficiency of Pelton Wheel	Pelton Wheel	To know about the Velocity Diagrams, Work done, Power and Efficiency of Pelton Wheel	
Day 4		Velocity Diagrams, Work done, Power and Efficiency of Francis Turbine.	Learn about Velocity Diagrams, Work done, Power and Efficiency of	Francis turbine	To know about the Velocity Diagrams, Work done, Power and Efficiency of Francis Wheel	
Day 4		Simple numeric on Pelton turbine	Solve Pelton turbine numerica	Pelton turbine numerical	To know about the Pelton turbine numerical	
Day 4		Simple numeric Fransis turbine	Solve Pelton turbine numerica	Pelton turbine numerical	To know about the Pelton turbine numerical	
Day 4		Basic concept of Governing of Turbine.	Learn about the Governing of	Governing of hydraulic Turbine	To know about the Governing of hydraulic Turbine	
Day 4		Specific Speed and Selection of turbine on the basis of head and discharge available.	Learn about turbine head and discharge	Turbine head and Discharge	To know about the turbine head and discharge	
Day 5		Schematic Layout of Hydroelectric Power Plant.	Learn about Hydroelectric Po	Hydroelectric Power Plant.	To know about the Hydroelectric Power Plant.	
		PREPARED BY-ASHIM MONDAL			Lecturer's Signature	