

Lesson Plan

ENGLISH & COMMUNICATION SKILLS-II

Week	Theory		Practical	
	Lecture Day	Topic(Including Assignments)	Practical Day	Topic
1 st	1	1.Modern means of Communication (Video Conferencing, e-mail, Teleconferencing),	1	1. Reading Practice of the above lessons in the Lab Activity classes. 2. Comprehension exercises of unseen passages along with the given lessons.
	2	1. Correspondence: Enquiry letters, placing orders, complaint letters.	2	1. Vocabulary enrichment and grammar exercises based on the above selective readings.
2 nd	1	1.Prepositions 2.Conjunctions	1	1. Situational Conversation: Requesting and responding to requests; Expressing sympathyand condolence. 2. Warning; Asking and giving information.
	2	1. Presentation Skills: How to prepare and deliver a good presentation 2.Telephone Etiquettes	2	1. Getting and giving permission.
3 rd	1	1.The Portrait of a Lady - Khushwant Singh 2.Effective Communication Skills: 7 C's of Communication	1	1. Asking for and giving opinions. 2. A small formal and informal speech.
	2	1.Report Writing 2.Memos	2	1. Seminar.
4 th	1	1.Telephone Etiquettes	1	1. Debate. 2. Unseen Comprehension Passages and vocabulary enhancement.
	2	2. Idioms and Phrases	2	1. Interview Skills: Preparing for the Interview and guidelines for success in the Interview and significance of acceptable body-language during the Interview.
5 th	1	1 st Sessional Tests (Tentative)	1	First sessional Tests (Tentative)
	2	1 st Sessional Tests (Tentative)	2	First sessional Tests (Tentative)
6 th	1	1.The Doctor's Word by R K Narayan	1	1. Written and Oral Drills will be undertaken in the class to facilitate a holistic linguistic competency among learners.
	2	1.Non-verbal Communication – Significance, Types and Techniques for EffectiveCommunication 2.Circulars	2	
7 th	1	1. Pairs of words (Words commonly misused and confused)	1	Revision & Practice
	2	1. Importance of developing employable and soft skills	2	1. Participation in a GD, Functional and Non-functional roles in GD, case studies and roleplays.
8 th	1	1. Speech by Dr Kiran Bedi at IIM Indore2007 Leadership Concepts.		Revision & Practice
	2	1.Barriers and Effectiveness in Listening Skills		1. Presentations, using audio-visual aids (including power-point).
9 th	1	1. Press Release		Revision & Practice
	2	2. Inspection Notes and tips for Note-taking		Revision & Practice
10 th	1	2 nd Sessional Tests (Tentative)	1	Revision & Practice
	2	2 nd Sessional Tests (Tentative)	2	Revision & Practice
11 th	1	1. The Bet - by Anton Chekov	1	Telephonic interviews, face to face interviews.
	2	1. Barriers and Effectiveness in Speaking Skill	2	Revision & Practice
12 th	1	1. Corrigendum writing	1	Presentations as Mode of

				Communication: Persuasive Presentations using multi-mediaaids
	2	1. Translation of Administrative and Technical Terms in Hindi or Mother tongue	2	Revision & Practice
13th	1	Unit 1 st Revision	1	Revision & Practice
	2	1. Cover Letter 2. Drawing inferences	2	Revision & Practice
14th	1	1. Translation of Administrative and Technical Terms in Hindi or Mother tongue	1	Revision & Practice
	2	1. Resume Writing: Definition, Kinds Of Resume, Difference between Bio-data and Curriculum Vitae and Preparing a Resume for Job/ Internship	2	Revision & Practice
15th	1	3 rd Sessional Test(Tentative)	1	Third Sessional Test(Tentative)
	2	3 rd Sessional Test(Tentative)	2	Third Sessional Test(Tentative)
16th	1	1. Group discussions: Concept and fundamentals of GD, and learning Group Dynamics. 2. Revision	1	Revision & Practice
	2	1. Case Studies and Role Plays 2. Revision	2	Revision & Practice

Name of faculty Sh.Vikas			
Semester 4th			
Subject HYDRAULICS AND PNEUMATICS			
Lesson plan duration 15 week			
Work Load (Lecturer/ Practical) per week (In hours) Lectures-03, Practicals-02			
Week	Theory		
	Lecturer day	Topic (including assignment/test)	Topic
1st	1st	Unit 1- Introduction Fluid, types of fluid; properties of fluid viz. mass density, weight density (specific weight), specific volume, capillarity, specific gravity and their units	Measurement of pressure head by employing. i) Piezometer tube ii) Single and double column manometer
	2nd	Properties of fluid- viscosity, compressibility, surface tension and their units	
	3rd	Properties of fluid- kinematic viscosity and dynamic viscosity and their units	
2nd	4th	Unit 2- Pressure and Measurement Concept of pressure (Atmospheric Pressure, gauge pressure, absolute pressure), Pascal's Law, Static Pressure	To find out the value of coefficient of discharge for a venturimeter
	5th	Pressure measuring devices: piezometer tube manometers - simple U-tube, differential single column	
	6th	Pressure measuring devices: Inverted U-tube, Micro-manometer	
3rd	7th	Concept and simple problems on pressure measuring devices simple U-tube, differential single column	Revision of 1st and 2nd practicals
	8th	Concept and simple problems on pressure measuring devices Inverted U-tube, micro-manometer	
	9th	Bourdon pressure gauge, Diaphragm pressure gauge, dead weight pressure gauge Assignment-Different Pressure measuring devices *	
4th	10th	Test of 1st and 2nd unit	Measurement of flow by using venturimeter
	11th	Unit 3-Flow of Fluids Types of fluid flow – steady and unsteady, uniform and non-uniform, laminar and turbulent; rate of flow and their units	
	12th	Continuity equation of flow	
5th	13th	Potential energy of a flowing fluid; total head	Verification of Bernoulli's theorem
	14th	Bernoulli's theorem (statement and proof) and its applications	
	15th	Discharge measurement with the help of venturi-meter, orifice meter	
6th	16th	SESSIONAL TEST-1	Revision of 3rd and 4th practicals
	17th	Discharge measurement with the help of pitot-tube, Limitations of Bernoulli's theorem	
	18th	Simple Problems of flow of fluids	
7th	19th	Revision of 1st, 2nd and 3rd units Assignment- Bernoulli's theorem and continuity equation *	To find coefficient of friction for a pipe (Darcy's friction)
	20th	Unit 4-Flow through Pipes Definition of pipe flow, wetted perimeter, hydraulic mean depth, hydraulic gradient; loss of head due to friction; Chezy's equation and Darcy's equation of head loss (without proof)	
	21st	Reynold's number and its effect on pipe friction; siphon, Nozzle - definition	
8th	22nd	Velocity of liquid flowing through the nozzle, power developed	To study hydraulic circuit of an automobile brake and hydraulic ram
	23rd	Water hammer, anchor block, syphon, surge tank (concept only)	
	24th	Loss of head in pipes due to sudden enlargement, sudden contraction, obstruction on flow path (without proof)	
9th	25th	Loss of head in pipes due to change of direction and pipe fittings (without proof)	Revision of 5th and 6th practicals
	26th	SESSIONAL TEST-2	
	27th	Unit 5-Flow through Orifices Cc, Cv, Cd, flow through drowned orifices	
10th	28th	Flow through partially drowned orifices	Study the working of a Pelton wheel and Francis turbine
	29th	Time for emptying a tank through a circular orifice	

	30th	Simple Problems of flow through orifices Assignment-Chezy's equation and Darcy's equation of head loss and loss of heads in pipes under various conditions	*
11th	31st	Unit 6-Hydraulic Machines Description, operation and application of hydraulic systems – hydraulic ram, hydraulic jack	To study a single stage centrifugal pump for constructional details and its operation to find out its normal head and discharge
	32nd	Description, operation and application of hydraulic systems – hydraulic brake, hydraulic accumulator	
	33rd	Description, operation and application of hydraulic systems – hydraulic door closer, hydraulic press	
12th	34th	Selection of specification of above systems for different applications	Revision of 7th and 8th practicals
	35th	Revision of 5th and 6th units Assignment- Different hydraulic systems	
	36th	Unit 7-Water Turbines and Pumps Concept of a turbine, types of turbines –impulse and reaction type (concept only), difference between these turbines	
13th	37th	Construction and working of pelton wheel, Francis turbine	Revision of 1st, 2nd and 3rd practicals
	38th	Construction and working of Propeller and Kaplan turbines	
	39th	Unit speed, unit power, unit discharge, specific speed of turbines, selection of turbines based on specific speed	
14th	40th	Concept of hydraulic pump, single acting reciprocating pump (construction and operation only)	Revision of 4th, 5th and 6th practicals
	41st	Concept of vane, screw and gear pumps (construction and operation only)	
	42nd	Construction, working and operation of centrifugal pump	
15th	43rd	Performance, efficiencies and specifications of a centrifugal pump	Revision of 7th and 8th practicals
	44th	Trouble shooting and problems in centrifugal pumps and remedial measures, pitting, cavitation, priming Assignment-Difference between Reaction and Impulse turbines and hydraulic pumps	
	45th	SESSIONAL TEST-3	

LESSON PLAN

Name of faculty : **SH. RAVINDER KUMAR**

Discipline: **Mechanical Engineering**

Semester: **4th Semester**

Subject: **Machine Design**

Lesson Plan Duration: **15 weeks**

Work load (Lecture/ Practical) per week: **03 Lectures**

WEEK	THEORY	
	Day Lecture	Topic(Including Assignment/Test)
1	1	INTRODUCTION- Design – Definition, Type of design, necessity of design
	2	Comparison of designed and undersigned work
	3	Design procedure
2	4	Characteristics of a good design, Design terminology: stress, strain, factor of safety,
	5	factors affecting factor of safety
	6	Stress concentration, methods to reduce stress concentration, fatigue, endurance limit.
3	7	General design consideration ,Codes and Standards (BIS standards)
	8	Engineering materials and their mechanical properties
	9	Properties of engineering materials: elasticity, plasticity,
4	10	Malleability, ductility ,Toughness, hardness and resilience.
	11	Fatigue, creep, tenacity and strength etc.
	12	Selection of materials, criteria of material selection ,
5	13	DESIGN FAILURE - Various design failures-maximum stress theory, maximum strain theory, Classification of loads Design under tensile, compressive and torsional loads.
	14	DESIGN OF SHAFT -Type of shaft, shaft materials, Type of loading on shaft, standard sizes of shaft available
	15	Shaft subjected to torsion only, Rigidity criterion
6	16	determination of shaft diameter (hollow and solid shaft) on the basis of :Strength criterion, Rigidity criterion ,Determination of shaft diameter (hollow and solid shaft) subjected to combined torsionand bending ASSIGNMENT - 1
	17	1ST SESSIONAL TEST
	18	DESIGN OF KEY -Types of key, materials of key, functions of key

7	19	Failure of key (by Shearing and Crushing)., Design of key - (Determination of key dimension)
	20	Effect of keyway on shaft strength. (Figures and problems).
	21	DESIGN OF JOINTS - Types of joints - Temporary and permanent joints, utility of various joints
8	22	Temporary Joint: Knuckle Joints – Different parts of the joint, Material used for the joint, type of knuckle Joint, design of the knuckle joint. (Figures and problems).
	23	Cotter Joint – Different parts of the spigot and socket joints,
	24	Design of spigot and socket joint.
9	25	Welded Joint - Welding symbols, Type of welded joint, strength of parallel and transverse fillet welds.
	26	Strength of combined parallel and transverse weld.
	27	Riveted Joints. : Rivet materials, Rivet heads,
10	28	Leak proofing of riveted joint – caulking and fullering, Different modes of rivet joint failure.
	29	Design of riveted joint – Lap and butt,
	30	Single and multi riveted joint. ASSIGNMENT- 2
11	31	2ND SESSIONAL
	32	TEST DESIGN OF FLANGE COUPLING - Necessity of a coupling, advantages of a coupling, Types of couplings
	33	Design of muff coupling
12	34	Design of flange coupling. (Protected type), Design of flange coupling. (Unprotected type)
	35	Numerical
	36	DESIGN OF SCREWED JOINTS AND SPRINGS -Introduction
13	37	Advantages and Disadvantages of screw joints, location of screw joints.
	38	Important terms used in screw threads,
	39	designation of screw threads ,Initial stresses due to screw up forces,
14	40	Stresses due to combined forces Design of power screws (Press, screw jack, screw clamp)
	41	Numerical ASSIGNMENT - 3
	42	3RD SESSIONAL TEST
15	43	Design of Spring: Classification and applications of springs,
	44	spring terminology, Stresses in springs, Wahl's correction factor,
	45	design of open coil helical spring subjected to uniform applied load under tension and compression.

LESSON PLAN

NAME OF FACULTY: SH. VISHNU GOYAL

DISCIPLINE: MECHANICAL ENGINEERING

SEMESTER: IV

SUBJECT: MATERIALS AND METALLURGY

LESSON PLAN AND DURATION: 15 WEEKS

WORK LOAD (LECTURE/PRACTICAL) PER WEEK: 3L/2P

WEEK	THEORY		PRACTICALS
	LECTURE NO.	TOPIC	TOPIC
1 st	1	UNIT:1. INTRODUCTION Material, Engg materials	1. Classification of about 25 specimens of materials/machine parts into (i) Metals and non metals (ii) Metals and alloys (iii) Ferrous and non ferrous metals (iv) Ferrous and non ferrous alloys
	2	Overview of different engineering materials and applications.	
	3	Difference between metals and non-metals, Overview of Biomaterials and semi-conducting materials.	
2 nd	4	UNIT:2.CRYSTALLOGRAPHY Fundamentals of Crystalline and amorphous solids, Unit Cell, Space Lattice,	2. Given a set of specimen of metals and alloys (copper, brass, aluminum, cast iron, HSS, Gun metal); identify and indicate the various properties possessed by them.
	5	Arrangement of atoms in Simple Cubic Crystals, BCC, FCC and HCP Crystals	
	6	Number of atoms per unit Cell, Atomic Packing Factor, coordination number (without derivation),	
3 rd	7	Defects/Imperfections, types and effects in Solid materials,	Revision
	8	Deformation: Overview of deformation behavior and its mechanisms, Elastic and Plastic deformation.	
	9	Behavior of material under load and stress-strain, Failure Mechanisms: Overview of failure modes, fracture, fatigue and creep.	
4 th	10	METALLURGY: Introduction, Cooling curves of pure metals, dendritic solidification of metals,	3(a) Study of heat treatment furnace.
	11	Effect of grain size on mechanical properties, Binary alloys, Thermal equilibrium diagrams	
	12	Lever rule, Solid Solution alloys	
5 th	13	SESSIONAL TEST-I	3(b) Study of a thermocouple/pyrometer
	14	UNIT:3.METALS AND ALLOYS Ferrous Metals: Different iron ores, Flow diagram for production of iron,	

	15	Steel and stainless steel, allotropic forms of iron-Alpha, Delta, Gamma.	
6th	16	Basic process of manufacturing of pig iron and steel-making.	4. Study of a metallurgical microscope and specimen polishing machine.
	17	Cast Iron :Introduction	
	18	Different types of Cast Iron, manufacture and their usage.	
7th	19	Steels: Plain carbon Steels and alloy steel,	5. To prepare specimens of following materials for microscopic examination and to Examine the microstructure of the specimens of following materials: i)Brass ii)Copper iii)Grey iv)Malleable v)Low carbon steel vi)High carbon steel vii) HSS
	20	Classification of plain carbon steels,	
	21	Properties and application of different types of Plain Carbon Steels, Effect of various alloys on properties of steel	
8th	22	Alloy steels (high speed steel, stainless steel, Uses of Spring steel, silicon steel	REVISION
	23	Stainless steel: Definition, importance and criticality (Life cycle cost, Corrosion impact; difference with Steel, Per Capita consumption; growth rate of SS vs other materials, World vs India).	
	24	Various grades of SS and their nomenclature, Effect of alloying elements, Unique characteristics of various grades of SS	
9th	25	Manufacturing of SS: Process flow, Raw materials for SS manufacturing functions of each processing unit, Downstream facilities, Various finishes of SS,	6. To anneal a given specimen and find out difference in hardness as a result of annealing.
	26	Fabrication and testing of SS: Stud welding method, Weldability and effect of welding on various types of SS, Defects like Sensitization and micro-fissure	
	27	Relative observations and precautions while performing the processes: cutting, Buffing, Bending, Roll forming, Embossing, Polishing of Stainless steel. Chemical treatment like pickling and passivation for SS.	

10th	28	Applications of SS: Demand of SS in various segments, Overview of SS applications in Automobile, railway, and	Revision
	29	Non Ferrous Materials: Properties and uses of Copper, Aluminium and their alloys	
	30	Transport. Architectural, building construction applications and Process Industries	
	31	SESSIONAL TEST-II	
11th	32	UNIT:4.HEAT TREATMENT Purpose of heat treatment,	7. To normalize a given specimen and to find out the difference in hardness as a result of normalizing.
	33	Iron Carbon diagram, equilibrium diagram, different microstructures of iron and steel.	
12th	34	Formation and decomposition of Austenite, Martensitic Transformation – Simplified Transformation Cooling Curves	8. To harden and temper a specimen and to find out the difference in hardness due to tempering.
	35	various heat treatment processes- hardening, tempering, annealing, normalizing,	
	36	Case hardening and surface hardening	
13th	37	Types of heat treatment furnaces required for above operations (only basic idea),	9.Demo of welding defects like sensitization and micro-fissure in stainless steel.
	38	Measurement of temperature of furnaces. Physical metallurgy of Stainless Steel	
	39	Various phases in SS, Chromium-Nickel diagram, Schaeffler Diagram	
14th	40	UNIT:5.ADVANCED MATERIALS Heat Insulating materials-Asbestos, glasswool, thermocole,	Revision
	41	Refractory materials– Dolomite, porcelain.	Viva-voice
	42	Glass–Sodalime, borosil.	
15th	43	Materials for bearing metals Materials for Nuclear Energy Materials	Viva-voce
	44	Smart materials-properties and applications.	
	45	SESSIONAL TEST-III	

Lesson Plan				
Name of Faculty member		SH. JITENDER		
Discipline		MECHANICAL ENGINEERING		
Semester		4th		
Subject		THERMODYNAMICS -II		
Lesson plan duration		15 weeks		
Work Load (Lecturer/ Practical) per week (In hours)		Lectures-03, Practicals-02		
Week	Theory		Practical	
	Lecturer day	Topic (including assignment/test)	Practical day	Topic
1st	1st	Unit 1- I. C. Engines Introduction to IC Engines	1st	Study of a two stroke engine using cut section model, note the function and material of each part (Groups-G1, G2 and G3)
	2nd	Working principle of two stroke and four stroke cycle		
	3rd	Introduction to SI engines with details		
2nd	4th	Introduction to CI engines with details	2nd	Study of a four stroke engine using cut section model. Note the function of each part (Groups-G1, G2 and G3)
	5th	Study of Otto cycle and diesel cycle		
	6th	Study of Dual cycle * Assignment- Difference between two stoke and four stroke engines and difference between petrol engine and diesel engine		
3rd	7th	Location and functions of various parts of IC engines and materials used for them	3rd	Revision of 1st and 2nd practicals
	8th	Concept of IC engine terms: bore, stroke, dead centre, crank throw, compression ratio, piston displacement, piston speed and Revision		
	9th	Unit 2-Fuel supply in Petrol Engines Concept of carburetion (Fuel Supply in Petrol Engines)		
4th	10th	Air fuel ratio concepts and requirements under different load conditions	4th	Study of battery ignition system of a multi-cylinder petrol engine stressing ignition timings, setting, fixing order and contact breaker; gap adjustment (Groups-G1, G2 and G3)
	11th	Working of Simple carburetor		
	12th	Applications of Simple carburetor		
5th	13th	Details of MPFI (Multi Point fuel Injection) and common rail system	5th	Study of cooling of IC engine.
	14th	Working of super charging and turbo charger and revision * Assignment- Working of simple carburetion, MPFI and Common rail system		
	15th	SESSIONAL TEST-1		
6th	16th	Unit 3-Fuel system of Diesel Engines Components of fuel system of diesel engine	6th	Revision of 3rd and 4th practicals
	17th	Description and working of fuel feed pump		
	18th	Fuel injection pump		
7th	19th	Injectors	7th	Study of lubricating system of IC engine (Groups-G1, G2 and G3)
	20th	Revision of unit 3 Assignment- Working of fuel system of diesel engine and pintaux nozzle		
	21st	Unit 4-Ignition system of IC Engines Introduction of ignition systems of IC Engines		
8th	22nd	Description of battery coil and magnet ignition system	8th	Determination of BHP by dynamometer (Groups-G1, G2 and G3)
	23rd	Description of Electronic ignition system		
	24th	Fault finding in ignition system and remedial action		
9th	25th	Revision of topics as per students feedback of all four units * Assignment- Ignition system working with neat sketch of battery coil ignition system	9th	Revision of 5th and 6th practicals
	26th	SESSIONAL TEST-2		
	27th	Unit 5-Cooling and Lubrication Introduction of cooling system in IC engine		
10th	28th	Function of cooling system in IC engine	10th	Morse test on multi-cylinder petrol engine (Groups-G1, G2 and G3)
	29th	Working of Air cooling and water cooling system		
	30th	Use of thermostat, radiator and forced circulation in water cooling (description with line diagram)		
11th	31st	Various functions of lubrication	11th	Morse test on multi-cylinder petrol engine (Groups-G1, G2 and G3)
	32nd	Types and properties of lubricant		
	33rd	Lubrication system of engine		
12th	34th	Fault finding in cooling and lubrication and remedial action	12th	Revision of 1st, 2nd and 3rd practicals
	35th	Revision of Vth unit Assignment- Working of Air cooling and water cooling system, Properties of lubricants		
	36th	Unit 6-Testing of IC Engines power - indicated and brake power		

13 th	37th	Efficiency - mechanical, thermal. relative and volumetric	13th	Local visit to roadways or private automobile workshops (Groups-G1, G2 and G3)
	38th	Methods of finding indicated and brake power		
	39th	Morse test for petrol engine		
14 th	40th	Heat balance sheet of engine	14th	Revision of 4th, 5th and 6th practicals
	41st	Concept of pollutants in SI and CI engines, pollution control		
	42nd	Norms for two or four wheelers – BIS – I, II, III and IV methods of reducing pollution in IC engines		
15 th	43rd	Alternative fuels like CNG and LPG for IC Engines	15th	Revision of 7th practical
	44th	Revision of all units * Assignment of different type of efficiencies with norms and alternative fuel advantages		
	45th	SESSIONAL TEST-3		

LESSON PLAN

Name of Faculty: Sh.Bharat Bhushan

Discipline: Mechanical Engg.

Semester: 4th

Subject: Workshop Technology-III

Lesson Plan Duration: 15 Weeks

Work Load: 3 Lectures/week

WEEK	LECTURE	TOPIC
1	1	UNIT I 1. Gear Manufacturing Gear materials and specifications,
	2	Gear manufacturing by Casting, Moulding, Stamping,
	3	Machining; Gear generating methods: Gear Shaping with pinion cutter & rack cutter;
2	4	Gear hobbing; Description of gear hob; Operation of gear hobbing machine;
	5	Gear finishing processes;
	6	REVISION
3	7	UNIT II 2. Grinding Principles of metal removal by Grinding;
	8	Abrasives – Natural & Artificial; Bonds and binding processes: Vitrified, silicate, shellac, rubber, Bakelite;
	9	Factors affecting the selection of grind wheels.
4	10	Size and shape of wheel, kind of abrasive, grain size, grade and strength of bond.
	11	Structure of grain, spacing, kinds of bind material; Standard marking systems: Meaning of letters & numbers sequence of marking
	12	Grades of letters; Truing, dressing, balancing and mounting of wheel.;
5	13	Selection of grinding wheel. Grinding machines classification: Cylindrical, Surface, Tool & Cutter grinding machines
	14	Construction details; Principle of centreless grinding; Advantages & limitations of centreless grinding.

	15	SESSIONAL TEST-1
6	16	UNIT III 3. Modern Machining Processes Introduction – comparison with traditional machining; Ultrasonic Machining: principle.
	17	Description of equipment, applications; Electric Discharge Machining (EDM): Principle,
	18	Description of equipment, Dielectric fluid, tools (electrodes), Process parameters, Output characteristics, applications
7	19	Wire cut EDM: Principle, Description of equipment, Controlling parameters; applications.
	20	Abrasive Jet Machining: principle, description of equipment, application
	21	Laser Beam Machining: principle, description of equipment, application; Electro
8	22	Chemical Machining: description of equipment, application.
	23	REVISION
	24	UNIT IV 4. Metal Forming Processes Press Working - Types of presses, type of dies and punches, ,
9	25	Selection of press die, die material.
	26	Press Operations-Shearing, piercing, trimming, punching, notching
	27	Shaving, gearing, embossing, stamping.
10	28	Forging - Open die forging, closed die forging, Press forging, upset forging, swaging, up setters, roll forging, Cold and hot forging.
	29	Rolling - Elementary theory of rolling, Types of rolling mills, Thread rolling, roll passes, Rolling defects and remedies.
	30	Extrusion and Drawing - Type of extrusion- Hot and Cold,
11	31	Direct and indirect. Pipe drawing, tube drawing, wire drawing
	32	SESSIONAL TEST-2
	33	UNIT V 5. Metal Finishing Processes Purpose of finishing surfaces. Surface roughness-Definition and units
12	34	Honing Process, its applications, Description of hones
	35	Brief idea of honing machines. Lapping process, its applications
	36	Description of lapping compounds and tools. Brief idea of lapping machines.
13	37	Polishing, Buffing, Burnishing and super finishing
	38	REVISION
	39	6. Metallic Coating Processes Metal spraying – Wire process, powder coating process, applications,.
14	40	Electroplating: Basic principles, Plating metals, applications;
	41	Hot dipping: Galvanizing, Tin coating, Parkerizing,
	42	Anodizing. Organic coatings: Oil base Paint, Lacquer base,

15	43	Enamels, Bituminous paints, rubber base coating; Finishing specifications
	44	SESSIONAL TEST-3
	45	REVISION