

Course Name : Diploma in Mechanical and Civil Engineering
Semester : Third
Subject Title : Mathematics III
Subject Code : DTMA2101

Teaching Scheme			Paper Hours	Examination Scheme											Total Marks
L	P	T		Theory		Test	Total		Pract		Oral		Term work		
				Max	Min		Max	Min	Max	Min	Max	Min	Max	Min	
3	-	1	3	100	35	25	125	50	-	-	-	-	25	10	150

Objective:

1. To make students well versed in various methods of integration for solving problems.
2. To expose students to techniques of solving differential equations.

No.	Contents	L	M
1	Integration 1.1 Definition of integration. Integration of standard functions. 1.2 Theorems of integration. 1.3 Methods of Integration 1.3.1 Integration by substitution 1.3.2 Integration by partial fractions. 1.3.3 Integration by parts. 1.4 Definite Integration 1.4.1 Definition of definite integral. 1.4.2 Properties of definite integral with simple problems.	19	40
	1.5 Applications of definite integrals 1.5.1 Area under curve. Area bounded by two curves. 1.5.2 Volume of solid of revolution.	06	10
2	Differential Equations: 2.1 Order and degree of the differential equation. 2.2 Formation of differential equations. 2.3 Solution of differential equation of first order, first degree. 2.3.1 Variable separable method.	12	25

	2.3.2 Reducible to variable separable method. 2.3.3 Homogeneous differential equation. 2.3.4 Exact differential equation. 2.3.5 Introduction of integrating factor. 2.3.6 Linear differential equation. 2.3.7 Bernoulli's differential equation.		
	2.4 Solution of Linear differential equations of higher order with constant coefficients. 2.4.1 Complementary function 2.4.2 Particular integral of e^{ax} , $\sin ax$, $\cos ax$, x^n , ve^{ax} , xv 2.5 Applications of differential equation.	11	25
		48	100

Text Books :

- 1) Applied Mathematics - B.M.Patel, J.M.Rawal and others - Nirali Prakashan (July-2010)
- 2) Mathematics for Polytechnic students - S. P. Deshpande- Pune Vidyarthi Griha Prakashan (first edition-Aug.2005).

Reference Books :

- 1) Applied Mathematics II - G.V. Kumbhojkar - C. Jamnadas & Co. (second edition – 2010-11)
- 2) Higher Engineering Mathematics – B. S. Grewal – Khanna Publication (1995)

Course Name : Diploma in Mechanical Engineering
Semester : Third
Subject Title : Applied Mechanics
Subject Code : DTME2102

Teaching Scheme			Paper Hours	Examination Scheme											Total Marks
L	T	P		Theory		Test	Total		Pract		Oral		Termwork		
				Max	Min		Max	Min	Max	Min	Max	Min	Max	Min	
3	-	2	3	100	35	25	125	50	-	-	-	-	25	10	150

Objectives:

- To understand the principles and laws of Mechanics.
- To understand the applications of these principles and laws in various Engineering applications

Syllabus

Part I: - Theory

Sr. No.	chapter	Hours	Marks
A)	Statics:		
01	Fundamental concepts: Statics, Dynamics, Kinematics, Kinetics, Concept of force system of forces: Co-planar Concurrent, parallel, Principle of transmissibility of a force.	2	6
02	Resolution and Composition of forces: Resolution of a force, concept of a moment of a force, laws of moments and couples, Composition of co-planar, concurrent, non-concurrent, parallel forces, Resultant of a general system of co-planer forces.	4	8
03	Equilibrium: Definition, Relation between resultant & equilibrant, conditions of equilibrium.	5	10
04	Plane Truss: Forces in the members of a plane truss using method of sections.	5	10

05	Centre of Gravity & Centroid: Definition, Centroid of regular plane areas and their combinations, center of gravity of simple solids: cube, cylinder, prism, sphere, cone and their combinations	4	8
06	Graphic Statics: Representation of a force, Bow's Notation, Space Diagram, Force diagram, Funicular polygon, Condition of equilibrium, Reaction of beams subjected to uniformly distributed and concentrated loads, forces in members of a truss, centroid of a plane area.	4	8
07	Friction: Laws of friction, terms used: Co-efficient of friction, angle of friction, repose, equilibrium of bodies on level and inclined planes.	5	10
B)	Kinematics:		
01	Projectile: Review of rectilinear motion, Motion of projectile, Time of flight, Maximum height and horizontal range, relation between angle of projection and range, maximum horizontal range.	3	10
02	Angular Motion: Definition, Angular displacement, Angular velocity, Angular acceleration, Tangential and Radial components equations of circular motion, Relation between rectilinear and circular motion super elevation.	4	8
C)	Kinetics		
01	Work, Power and Energy: Definition of terms, form of energy, law of conservation of energy, Relation between force, mass & acceleration and its application.	3	6
02	Momentum, .Impact and Impulse.: Definitions of terms, application of Newton's laws of motion to engineering problems, concept of dynamic equilibrium; D' Alembert' s principle	3	8
D)	Simple Mechanics: Definition of terms used: mechanical advantage, velocity ratio, efficiency, friction in the machine, law of machine, conditions of the reversibility, study of simple machines : simple screw jack, axle and wheel, differential axle and wheel, worm and worm wheel, single purchase crab.	4	8
	Total	48	100

Term Work

Examples based on above syllabus covering the applications of the principles of Mechanics in Mechanical engineering field will be studied in tutorial classes.

Part -II : Practicals

Sr, No.	Name of Experiments
A	Note- Two half-imperial size drawing sheets in the graphic static with minimum five problems out of the following:
1	Resultant of concurrent forces.
2	Resultant of parallel forces
3	Resultant of non-concurrent, non-parallel forces.
4	Reactions of a simply supported beam.
5	Equilibrium of bodies.
6	Forces in members of truss.
7	Centroids of plane areas
B	Laboratory journal containing minimum five experiments out of the following:
1	Law of polygon of forces
2	Forces in members of a roof truss.
3	Forces in jib crane.
4	Simple screw jack.
5	Single purchase crab.
6	Worm and worm wheel.
7	Differential axle and wheel

Text Books:

1. Applied mechanics, S. B. Junnarkar Charotar Publishing House Pvt. Ltd. 17th, Revised Edition 2010,

Reference Books:

1. Fundamentals of Applied Mechanics, Dadhe, Jamdar and Walawalkar, Sarita prakashan, 2006

Course Name : Diploma in Mechanical Engineering
Semester : Third
Subject Title : Production Process II
Subject Code : DTME2103

Teaching Scheme			Paper Hours	Examination Scheme										Total Marks	
L	T	P		Theory		Test	Total		Pract		Oral		Termwork		
				Max	Min		Max	Min	Max	Min	Max	Min	Max		Min
3	-	3	3	100	35	25	125	50	-	-	50	25	25	10	200

Objectives:

The student will be able to

1. Know and identify basic manufacturing processes for manufacturing different components.
2. Operate & control different machines and equipments.
3. Inspect the job for specified dimensions.
4. Produce jobs as per specified dimensions.
5. Select the specific manufacturing process for getting the desired type of output.
6. Adopt safety practices while working on various machines.

Syllabus

Part I: - Theory

Chapter	Name of the Topic	Hours	Marks
01	The Lathe 1.1 Types of lathes – light duty, Medium duty and heavy duty geared lathe, CNC lathe. 1.2 Specifications. 1.3 Basic parts and their functions. Operations and tools – Turning, parting off, Knurling, Facing, Boring, drilling, threading, step turning, taper turning. 1.4 Angle calculations for taper turning. 1.5 Cutting tool nomenclature and tool signature. 1.6 Cutting parameters and machining time calculation.	08	15

	1.7. Attachments 1.8 Turret and Capstan Lathe		
02	Drilling Machine 2.1 Classification. 2.2 Basic parts and their functions - Radial drilling machine. 2.3 Types of operations. 2.4 Specifications of drilling machine. 2.5 Types of drills and reamers 2.6 Twist drill nomenclature. 2.7 Cutting parameters , machining time calculation. 2.8 Work and Tool Holding Devices	06	12
03	Boring Machine 3.1 Classification 3.2 Basic parts and their functions. 3.3 Types of operations. 3.4 Specification of boring machine. 3.5 Boring Tools.	04	8
04	Broaching Machine 4.1 Classifications 4.2 Basic parts and their functions. 4.3 Internal broach nomenclature.	04	6
05	Milling Machine 5.1 Classification. 5.2 Basic parts and their functions – column and knee type. 5.3 Types of operations 5.4 Types of milling cutters. 5.5 Cutting parameters, machining time calculation. 5.6 Milling operations – plain milling, side and face milling, form milling, gang milling, end milling, face milling, T- slot milling, slitting. 5.7 Work and Tool Holding Devices 5.8 Dividing Heads	06	13
06	Shaper and Planer 6.1 Classification 6.2 Basic parts and their operations. 6.3 Shaper Drive 1. Mechanical, 2. Hydraulic 6.4 Specification of shaper and planer 6.5 Cutting Speed, Feed and Depth of Cut 6.6 Planning and Shaping Tools 6.7 Work-holding Devices for Shapes and Planers	05	10
07	Grinding Machine 7.1 Classification of machines , 7.2 Grinding wheel composition, types and shapes, 7.3 Designation. Types of Grinding operations.	4	8
08	Gear Manufacturing 8.1 Materials 8.2 Methods of manufacture 8.3 Gear cutting by (i) milling, (ii) single point cutting tool	5	10

	<p>on planer/shaper, (iii) Shear speed process, (iv) Gear planning, (v) Gear Shapers & Gear hobbing 8.4 Gear Finishing Processes: (i) Honing, (ii) Lapping, (iii) Burnishing, (iv) Buffing and (v) polishing</p>		
09	<p>Non traditional machining processes 9.1 Electrical discharge Machining. Principle of working, Setup of EDM, Dielectric fluid, tools (electrodes), Process parameters, Output characteristics, Applications e.g. microhole drilling, curve hole drilling. 9.2 Wire cut EDM - Principle of working, Setup of WEDM, controlling Parameters, Applications. 9.3 Laser Beam Machining. Physical principle of Laser, Laser action in ruby rod, Types of Lasers. Set-up for LBM. Characteristics, controlling Parameters, Application Of Laser Beam for Welding (LBW) 9.4 Other non traditional machines such as ECM, CHM Principle of working, Applications.</p>	4	12
10	<p>Introduction to NC, CNC and DNC machine 10.1 Basic Components of an NC system , 10.2 The NC procedure, 10.3 NC Coordinate Systems, 10.4 NC Motion Control Systems & its applications. 10.5 CNC and DNC</p>	4	6

TERM WORK:

At least one written assignment on each of the above main topic.

Part -II : Practicals

Sr.No.	Details Of Practical Contents
01	<p>TURNING & GRINDING: One job consisting of operations such as plain turning, step turning, Chamfering, taper turning. 50 % of available time should be used.</p>
02	<p>MILLING & SHAPING: One job involving shaping, milling and surface grinding operations. 50 % of available time should be used.</p>

Text Books:

1. S.K. Hajra Chaudhary- Workshop Technology Vol I & II – Media Promotors and Publisher, New Delhi. Eighth Edition 1986

Reference Books:

1. B.S. Raghuwanshi- Workshop Technology – Dhanpat Rai and sons, New Delhi, Ninth Edition 2002

2. Production Technology- P.C. Sharma , S. Chand, Third Edition 2009
3. Manufacturing Technology R.K. Rajput Laxmi Publication (P) Ltd, First edition 2007
4. Basic Manufacturing Processes & workshop Technology- S.K.Garg-Third edition 2009

Course Name : Diploma in Mechanical Engineering
Semester : Third
Subject Title : Basics of Electrical Engineering
Subject Code : DTEE2104

Teaching Scheme			Paper Hours	Examination Scheme										Total Marks	
L	T	P		Theory		Test	Total		Pract		Oral		Termwork		
				Max	Min		Max	Min	Max	Min	Max	Min	Max		Min
3	-	2	3	100	35	25	125	50	-	-	-	-	25	10	150

Objectives:

- To understand principles and laws used in basic electrical engineering
- To understand the working of different electrical machines and their applications.
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Syllabus

Part I: - Theory

Chapter	Name of the Topic	Hours	Marks
1	Fundamentals of Electricity :- a) Voltage, Current and Power b) Resistance, Ohm's Law and Temperature effect on resistance c) Series circuit, Parallel Circuit and Kirchhoff's laws. Mesh analysis and Node analysis. (Problems having 2 equations only)	10	20
2	Network Theorems: - (Problems having 2 loops only). a) Star- Delta Transformation b) Superposition Theorem c) Thevenin's Theorem d) Norton's Theorem Maximum Power Transfer	12	25
3	A.C Fundamental's:- a) Alternating Current and Voltage b) Terms related with alternating quantity c) R.M.S value, average value and Phasor representation of alternating quantities. d) Inductors and capacitors, phase relationships	10	25

	and concept of impedance. Introduction to rectangular and polar forms of representing vectors. Polar to rectangular conversion and vice – versa		
4	3-Phase Circuits :- a) Concept of 3-phase b) Balanced three phase circuit's star and delta connection. Their voltage current and power relationships. c) Power Measurement by 2 Watt meters Method.	6	10
5	Electrical Machines:- a) Principle of operation of single phase transformer and e.m.f equation, problems related to e.m.f equation. b) Introduction to D.C machine. c) Theory of Induction motor, Starting of Induction motor for single phase and 3-phase.	10	20
		48	100

Part –II : Practicals

List of experiments: (Any 7 experiments to be performed from the followings.)

1. Study of Multimeter.
2. K.V.L and K.C.L
3. Thevenin's Circuit
4. Norton's Circuit
5. Superposition Theorem
6. Maximum Power Transfer
7. Star/Delta 3 phase circuits voltage/current relationship.
8. Two wattmeter method of power measurement in three phase circuits.
9. Observation and working of a)
 - D.C Machine
 - b) Induction motor (starting of I.M by D.O.L and star delta)
 - c) Transformer

Text Book:

1. Basic Electrical Engineering, 2nd edition by V N Mittle, Tata McGraw-Hill Publishing Company Limited.

Reference Books:-

- 1) Fundamentals of Electrical Engineering and Electronics, 28th Edition by B.L.Theraja, S Chand Publications.

- 2) Electrical Technology, 8th Edition by Edward Hughes, , Pearson Education.
- 3) Circuits & Networks 4th Edition by Sudhakar & Shyammohan, (Tata McGraw - Hill Publishing Company Limited).

Course Name : Diploma in Mechanical Engineering
Semester : Third
Subject Title : Engineering Metallurgy
Subject Code : DTME2105

Teaching Scheme			Paper Hours	Examination Scheme											Total Marks
L	T	P		Theory		Test	Total		Pract		Oral		Termwork		
				Max	Min		Max	Min	Max	Min	Max	Min	Max	Min	
3	-	2	3	100	35	25	125	50	-	-	-	-	25	10	150

Objectives:

- To understand properties of different types of materials and it's applications.
- To understand applications of non destructive testing methods.

Syllabus

Part I: - Theory

Chapter	Name of the Topic	L	M
1	Solid Crystalline Structure: Crystallisation of liquid into solid state, Nucleation and growth in metals and alloys. Formation of polycrystalline and single crystals. Classification of crystal structure. FCC,BCC and HCP lattice. Lattice structure, unit cell, packing density and co-ordination number. Their importance. Crystallographic notations-Methods for planes and directions, Miller Indices.	3	8
2	Constitution of Alloys: Introduction, significance of alloying, Definition, classification and properties of different types of alloys, pure metal, interstitial and intermetallic compounds, solid solution and its types, phase rule, cooling curves for pure metals and alloys, phase diagrams. 2.1 Equilibrium diagram of a binary system in which the components form eutectic in solid state (Lead - Antimony phase diagram)	8	15

	<p>2.2. Equilibrium diagram of a binary system in which there is a complete solubility in liquid and solid state (copper - nickel phase diagram)</p> <p>2.3. Equilibrium diagram of a system in' which components Solubility in liquid state and limited solubility in solid state and solid solubility decrease with the temperature (Lead - tin phase diagram)</p>		
3	<p>Non - Ferrous Metals and Alloys:</p> <p>3.1. Copper and its alloys. 3.2. Aluminum and its alloys. 3.3. Nickel and its alloys. 3.4. Zinc and its alloys. 3.5. Lead .and its alloys.</p>	5	10
4	<p>Iron - Carbon Equilibrium Diagram:</p> <p>Importance of Iron as Engineering material, Allotropy of iron, Introduction and study of transformation in iron - carbon equilibrium diagram, definition of structures, study of microstructures, effect of carbon content on structure and properties of plain carbon steels, critical temperature .lines, effect of minor constitutes, Introduction to TTT curves.</p>	10	15
5	<p>Heat - Treatment of Steels:</p> <p>5.0 Introduction to the Technology of Heat treatment, classification of heat treatment process</p> <p>5.1. Annealing, normalizing, hardening and tempering of steels.</p> <p>5.2. Surface heat treatments (case hardening)</p> <p>a) Chemical heat treatments such as carburising, nitriding, cyniding.</p> <p>b) Flame hardening, Induction hardening.</p>	9	14
6	<p>Classification. Properties and Uses of Steels:</p> <p>6.1. Plain Carbon Steels</p> <p>6.2. Alloy Steels: Classification, purposes of alloying, effect of alloying elements, nickel, chromium, manganese, Moly bdenum, tungsten; Vanadium, silicon , Marging steels.</p> <p>6.3. Stainless Steel: Classification, properties and uses.</p> <p>6.4. Tool Steels: Classification, properties, uses, heat treatment of tool steels.</p>	6	10

7	Cast Irons: White, gray, Malleable, chilled, S.G. Mechonite Cast iron, alloy cast irons. Effect of constituents, such as silicon, sulfur, Manganese, phosphorous on cast iron. Mechanical properties and uses of different- cast iron.	3	6
8	Standard forms of Materials: Materials specifications, commonly used materials for different engineering components.	1	4
9	Powder Metallurgy: Powder metallurgy process, preparation of the metal powder, characteristic of metal powders, mixing compacting, sintering, advantages and disadvantages of powder metallurgy, application of powder metallurgy.	5	8
10	Non Destructive Testing: Radiography x-ray and gamma 'ray, Magnetic Particle Inspection, fluorescent penetrant test, Ultrasonic Test, Eddy Current test. Applications of these tests.	4	6
11	Introduction to International Standards / Codes BIS Publications, ASME section 8, div II. A WS (American Welding Society) Hand Book ASME section 5 for NDT,	2	4

Part –II : Practicals

1. Study of phase diagram
2. Study of non ferrous metals and alloys
3. Study of Iron - Carbon equilibrium diagram
4. Study of heat treatment process and their applications.
5. Study of ferrous metals 'and alloys.'
6. Study of standard of materials.
7. Study of material specifications.
8. Discussions on commonly used materials for different engineering components.
9. Study of powder metallurgy.

Text Books:

1. Material Science and Metallurgy by V. D. Kodgire ,Everest Publications, 10th Revised Copy-2003
2. Material Science and Metallurgy by S.P. Nayak, Charotar Publication

House,4th Edition 1982

Reference Books:

1. Metallurgy for Engineers – E.C. Rollason (ELBS soc. And Edward Arnold,London) Tata McGraw Hills 1990
2. A text book of Metallurgy – A.R. Bailey (Macmillan & Co.Ltd.,London) 1964
3. Engineering metallurgy by Avner, Tata McGraw Hills - 1997
- 4 . Mechanical Metallurgy: G. E. Dieter, McGraw Hill International New Delhi. Tata McGraw Hills -1988

Course Name : Diploma in Mechanical Engineering
Semester : Third
Subject Title : Computer Aided Machine Drawing - I
Subject Code : DLCS2106

Teaching Scheme			Paper Hours	Examination Scheme											Total Marks
L	T	P		Theory		Test	Total		Pract		Oral		Termwork		
				Max	Min		Max	Min	Max	Min	Max	Min	Max	Min	
2	-	4	-	-	-	-	-	100	35	-	-	50	20	150	

Objectives:

- To understand the drawing details of the standard machine components. To
- understand simple assemblies of different joints and couplings.

Syllabus

Part I:- Theory

Sr.No.	Details	Hrs
1	Projections of Solids: Axis of solids inclined to both H.P. and V.P.	3L/6P
2	Intersection of surfaces: Curves of inter-penetration when a cylinder, prisms, pyramid or cone is penetrated by either a cylinder or a prism vertically and/ or horizontally as per the case	6L/12P
3	Reading advanced multi views orthographic projections: Complex shaped machine parts including sectional views	5L/10P
4	Permanent fasteners: Rivets and riveted joints, symbolic representation of welded joints	2L/4P
5	Detachable fasteners: Free hand sketching various thread profiles. Left & right hand threads, multi start threads, special purpose bolts, special purpose nuts, types of washers, stud bolt types of screws, locking arrangements of nuts	3L/6P
6	Keys and Couplings: Different types of keys, couplings – flanged, protected, flexible, muff, Split muff type and universal joint	1L/2P
7	Cotter Joints Cotter joints, Spigot and socket type, sleeve type, strap type, gib and cotter type, double gib type etc.	1L/2P
8	Pin joints and knuckle joints.	1L/2P

9	Auxiliary Projections.	2L/4P	
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Part II:- Practicals

S.No	Topic	Paper / CAD Drawings
1	Projections of solids	3
2	Intersection of solids	6
3	Missing Views	5
4	Auxillary views	2
5	Free hand sketches	8

Practical (Term work)

- Students should prepare one A2 size sheet on every practical day based on that day's lecture. These sheets will be assessed regularly
- As a part of exercise in the free hand sketching, students should visit textile workshop, automobile lab, heat engine lab, mechanical workshop etc. to get acquainted with machine elements.
- Models of various components studied under missing views, intersections of solids are to be made using "Computer Aided Drafting" techniques.
- Adequate number of assignments(not less than 15 sheets), going up to 24 (including the report and projects as mentioned above) are expected in a semester.

Text Books

1. Engineering Drawing : N.D.Bhat , Charotar Publishers,49th Edition 2010
2. Machine Drawing : N.D Bhatt, Charotar Publishers,38th edition 2003

Reference Books:-

1. Machine Drawing : P.S.Gill, S.Kataria & sons, 3rd edition 2007
2. Machine Drawing :Siddeshwar, Tata McGraw Hill Publications,2005

Course Name : Diploma in Mechanical Engineering
Semester : Third
Subject Title : Development of Life Skills
Subject Code : DTHU2107

Teaching Scheme			Paper Hours	Examination Scheme												Total Marks
L	T	P		Theory		Test	Total		Pract		Oral		Termwork			
				Max	Min		Max	Min	Max	Min	Max	Min	Max	Min		
0	0	2	-	-	-	-	-	-	-	-	-	-	25	10	25	

Objective

1. To train students in overcoming stage fright, to attain composure, to organize thought process and develop voice modulation and body language.
2. To develop students' interpersonal skills and leadership quality, to improve their listening and persuasive skills, and train them in the ways of identifying the source of information, collecting and planning .
3. To prepare students for interview, make them aware of personal grooming and concept of time , to teach students positive thinking as an ongoing process, to have optimistic approach, , to cultivate right values and attitude.

SYLLABUS

Sr. No.	Topic	Hours
01	Oral Skills and Writing Skills <ul style="list-style-type: none"> • Elocution • Group Discussion • Presentations • Resume • Summarization 	4 5 6 2 2
02	Managerial Skills <ul style="list-style-type: none"> • Interview Techniques Time • Management Manners & • Etiquette Body Language • Personality Development • Positive thinking • 	2 2 2 2 3 2
Total		32
03	Practical <ol style="list-style-type: none"> 1. Students deliver a prepared speech. 2. Group discussions conducted in class 3. Group of 6-7 students make a power point presentation 4. Assignments on resume writing and summarization 5. Mock interviews in class 6. Role play by students. 	

Term Work- Students should submit term work file based on above topics.

Text Book:

1. Business Communication- Raman Meenakshi, Oxford, India, First edition, 2008

Books for Reference:

1. Contemporary Management, Gupta C. B., APH, New Delhi, First edition, 1992

2. Organisational Behaviour, Sekaran Uma, Tata Mcgraw Hill, New Delhi, Second edition, 2008

3. Technical Communication, Raman Meenakshi, Sharma Sangeeta, OUP, India, Second impression, 2004

Course Name : Diploma in Mechanical Engineering
Semester : Third
Subject Title : Professional Practices - I
Subject Code : DLHU2108

Teaching Scheme			Paper Hours	Examination Scheme											Total Marks
L	T	P		Theory		Test	Total		Pract		Oral		Termwork		
				Max	Min		Max	Min	Max	Min	Max	Min	Max	Min	
-	-	2	-	-	-	-	-	-	-	-	-	-	25	10	25

Objectives:

The Student will be able to:

1. Acquire information from different sources
2. Prepare notes for given topic
3. Present given topic in a seminar
4. Interact with peers to share thoughts
5. Prepare a report on industrial visit, expert lecture

Syllabus

Sr.No.	Details	Hrs
1.	Group Discussion : The students should discuss in a group of six to eight students and write a brief report on the same as a part of term work. Two topics for group discussions may be selected by the faculty members.	8

	<p>Some of the suggested topics are -</p> <p>i) Current topics related to mechanical engineering field. ii) Current news items iii) Discipline and House Keeping iv) Sports</p>	
2.	<p>Lectures by Professional / Industrial Expert be organized in the following areas :</p> <p>i) Different metals & alloys for Engineering applications. ii) Non destructive testing. iii) Ceramics & Composite Materials. iv) Heat Treatment Processes types & applicability. v) Surface Treatment Processes. vi) Selection of electric motors. vi) Acoustics . vii) Industrial hygiene. viii) Illumination / Lighting system. ix) Fire Fighting / Safety Precautions and First aids. x) Use of Plastics in Automobiles.</p>	12
3.	<p style="text-align: center;">Industrial visit</p> <p>Industrial visit should be arranged to nearby industries & report of the same should be submitted by the individual students, to form a part of the term work.</p>	8