MATS University, Raipur



MATS School of Engineering & Technology Gullu, Arang, Raipur [C.G.]



Syllabus Scheme

(IInd Semester)

For Bachelor of Engineering For

All Branches

Subject Code For MATS School of Engineering & Tech. Deptt.

2nd Semester

S.No.	Subject Code	Subject Name
1	BE200	Engineering Mathematics-II
2	BE201	Engineering Mechanics
3	BE202	Basic Electronics Engineering
4	BE203	Basic Mechanical Engineering
5	BE204	Engineering Chemistry
6	BE205	Basic Electronics Lab
7	BE206	Engineering Mechanics Lab
8	BE207	Engineering Chemistry Lab
9	BE208	Workshop Practice – II
10	BE209	Power Point Presentation



MATS School of Engineering & Technology MATS University, Raipur Scheme of Teaching & Examination IInd Semester (All Branches of Engineering)



S.	Course		Per	riods	Evalu	ation	Total
No.	code	SUBJECT	per	week	Sche	eme	Marks
			L	Ρ	IM	ESE	
THE	ORY						
1	BE 200	Engineering Mathematics-II	5	0	30	70	100
2	BE 201	Engineering Mechanics	5	0	30	70	100
3	BE 202	Basic Electronics Engineering	5	0	30	70	100
4	BE 203	Basic Mechanical Engineering	5	0	30	70	100
5	BE 204	Engineering Chemistry	5	0	30	70	100
PRAG	CTICAL						
6	BE 205	Basic Electronics Lab	0	3	20	30	50
7	BE 206	Engineering Mechanics Lab	0	3	20	30	50
8	BE 207	Engineering Chemistry Lab	0	3	20	30	50
9	BE 208	Workshop Practical II	0	3	20	30	50
10	BE 209	Power Point Presentation	0	3	20	30	50

L-Lecturer, P-Practical, ESE- End Semester Examination, IM-Internal Marks

Semester	:	2 nd BE Course
Branch	:	Common
Subject	:	Engineering Mathematics - II
Total Theory Periods	:	40
Total Tutorial Periods	:	15
Code	:	BE 200

UNIT-1

Multiple integrals: Double and triple integrals, change of order of integration; Beta and Gamma functions; application to area and volume.

Vector Calculus: Scalar and vector fields, Line and surface integrals, Gradient ,divergence and curl, line integrals, Green's theorem ,divergence theorem and Stock's theorem(without proofs) and their simple applications

UNIT-2

Differential Equation of higher order: Linear differential equations of higher order with constant coefficients, method of variation of parameters, Cauchy's and Legendre's linear equations, simultaneous linear equations with constant coefficients.

UNIT-3

Laplace Transforms: Transforms of elementary functions, Transforms of derivatives and derivatives of transforms, inverse transforms, Transforms of periodic function, shifting theorems, solutions of ODE's using Laplace transforms.

UNIT-4

Numerical Methods: Difference operator forward, backward, central, shift and average operators and relations between them. Newton's forward and backward interpolation: Lagrange's interpolation and the error formula for interpolation .Numerical differentiation and integration –Trapezoidal rule, Simpson's one-third rule, Simpson's three-eighth rule including error formulas.

UNIT-5

Complex Numbers: De Moiver's theorem, roots of complex numbers, separation into real and imaginary parts of circular, hyperbolic, logarithmic and exponential function, summation of trigonometric series by C+iS method.

Name of text Books:

1. Higher Engineering Mathematics by B.S.Grewal (40th edition)-Khanna Publisher.

2. Advanced Engineering Mathematics by Erwin Kreyszig (8th edition)-John Wiley & Sons.

Name of Reference Books:

1. Differential Calculus by Gorakh Prasad-Pothisala Private Limited.

2. Advanced Engineering Mathematics by R.K.Jain and S.R.K. Iyengar-Narosa Publishing House.

3. Applied Mathematics by P.N.Wartikar & J.N.Wartikar Vol-ll –Pune Vidyarthi Griha Prakasan, Pune.

4. Integral Calculus by Gorakh Prasad-Pothisala Private Limited.

Semester	:	2 nd BE Course
Branch	:	Common
Subject	:	Engineering Mechanics
Total Theory Periods	:	40
Total Tutorial Periods	:	15
Code	:	BE 201

UNIT-I

Fundamentals of Mechanics-Basic concepts

Force Systems and Equilibrium-

Force, Moment and couple, Principle of Transmissibility, Varignon's theorem, Resultant of force systems-Concurrent and non-concurrent coplanar forces, Free body diagram, Equilibrium equations and their uses in solving elementary engineering problems.

UNIT-II

SHEAR FORCE AND BENDING MOMENT DIAGRAM

Types of supports for beams, Beams subjected to concentrated loads and uniformly distributed loads; Shear force and bending moment at any section of a beam Analytical methods and graphical methods, Force polygon and couple polygon. Reactions at supports.

ANALYSIS OF LANE TRUSSES

Analysis of forces in structural members : Method of joint and method of section Analytical and graphical methods.

UNIT-III

FRICTION

Laws of friction and its applications in solving problems on

- i) Wedge
- ii) Belt and rope drive
- iii) Screw threads
- iv) Tractive effort of vehicles on inclined planes.

UNIT-IV

MOMENT OF INERTIA OF LANE LAMINA

Parallel axis theorem and perpendicular axis theorem; product of inertia; Moment of inertia about an inclined axis; Principle axis of moment of inertia and position of principle axis.

Moment of inertia of solid of revolutions

UNIT - V

Kinematics of rigid bodies in motion

D'Alembert's principle applied to bodies having linear and angular motion; Equation of dynamic equilibrium; Maximum acceleration and retardation of vehicles running on inclined planes.

Principle of work and Energy: Simple application

Virtual Work: Work of a force, Principle of Virtual work and its application.

Kinematics of Rigid bodies

Principle of Impulse and momentum: Simple examples.

Name of the Text Books:

- I. B. Prasad : A text book of Applied Mechanics, Khanna Pub., Delhi
- A. K. Tayal : Engineering Mechanics(Statics and Dynamics); Umesh Pub, Delhi
- S. Tomoshenko and D.H. Youngh : Engineering Mechanics
- Shames, I.H., "Engineering Mechanics", Prentice Hall of India.

Name of the Reference Books:

• Bear F. P. & Jonston F.R. : Mechanics for Engineers; McGraw Hills

:	2 nd BE Course
:	Common
:	Basic Electronics Engineering
:	40
:	15
:	BE 202
	: : : : :

UNIT-I

SEMICONDUCTOR & JUNCTION DIODE CHARACTERISTICS

Review of semi conductor Physics – n and p – type semiconductors, Mass Action Law, Open-circuited pn junction, The p-n junction as a rectifier(forward bias and reverse bias) ,The current components, drift and diffusion in p-n diode, law of junction, diode equation, Energy band diagram of p-n diode, Voltampere characteristics of p-n diode, temperature dependence of V-I characteristics, transition and diffusion capacitances, p-n junction in the breakdown region, ideal diode, terminal characteristics of junction diode, load –line analysis of diode circuits ,breakdown mechanisms in semiconductor diodes, zener diode characteristics, characteristics of tunnel diode, varactor diode.

UNIT-II

RECTIFIERS

Half wave rectifier, ripple factor, full wave rectifier, Bridge rectifiers and Harmonic components in a rectifier circuit

FILTERS

Inductor filter, Capacitor filter, L-section filter, \prod -Section filter and comparison of various filter circuits in terms of ripple factors

REGULATORS

Regulators line regulation and load regulation, Block diagram of power supply, working of switched mode power Supply (SMPS)

UNIT-III

BJT

Introduction, NPN & PNP transistors, transistor action, biasing, current components, current amplification factor, relationship between α & β , ebers-moll model, transistor circuit configuration, CB,CE,CC, comparison of characteristics of transistors in different configuration, transistor as an amplifier, .

Unit – IV

TRANSISTOR BIASING

Transistor Load line. Transistor Biasing and Thermal stabilization: The operating point, Bias stability, Stability factor, Emitter

bias, Collector – to – base bias, Voltage divider bias with emitter bias, Emitter bypass capacitor. Bias compensation.

Unit V

FET & MOSFET

Field Effect Transistor (FET): Introduction, Construction, Operation, V-I Characteristics, Transfer

Characteristics, Drain Characteristics, Small-Signal Model.

Metal Oxide Semiconductor Field Effect Transistor (MOSFET): Introduction, Construction, Operation and

characteristics, Depletion MOSFET, Enhancement MOSFET

Breakdown devices

Introduction, unijunction transistor (UJT), programmable UJT (PUT), silicon controlled rectifier (SCR),

TEXT BOOKS:

1. Electronic Devices and Circuits-J Millman and C.C. Halkias, Tata McGraw Hill, 1998

2. Electronic Devices and Circuits -A.P. Godse & U.A. Bakshi..

3. Electronic Devices and Circuits -R.S.Sedha.

REFERENCES:

1. Electronic Devices and Circuits-Prof GS N Raju, I K International Publishing House Ltd 2006.

2. Electonic Devices and Circuits-T F Bogart Jr., J.S.Beasley and G.Rico, Pearson Education, $6^{\rm th}$ edition,2004

3. Principles of electronic circuits- S G Burns and P R Bond, Galgotia publications, 2nd Edn1998

Semester	:	2 nd BE Course
Branch	:	Common
Subject	:	Basic Mechanical Engineering
Total Theory Periods	:	40
Total Tutorial Periods	:	15
Code	:	BE 203

UNIT – I

Thermodynamic System and Control Volume Thermodynamic property. Zeroth Law of thermodynamics.

Work and Heat: Work and Heat as Path function, Flow work, Non-flow process versus flow process, work done in frictionless Quasi-Equilibrium process, First Law of thermodynamics:- 1st law of thermodynamics and its application to non-flow process and steady flow process.

UNIT – II

Second law of thermodynamics: Corollary 1 and 2, Clausius inequality. Carnot cycle Entropy: - A point function, principle of increase of entropy for close system and surroundings, causes of increase in entropy, Entropy change during different thermodynamic processes.

Air Cycle: Otto, Diesel, Dual combustion cycle for I.C. engines. Reversed carnot cycle for Refrigeration, Limitation of Reversed Carnot Cycle.

UNIT – III

Properties of Steam: - Types of Steam: Wet, Saturated and Superheated Steam, Phase transformation at constant pressure, sensible heat, latent heat, superheat, Internal energy. Enthalpy. Dryness fraction, steam processes: - Constant Volume, Adiabatic, Isothermal, Polytropic, Entropy of Steam. Boiler mountings and Accessories, Classification of Boiler, Draught.

UNIT-IV

Gas Welding: Types of Gas flame, Equipment used in high pressure and low pressure gas welding plant, Types of flux. Arc Welding: Arc Welding equipments, flux coating on welding electrodes.

Machine Tools: Working, classification and specification of lathe, shaper, specification of machine tools.

UNIT - V

Stress-Strain Curve for ductile and brittle material, types of stress, Relation between Elastic Constants, Principle of Superposition.

Stress and Strain in Tension and Compression, Mechanical testing of materials for tension, compression and shear.

Suggested Text Books & References

- Thermodynamics R. Yadav (Vol. I & II)
- Classical thermodynamics P.K. Nag
- Thermodynamic Approach D.S. Kumar
- Strength of Materials Sadhu Singh & Ramamrutham
- Production Technology
 Hajra & Choudhary
- Spalding, D.B. and Cole, E.H., "Engineering Thermodynamics", Edward Arnold, 1959.
- Howkins, G.A., "Engineering Thermodynamics", John Wiley and Sons, 1955.
- Van Wylen, g.J. and Sonntag, R.E., "Fundamentals of Classical thermodynamics", John Wiley and Sons, 4th edition, 1997.
- Nag, P.K., "Engineering Thermodynamics", Tata McGraw Hill, 2nd edition, 1998.

: 2nd BE COURSE SEMESTER BRANCH : COMMON **SUBJECT** : Engineering Chemistry TOTAL THEORY PERIODS : 40 TOTAL TUTORIAL PERIODS : 15 CODE : BE 204

Unit-1:

Atoms and molecules:

Quantization -1: Particle in a box, Quantization -2 Angular momentum, Molecular Structure-1 diatomic molecules, Molecular Structure-2, Heteronuclear diatomics, Non covalent interaction-1: Vander wall forces. Non covalent interaction-2, Hydrogen bonding,

Solid state Chemistry :Crystal.Fundamental law of crystallography crystal lattice. Cubic Crystals Solid defects Element of band theory

Spectroscopy -fundamental of spectroscopy experimental method of structure determination using spectroscopic techniques as IR UV vis and mass Spectroscopy

Isomerism-geometrical and optical isomerism; E'Z and R,S nomenclature

Unit-2:

Reaction Dynamics:

Introduction, order and molecularity of reactions, rate laws, lasers in chemistry Electrochemistry: Electrode potential, Nernst theory, Single Electrode Potential, Standard potential of a metal electrode,Interpretation of electrochemical series,Redox electrodes with special refrerence to Latimer frost diagrams.

Unit-3:

Water:

Specification for water, analysis of water alkalinity, hardness ., water softening processes-Lime soda process, Zeolite and ion exchange method, boiler feed water , boiler problems-scale, sludge , priming and foaming, caustic embitterment and corrosion, their causes and prevention, removal of dissolved gases, carbonate and phosphate condition, colloidal conditioning, calgon treatment, Numerical problems on lime-Soda Process ,Zeolite and Ion exchange method.

Unit-4:

Fuels:

Classification combustion and chemical principles involved in it, calorific value :gross and net calorific values and their determination by bomb calorimeter,

Solid fuels: Proximate and ultimate analysis of coal and their importance, High and low temperature carbonization, coke. Its manufactures by Otto Hoffman oven.

Liquid Fuels:

Petroleum: its chemical composition and fractional distillation, knocking and chemical structure, octane number and cetane number and their significance, power alcohol, Analysis of flue gases by Orsat's apparatus, aviation fuels, Numerical on calorific value, combustion, proximate and ultimate analysis of coal.

Unit -5:

Portland cements introduction, types of Portland cement, methods of manufacturing (dry and wet process), properties of cement, characterization of constitutional compounds of cement. ISI specification. Lubricants: Classification of lubricants and mechanisms of lubrication.

Polymers: -Industrial applications of thermoplastic, thermosetting, polymers, properties and applications of the major polymers viz polyethylene, Teflon, PVC, nylon, Phenol formaldehyde.elastomers, Natural polymers.

Explosives and Propellants

Characteristics of Explosives, Oxygen balance, Classification of explosives: Primary or initiating Explosives or detonators; Low explosives propellants, high explosives, preparation and application of explosives rocket propellants characteristics of a good propellant.

Classification of propellants.

Suggested Text Books:

- "Blocks 1-5 of Chemistry Course", Indira Gandhi Open University, IGNOU, New Delhi, 1996.
- Alberty, R.A., and Silbey, R.J., "Physical Chemistry", John Wiley & Sons, Inc., Singapore, 1996.
- Cotton, F.A., Wilkinson, G., and Gaus, P.L., "Basix Inorganic Chemistry", John Wiley & Sons, Inc., Singapore, 3rd Ed., 1996.
- Graham-Solomon, T.W., "Fundamentals of Organic Chemistry", John Wilkey & Sons, Inc., Singapore, 1997.
- Odian, G.G., "Principles of Polymerization", John Wilkey & Sons, New York, 1981.

Name of Reference Books:

- 1. Chemistry in Engineering and Technology (Vol-2) by J. C. Kuriacose, J. Rajaram (Tata McGraw Hill).
- 2. Engineering Chemistry by M.M. Uppal, Revised by S.C. Bhatia (Khanna Publishers).
- 3. Engineering Chemistry by B. K. Sharma(Krishna Prakashan).

Semester	:	2 nd BE Course
Branch	:	Common
Subject	:	Basic Electronics Lab.
Code	:	BE 205

1.To study & plot the V-I characteristics of SI diode.

2. To study & plot the V-I characteristics of zener diode.

3.To study the working knowledge of half wave rectifier without filter.

4. To study the working knowledge of half wave rectifier with filter.

5. To study the working knowledge of full wave rectifier without filter.

6. To study the working knowledge of full wave rectifier with filter.

7.To study & plot the characteristics of UJT.

8. To study and plot input & output characteristics of common base transistor amplifier.

9. To study and plot input & output characteristics of common emitter transistor amplifier.

10.To study the d.c. gate controlled characteristics of SCR.

11.To study the operation of transistorised Hartley oscillator.

12. To study the operation of transistorised Colpitts oscillator.

TEXT BOOKS:

1.Electronic Devices and Circuits-J Millman and C.C. Halkias, Tata McGraw Hill,1998 2.Electronic Devices and Circuits -J Millman and CC Halkias and Satyabrathajit Tata Mc graw Hill 2nd ed 2007.

3.Electronic Devices and Circuits –R L Boylestad and Louis Nashelsky,Pearson/Prentice Hall 9th Edition2006.

REFERENCES:

1.Electronic Devices and Circuits-Prof GS N Raju, I K International Publishing House Ltd 2006.

2.Electonic Devices and Circuits-T F Bogart Jr., J.S.Beasley and G.Rico, Pearson Education,6th edition,2004

3.Principles of electronic circuits- S G Burns and P R Bond, Galgotia publications, 2nd Edn1998 4.Microelectronics- Millman and Grabel, Tata McGraw hill 1988

5.Electronic Devices and Circuits- K Lal Kishore, B S Publication, 2nd edition 2005

Semester	:	2 nd BE Course
Branch	:	Common
Subject	:	Engineering Mechanics Lab.
Code	:	BE 206

List of Experiments

- 1. To verify the Law of Polygon of Forces.
- 2. To find the position of Centre of Gravity and Moment of Inertia a Connecting Rod.
- 3. To verify Newton's First Law of Motion using Inclined Plane and Rolling Cylinder.
- 4. To find the Coefficient of Friction using inclined plane.
- 5. To draw Bending Moment and Shear force Diagram. Includes exercises on Force Polygon and Funicular Polygon
- 6. Graphical Analysis of Trusses.
- 7. Study of Spur Gear.
- 8. Study of Helical Gear.
- 9. To find the velocity ratio of single stage Bevel Gear.
- 10. Study of Spiral Gear.
- 11. To find the velocity ratio of single stage Spur Gear.
- 12. To determine the dry friction between inclined plane and slide boxes of different materials.
- 13. To find the Coefficient of Static Friction between the following block & Wooden Plane (1) Iron Block (2) Aluminum Block (3) Wooden Block
- 14. To obtain the efficiency of a Screw Jack.
- 15. To determine the moment of inertia of a flywheel about its axis of rotation
- 16. To verify: (a). the conditions of equilibrium of forces by parallel force apparatus. (b). The principal of moments by crank lever.
- 17. To determine the velocity ratio of a simple screw jack and to plot graph between (a) Effort-Load.(b) Friction-Load (c). Efficiency-Load.
- 18. To verify the Forces in member of a Jib Crane.
- 19. To verify the reactions in a simply supported Beam.

Name of the Text Books:

- I. B. Prasad : A text book of Applied Mechanics, Khanna Pub., Delhi
- A. K. Tayal : Engineering Mechanics(Statics and Dynamics); Umesh Pub, Delhi
- S. Tomoshenko and D.H. Youngh : Engineering Mechanics
- Shames, I.H., "Engineering Mechanics", Prentice Hall of India.
- Meriam, J.L., "Statics", John Wiley

Name of the Reference Books:

• Bear F. P. & Jonston F.R. : Mechanics for Engineers; McGraw Hills

Semester	:	2 nd BE Course
Branch	:	Common
Subject	:	Engineering Chemistry Lab.
Code	:	BE 207

List of Experiments

- 1. Acid-base titration (estimation of commercial caustic soda)
- 2. Redox titration (estimation of iron using permanganometry)
- 3. Complexometric titration (estimation of hardness of water using EDTA titration).
- 4. Preparation and analysis of a metal complex (for example thiourea/copper sulfate or nickel chloride/ammonia complexes)
- 5. Chemical kinetics (determination of relative rates of reaction of iodide with H₂O2 at room temperature (clock reaction).
- 6. Viscosity of solutions (determination of percentage composition of sugar solution from viscosity).
- 7. Detection of functional groups in organic compounds.
- 8. Utilization of paper/thin layer/column chromatographic techniques in the separation of organic compounds
- 9. Conductometric titration (determination of the strength of a given HCl solution by titration against a standard NaOH solution).
- 10. Determine the amount of oxalic Acid and sulphuric Acid/Hydrochloric Acid in one liter of solution given standard Sodium Hydroxide and Potassium Permangate.
- 11. To determine the Carbonate, Bicarbonate and Chloride contents in irrigation water.
- 12. Determination of dissolved Oxygen in given sample of water.
- 13. Determination of calorific value of fuel by Bomb Calorimeter.
- 14. Determination of Flash Point and Fine Point of Lubricant by Abels and Pensky Martin apparatus.

Suggested Text Books

- "Blocks 1-5 of Chemistry Course", Indira Gandhi Open University, IGNOU, New Delhi, 1996.
- Alberty, R.A., and Silbey, R.J., "Physical Chemistry", John Wiley & Sons, Inc., Singapore, 1996.
- Cotton, F.A., Wilkinson, G., and Gaus, P.L., "Basix Inorganic Chemistry", John Wiley & Sons, Inc., Singapore, 3rd Ed., 1996.
- Graham-Solomon, T.W., "Fundamentals of Organic Chemistry", John Wilkey & Sons, Inc., Singapore, 1997.
- Odian, G.G., "Principles of Polymerization", John Wilkey & Sons, New York, 1981.
- Sykes, P., "A Guidebook to Mechanism of Organic Chemistry", Longman Inc., New York, 1981.

- Dyer, J.R., "Application of Absorption Spectroscopy of Organic Compounds", Prentice Hall of India, 1965.
- Williams D.H. and Fleming, I., "Spectroscopic Methods in Organic Chemistry", Tata McGraw Hill Edition, New Delhi, 4th Ed., 1988.
- Pine, S.H., "Organic Chemistry", McGraw Hill Book Co., New Delhi, 5th Ed., 1987.
- Sharma, B.K., "Engineering Chemistry", Krishna Prakashan Media (P) Ltd., Meerut, 1996.
- Morrison R.T. and Boyd., R.N. "Organic Chemistry" Prentice Hall of India, 6th Ed., 1992.
- Rao c.N.R. and Agarwala, U.C. "Experiments in General Chemistry", East-West Press, New Delhi, 1969.
- Furnish, B.S., Hannaford, a.J. Smith P.W.G. and Tatchell, A.R., Vogel's "Textbook of Practical Organic Chemistry" ELBS, 5th Ed., 1989.
- Vogel's "Textbook of Quantitative Analysis", Longman, New York, 4th Ed., 1978.
- Elias, A.J. Sundar Manoharan S. and Raj, H. "Laboratory Experiments for General Chemistry", I.I.T. Kanpur, 1997.
- A Textbook of Engineering Chemistry by S.S. Dara (S. Chand and Company).
- Engineering Chemistry by P.C. Jain (Dhanpat Rai publishing company)

Name of Reference Books:

- 4. Chemistry in Engineering and Technology (Vol-2) by J. C. Kuriacose, J. Rajaram (Tata McGraw Hill).
- 5. Engineering Chemistry by M.M. Uppal, Revised by S.C. Bhatia (Khanna Publishers).
- 6. Engineering Chemistry by B. K. Sharma(Krishna Prakashan).

Semester	: 2 nd BE Course
Branch	: Common
Subject	: Workshop Practical -II
Total Theory Periods	: 00
Total Practical Periods	: 80
Code	: BE 208

Carpentry

Timber, definition, engineering applications, seasoning and preservation, plywood and ply boards. **Foundry**

Moulding sands, constituents and characteristics. Pattern, definition, materials, types, core prints. Role of gate, runner, riser, core and chaplets. Causes and remedies of some common casting defects like blow holes, cavities, inclusions.

Welding

Definitions of welding, brazing and soldering processes, and their applications, Oxyacetylene gas welding process, equipment and techniques, type of flames and their applications. Manual meta arc welding technique and equipment, AC and DC welding, electrodes, constituents and functions of electrode coating. Welding positions. Type of weld joint. Common welding defects such as cracks, undercutting slag inclusion, porosity.

Metal Cutting

Introduction to machining and common machining operations. Cutting tool materials. Definition of machine tools, specification and block diagram of lathe, shaper, drilling machine and grinder. Common lathe operations such as turning parting, chamfering and facing. Quick return mechanism of shaper. Difference between drilling and boring. Files-material and classification.

Forging

Forging principle, materials, operations like drawing, upsetting, bending and forge welding, use of forged parts. List of Jobs to be Made in the Workshop

Group A

1. T-Lap joint and Bridle joint	(Carpentry shop)	4 hrs
2. Mould of any pattern	(foundry shop)	2 hrs
3. Casting of any simple pattern	(foundry shop)	2 hrs
Group B 1. (a) Gas welding practice by students of	on mild steel flat	2 hrs
(b) Lap joint by Gas welding		
2. (a) MMA Welding practice by studen	ts	2 hrs
(b) Square butt joint by MMA Weldin	ıg	
3. (a) Lap joint by MMA Welding		1 hr
(b) Demonstration of brazing		1 hr
4. Tin smithy for making mechanical joint	int and	2 hrs
soldering of joints		

Group C

1. Job on lathe with one step turning and chamfering operations	2 hrs
2. Job on shaper for finishing two sides of a job	2 hrs
3. (a) Drilling two holes of size 5 and 12 mm	
Diameter on job used/to be used for shaping	2 hrs
(b) Grinding a corner of above job on bench grinder	2 hrs
4. Finishing of two sides of a square piece of filling	2 hrs

Suggested Text Books

- Begeman, M.L. and amstead, B.H. "Manufacturing Process", John Wiley, 1968.
- Chapman, W.A.J. and Arnold, E. "Workshop Technology", Vol. I & III, viva Low Priced Student Edition, 1998.
- Raghuwanshi, B.S. "Workshop Technology", Vol. I & II, Dhanpat Rai and Sons, 1998.
- Chaudhary, Hajra "Elements of Workshop Technology", Media Promotors & Publishers, 1997.
- Crawford, S. "Basic Engineering Processes", Hodder Stoughton, 1985.

REFERENCE BOOKS:

- Chapman, W.A.J. and Arnold E., "Workshop Technology" Vol. I & III, Viva Low price student Edition, 1998.
- Chaudhary, Hajra, "Elements of Workshop Technology" Media Promoters & Publishers, 1997.
- Raghuwanshi, B.s., "Workshop Technology" Vol I 7 II, Dhanpat Rai and Sons 1998.

Semester	: 2 nd BE Course
Branch	: Common
Subject	: Power Point Presentation
Total Practical Periods	: 24
Code	: BE 209

Communication Skills (Practical)

List of exercises to be performed as practical work in language lab to train the students to be proficient in communication.

- > Formal and Informal Speaking
- > Elementary Phonetics (Speech Mechanism. The Description of Speech Sounds, The Phoneme the syllable; Intonation and Word Accent)
- > Paralinguistic features of speaking (voice quality, pitch, tone, etc.)
- > Paper Presentation
- > Use of Audio-Visual aids: Preparation of transparencies, slides, power point presentation etc.
- > Body Language.
- > Exercises on Listening Comprehension.
- > Exercises on Reading Comprehension.
- > Effective Writing.
- > Internet exploration.

Name of the Text Books:

- Sharma RC & Mohan K "Business Corresponding and Report Writing", Tata McGraw Hill, New Delhi, 1994.
- Alok Jain, P S Bhatia & A M Shiekh "Professional Communication Skills; S. Chand & Company Ltd. 2005.
- Rajendra Pal and JS Korlahalli "Essentials of Business Communication", Sultan Chand & Sons, 1997.
- A guide to Correct English Oxford University Press, Ely House, London W.I., Latest Edition. (For Unit III)
- English Sentence Structure by T.C. JUPP, and JOHN MILNE, ELBS edition published by Heinemann Educational Books Ltd. Latest Edition. (For Unit III)

Name of the Reference Books:

- Fiske, john "Introduction to Communication Studies", Rotledge London, 1990.
- Geoffrey Leech & Jan Svartvik "A Communicative Grammar of English", ELBS Longman, England.