



RAJIV GANDHI PROUDYOGIKI VISHWA VIDYALAYA, BHOPAL

SEMESTER	:	SECOND SEMESTER
SCHEME	:	JUL.08
NAME OF COURSE (SUBJECT)	:	APPLIED MECHANICS
OLD PAPER CODE	:	0012
NEW PAPER CODE	:	6034
COMMON WITH PROGRAMME (BRANCH)	:	A03, C01, C02 C03,C05, E01, E03, M02, , P01, P03, P04, R01, T02.
LECTURE HRS. PER WEEK	:	TH. 06, PR. 02
LECTURE HRS. PER SEMESTER	:	TH. 90, PR. 30

RATIONALE

In the wider sense “Applied Mechanics” may be defined as a science which deals with the problems related to objects in motion or in equilibrium.

Depending on the discipline of the technicians the depth of knowledge and extent of areas of mechanics will vary.

Only those topics which form common requirement of the different courses and those to, a depth required by all have been included in this subject. Further study of this subject in respect of topic/ depth is left out and could be integrated with their use in subjects like theory of structure, strength of materials, theory of mechanics and basic machine design.



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S. NO.	COURSE CONTENT	Marks
1.	COMPOSITION AND RESOLUTION OF FORCES	10
1.1	Definition , Effect, characteristics of force	
1.2	System of Forces	
1.3	Principle of Transmissibility of Forces	
1.4	Concept of Resultant Force	
1.5	Law of – <ul style="list-style-type: none">• Parallelogram of Forces• Triangle of Forces• Polygon of Forces	
1.6	Determination of Resultant of two or more concurrent forces (analytically and graphically)	
2.	PARALLEL FORCES AND COUPLES	10
2.1	Classification of Parallel Forces	
2.2	Methods of finding resultant Force of parallel forces- analytically & graphically	
2.3	Position of resultant force of parallel forces	
2.4	Definition, Classification and characteristics of a force Couple, moment of couple	
03.	MOMENTS AND THEIR APPLICATIONS	10
3.1	Definition, Types and law of moment	
3.2	Varignon's Principle of moment and its applications	
3.3	Lever and its Applications	
3.4	Types of supports and determination of support reactions of a simply supported beam subjected to point load and uniformly distributed load (UDL)	

04.	EQUILIBRIUM OF FORCES	10
4.1	Equilibrium of a system of concurrent forces	
4.2	Conditions and types of Equilibrium	
4.3	Lami's Theorem and its applications	
05.	CENTRE OF GRAVITY	10
5.1	Difference between Centroid and Center of Gravity (CG)	
5.2	Centroid of standard plane figures and CG of simple solid bodies	
5.3	Method of finding out Centroid of composite plane laminas and cut sections	
5.4	Method of finding out CG of Composite solid bodies	
06.	FRICTION	10
6.1	Concept and types of friction	
6.2	Limiting Friction, coefficient of friction, angle of friction, angle of repose	
6.3	Laws of friction (Static and Kinetic)	
6.4	Analysis of equilibrium of Bodies resting on Horizontal and inclined Plane	
6.5	Utility / Nuisance value of friction	
07	SIMPLE LIFTING MECHINES	10
7.1	Concept of lifting Machines	
7.2	Definition of Mechanical Advantage, Velocity Ratio and Efficiency of Machines and their relation	
7.3	Reversibility of Machines and condition for self locking machine	
7.4	Law of Machines, Maximum mechanical advantage and maximum efficiency of machine	
7.5	Friction in machine (In terms of Load and effort)	
7.6	Calculation of M.A., V.R. and efficiency of following machines <ul style="list-style-type: none"> • Simple wheel and axle • Differential wheel and axle • Single purchase crab • Double purchase crab • Simple screw jack • Different System of simple pulley blocks 	
08	MOTION OF A PARTICLE	10
8.1	Definition of speed, velocity, acceleration, uniform velocity, uniform acceleration and variable acceleration	
8.2	Motion under constant acceleration/ retardation (equations of motion)	
8.3	Motion under force of gravity	
8.4	Concept of relative velocity	
8.5	Definition of projectile, velocity of projection , angle of projection, time of light, maximum height, horizontal range and their determination	
8.6	Definition of angular velocity, angular acceleration and angular displacement	
8.7	Relation between linear and angular velocity of a particle moving in a circular path	
8.8	Motion of rotation under constant angular acceleration	
09	LAWS OF MOTION	10
9.1	Newton's Laws of motion and their applications	

10	WORK, POWER AND ENERGY	10
10.1	Definition unit and graphical representation of work	
10.2	Definition and unit of power and types of engine power and efficiency of an engine.	
10.3	Definition and concept of Impulse	
10.4	Definition, unit and types of energies	
10.5	Total energy of a body falling under gravity	



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S. NO.	LIST OF EXPERIMENTS
01.	Verification of laws of parallelogram of forces.
02.	Verification of laws of polygon of forces
03.	Verification of laws of moments
04.	Determination of forces in the members of Jib Crane
05.	Determination of Centroid of plane lamina by graphical method
06.	Determination of coefficient of friction for surfaces of different materials on horizontal plane
07.	Determination of coefficient of friction for surfaces of different materials on an inclined plane
08.	Determination of mechanical advantage, velocity ratio and efficiency of the following lifting machines <ul style="list-style-type: none">• Simple wheel and axle• Differential wheel axle• Single purchase crab• Double purchase crab• Simple pulley block• Simple screw jack
09.	Measurement of B.H.P. of an engine using rope break dynamometer



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S. NO.	REFERENCE BOOKS
01.	A text book of Applied Mechanics – R.S. Khurmi , S.C. Chand & Co. , New Delhi
02	Applied Mechanics – I.B. Prasad, Khanna Publishers, New Delhi
03.	Applied Mechanics (Hindi) – R.S. Jog, Anand Publishers, Gwalior
04.	Applied Mechanics (Hindi) – A.R. Page, Deepak Prakashan, Gwalior

MEMBERS PARTICIPATED IN CURRICULUM REVISION

1. Sh. B.V. Trivedi Retd. HOD Civil Engg.
2. Sh. R.C. Gupta Selection Grade Lecturer, Ujjain Polytecnic
3. Sh. Y. Gupta Senior Lecturer, S. V. Polytechnic, Indore
4. Sh. N.K. Atulkar Senior Lecturer, S. V. Polytechnic, Indore



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BHOPAL**

SEMESTER	:	SECOND SEMESTER
SCHEME	:	JUL.08

NAME OF COURSE (SUBJECT)	:	ENGINEERING DRAWING
OLD PAPER CODE	:	0234
NEW PAPER CODE	:	6036
COMMON WITH PROGRAMME (BRANCH)	:	A03, C01, C02, C03,C05, E01, E03, M02, P01, P03, P04, R01, T02.
LECTURE Hrs. PER WEEK	:	TH. 08
LECTURE HRS. PER SEMESTER	:	TH. 120

RATIONALE

Engineering Technician irrespective of his field of operation in an industry is expected to possess a thorough understanding of drawing which includes clear spatial visualization of objects and the proficiency in reading and interpreting a wide variety of engineering drawings. Besides this he is also expected to possess a certain degree of drafting skill, depending upon his job functions in his day to day activities. This course of engineering drawing for diploma courses in Engineering branches is aimed at developing basic knowledge and skill, of engineering drawing.



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(BRANCH) **P03, P04, R01, T02.**
LECTURE Hrs. PER WEEK : **TH. 08**
LECTURE HRS. PER SEMESTER : **TH. 120**

S.NO.	COURSE CONTENT	Marks
	NOTE: ONLY FIRST ANGLE PROJECTION METHOD IS TO BE FOLLOWED	
01	INTRODUCTION TO DRAWING INSTRUMENTS: Introduction of drawing instruments, materials and their uses Applications of minidrafter Applications of compass and divider Applications of French curves and spline Pencils grades and their uses Designation and sizes of drawing sheet and drawing board	02
02	PLANNING AND LAYOUT OF DRAWING SHEET: Planning of drawing sheet as per I.S.: 696-1972 (SP 46: 1988) This should include Margin. Title Block. Zoning. Revision panel. Folding marks. Numbering of sheet.	02

<p>03</p>	<p>CONVENTIONAL REPRESENTATION: Conventional representation of the following as per BIS practice</p> <p>Common Engineering materials Electrical installations and fittings – Main switches, (lighting and power), socket outlets (3 pin 5AMP, 3pin15AMP), bell, buzzer, loud speaker, Aerial, ceiling fan, exhaust fan, Bracket fan, fan regulator, battery and earth point.</p> <p>Electronics components- Diode: Zener, varactor, Scotty, step recovery, light emitting diode (LED), PNP and NPN transistors, resistance, capacitor, Inductors (fixed and variable both), IC (8pin and 14pin) SCR, TRIAC, DIAC, UJT, FET, MOSFET, LOGIC GATES</p> <p>Sanitary fittings- showerhead, wall lavatory basin, corner Lavatory basin, urinal stall, kitchen sink, Indian type WC, Water closets (Asian pan, urissapan, Anglo-Indian, European)</p> <p>Building -single and double swing doors and windows.</p> <p>Mechanical components- Internal and external threads, slotted head, Square end and flat, radial arms and ribs, serrated shaft, splined shaft, Chain wheel, bearing, straight and diamond knurling, Compression and tension spring, leaf spring (with and without eye), Spur and helical gear</p>	<p>06</p>
<p>04</p>	<p>LINES, LETTERING AND DIMENSIONING: Introduction of type of lines and their applications Single stroke vertical, inclined letters (capital and lowercase) And numerals. Dimensioning: Elements of dimensioning- dimension line, extension line, arrowhead And leader line Dimensioning system – Aligned and unidirectional. Dimensioning of Arcs and Circles. Angular Dimensioning. Dimension of counter sunk and counter bore.</p>	<p>05</p>

05	<p>OMETRICAL CONSTRUCTIONS AND ENGINEERING CURVES</p> <p>Divide a line into any number of equal parts by parallel line method Bisecting of line and angle. Construction of triangles and polygons Introduction of conic sections (curves) Construction of Ellipse by Eccentricity and Concentric circles methods Construction of Parabola by Eccentricity and Rectangle methods Construction of Hyperbola by Eccentricity method Construction of Cycloid Construction of Involutés of circle and polygon Construction of Archemidian Spiral of any number of convolutions</p>	10
06	<p>SCALES:</p> <p>Introduction of scales and their applications Concept of reducing, enlarging and full size scale Classification of scales – plain, diagonal, vernier, Scale of chord and comparative scales Definition of R.F Construction of plain and diagonal scales</p>	10
07	<p>ORY OF PROJECTION AND PROJECTION OF POINTS, LINES AND PLANES</p> <p>Definition of various term associated with theory of projection- Planes of projection, Quadrants, first & third angle projection method Projection of points in all the four quadrants. Projection of lines- 1.parallel to HP and VP both. 2.perpendicular to one plane and parallel to other. 3.Inclined to one plane and parallel to other. 4.knowledge of projection of line inclined to both the planes (No practice required) Projection of planes – 1 Perpendicular to HP and VP both 2 Perpendicular to one plane and parallel to other 3.Inclined to one plane and perpendicular to other. 4 Knowledge of projection of plane inclined to both the planes</p>	10

08.	<p>PROJECTIONS OF SOLIDS: Projection of cylinder, cone, prism and pyramid. Under the following conditions: 1 Axis parallel to HP and VP 2 Axis perpendicular to HP and parallel to VP 3 Axis perpendicular to VP and parallel to HP 4 Axis inclined to HP and parallel to VP. 5 Axis inclined to VP and parallel to HP. 6 Axis inclined to both HP and VP</p>	10
09.	<p>SECTION OF SOLIDS AND DEVELOPMENT OF SURFACES: Section of cone, cylinder, prism and pyramid (Solid resting on its base in the HP i.e. the Axis perpendicular to HP and parallel to VP) in the following cases: 1 Section plane parallel to HP and perpendicular to VP 2 Section plane parallel to VP and perpendicular to HP. 3 Section plane inclined to HP and perpendicular to VP. 4 Section plane inclined to VP and perpendicular to HP. Drawing True shape of section. Introduction to development of lateral surface of solids- Cone, Cylinder, Prism and Pyramids (Simple and truncated) Under the condition – solid resting on its base in the HP and axis Perpendicular to HP and parallel to VP Development of funnel and elbow</p>	15
10.	<p>INTERSECTION OF SURFACES Intersection of following cases – Cylinder to cylinder and Prism to prism (With their axis intersecting and perpendicular to each other.)</p>	05
11.	<p>ORTHOGRAPHIC PROJECTIONS & FREE HAND SKETCHING: Principles of orthographic projections Identification of necessary views and superfluous view Selection of front view Preparation of necessary orthographic views of simple objects From given pictorial views Dimensioning of orthographic views as per standard practice. Free hand sketches of simple objects (Using Pencil, Eraser & Paper only)</p>	15
12.	<p>ISOMETRIC VIEWS Concept of isometric projection and isometric view (Isometric Drawing) Construction of isometric scale Construction of isometric view of polygon and circle Construction of isometric view of cone, cylinder, prism and pyramids Construction of isometric view of simple objects from given orthographic views</p>	10



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S.NO.	REFERENCE BOOKS
1	ENGINEERING DRAWING – N.D. Bhatt
2	ENGINEERING DRAWING – R.K. Dhawan
3	ENGINEERING DRAWING – P.S.Gill
4	FIRST YEAR ENGINEERING DRAWING – A.C.Parkinson
5	SP: 46-1988 Bureau of Indian standard
6	PRINCIPLES OF ELECTRONICS - Malvino
7	ABHIYANTRIK AAREKHAN - SHIVDATT UPADHYAY

MEMBERS PARTICIPATED IN CURRICULUM REVISION

1. Sh. D.K. Joshi , Sr. Lecturer, Govt. Polytechnic, Ujjain
2. Sh. Ashok Vyas,Sr. Lecturer, S.V. Polytechnic, Indore
3. Sh. Mahendra Jain, Lecturer, S.V. Polytechnic, Indore
4. Sh. M.M. Sanganeria, Lecturer, S.V. Polytechnic, Indore
5. Sh. K.K. Gadghey, Lecturer, S.V. Polytechnic, Indore



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SEMESTER	:	SECOND SEMESTER
SCHEME	:	JUL.08
NAME OF COURSE (SUBJECT)	:	ENVIORNMENTAL ENGINEERING & SAFETY
OLD PAPER CODE	:	0262
NEW PAPER CODE	:	6035
COMMON WITH PROGRAMME (BRANCH)	:	A03, C01, C02 C03,C05, E01, E03, M02, P01, P03, P04, R01, T02, O03.
LECTURE HRS. PER WEEK	:	TH. 06, PR. 02
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RATIONALE

Engineers and scientists from a number of related disciplines have been involved over years in the development of an academic basis for understanding and management of the environment. The purpose of keeping the Environment Engineering & Safety is to introduce a unique approach to the overall concept of environmental engineering an approach that emphasizes the relationship between the principles observed in natural purification processes and those employed in engineered processes.



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SEMESTER : **SECOND SEMESTER**
SCHEME : **JUL.08**
NAME OF COURSE (SUBJECT) : **ENVIRONMENTAL ENGINEERING & SAFETY**
OLD PAPER CODE : **0262**
NEW PAPER CODE : **6035**
COMMON WITH PROGRAMME : **A03, C01, C02 C03,C05, E01, E03, M02, P01,**
(BRANCH) **P03, P04, R01, T02, O03.**
LECTURE HRS. PER WEEK : **TH. 06, PR. 02**
LECTURE HRS. PER SEMESTER : **TH. 90, PR.30**

S.No	COURSE CONTENTS	Marks
1	INTRODUCTION TO environment. 1.1 THE BIOSPHERE, biotic and abiotic 1.2 An aquatic ecosystem 1.3 Types of pollution 1.4 Impact of human being on environment. 1.5 Impact of environment on human being 1.6 Basic approach to improve environmental qualities 1.7 Roll of an environmental engineer	05
2	AIR POLLUTION SOURCES AND EFFECTS 2.1 Standard definition of air pollution 2.2 Composition of natural air 2.3 Names of air pollutants 2.4 Classification of air pollutants, primary and secondary pollutants 2.5 Classification of source of air pollutants on different bases 2.6 Definition of different types of aerosols. 2.7 Effect of air pollution on: human health, material properties, vegetation. 2.8 Major toxic metals and their effects 2.9 Major environmental phenomenon e.g., acid rain, global warming, green house effect, ozone layer depletion. 2.10 Air quality standards 2.11 Brief description of air pollution laws.	10
3	METEOROLOGICAL ASPECTS OF AIR POLLUTANT DISPERSION 3.1 Meteorological parameters influencing air pollution 3.2 Environmental laps rate, temperature inversion, atmospheric stability and adiabatic loss rate. 3.3 Turbulence, topographical effects, 3.4 Plume behavior, looping, coning, fanning fumigation, lofting , trapping.	10
4	AIR POLLUTION CONTROL METHODS AND EQUIPMENTS 4.1 Natural purification processes of air 4.2 Artificial purification methods of air 4.3 Brief description of following control equipments along with sketch e.g, gravitation settling chamber, cyclone, scrubber, bag house filter, electrostatic precipitator. 4.4 Brief description of following processes for the control of gaseous pollutants e. g., absorption, adsorption, condensation, combustion etc	20

5	WATER POLLUTION SOURCES AND CLASSIFICATION 5.1 Water resources 5.2 Uses of water 5.3 Classification of water 5.4 Origin, composition and characteristics of domestic waste water as well as industrial waste water 5.5 Biochemical oxygen demand 5.6 Water pollution laws and standards 5.7 Uses of waste water 5.8 Classification of waste water 5.9 Chemical oxygen demand	10
6	Waste water treatment method 6.1 basic processes of water treatment 6.2 Meaning of primary, secondary and tertiary treatment 6.3 Flow chart of a simple effluent treatment plant 6.4 Theory of industrial waste treatment 6.5 Volume reduction, neutralization and proportioning	10
7	SOLID WASTE MANAGEMENT 7.1 Sources and classification of solid waste 7.2 Public health aspects 7.3 Disposal methods – open dumping , sanitary , land fill 7.4 Incineration , compositing 7.5 Potential methods of disposal 7.6 Recovery and recycling of paper, glass, metal and plastic	15
8	NOISE POLLUTION AND CONTROL 8.1 Sources of noise pollution 8.2 Units of Noise pollution measurement 8.3 Allowable limits for different areas 8.4 Problems of noise pollution and measures to control it 8.5 Noise pollution control devices brief discussion	10
9	SAFETY PRACTICES 9.1 Responsibility of employees and employers regarding health and safety 9.2 Fire hazards ,prevention and precautions 9.3 Industrial hazards prevention and protection 9.4 Protection from air and noise pollution	10



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(BRANCH) **P03, P04, R01, T02, O03.**
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S.NO.	LIST OF PRACTICALS
1	GROUP A AIR POLLUTION (Any one experiment may be selected from this group) 1. Air monitoring and determination of SPM , CO, Nox, SO ₂ with high volume sampler. 2. Monitoring of stack gases and determination of SPM , CO, Nox, SO ₂ with slack monitoring kit. 3. Determination of CO,HC, in exhaust gases from petrol vehicle
2	GROUP B NOISE POLLUTION 4. Determination of sound pollution in (a) Auditorium (b) Factories (c) Busy roads (d) Theatre (e) TV rooms (select any three situations)
3	GROUP C INDUSTRIAL WASTE WATER (Any Two experiment may be selected from this group) 5. Determination of BOD/COD ratio in industrial waste water. 6. Determination of Ph and alkanity/ acidity in industrial waste water. 7. Determination of solids in industrial waste water. 8. Determination of turbidity, colour, and temperature of industrial waste water.
4	GROUP D POLLUTION STANDARDS(Any Two experiment may be selected from this group) 9. Study of drinking water standards. 10. Study of effluent standards for water disposal. Study of air pollution standards.



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OLD PAPER CODE : 0262
 NEW PAPER CODE : 6035
 COMMON WITH PROGRAMME (BRANCH) : A03, C01, C02 C03,C05, E01, E03, M02, P01, P03, P04, R01, T02, O03.
 LECTURE HRS. PER WEEK : TH. 06, PR. 02
 LECTURE HRS. PER SEMESTER : TH. 90, PR.30

S.NO.	REFERENCE BOOKS
1	Environmental pollution control Engineering by C.S. Rao
2	Air pollution and control by Seth
3	Air pollution by M.N Rao
4	Industrial waste and its treatment by Seth
5	Paryavaran Yantriki Hindi granth akadami

MEMBERS PARTICIPATED IN CURRICULUM REVISION

1. Shri R.C. gupta - Selection grade Lecturer(Civil Engg),
Ujjain Polytechnic College, Ujjain
2. ShriH.P. Dishoriya - Sr.Lecturer (Civil Engg)
S.V.Polytechnic College, Indore
3. Subhash Laad - Sr.Lecturer (Civil Engg)
S.V. Polytechnic College, Indore



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SEMESTER : **SECOND SEMESTER**
SCHEME : **JUL.08**
NAME OF COURSE (SUBJECT) : **INTRODUCTION TO COMPUTERS**
OLD PAPER CODE : **0261**
NEW PAPER CODE : **5132**
COMMON WITH PROGRAMME : **A03, C01, C02 C03,C05, E01, E03, M02, P01,**
(BRANCH) **P03, P04, R01, T02, A05, O03.**
LECTURE HRS. PER WEEK : **TH. 04, PR. 04**
LECTURE HRS. PER SEMESTER : **TH. 60, PR.60**

RATIONALE

This subject is design to make students aware of basic concepts of computers including operating systems. Studying this subject will make students acquainted with word processing, spread sheet and data base concepts and working. This subject also introduces computer communication and networks, including internet & E-mail. The basic objective is to make students excel with good knowledge about computers.



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OLD PAPER CODE : 0261
 NEW PAPER CODE : 5132
 COMMON WITH PROGRAMME : A03, C01, C02 C03,C05, E01, E03, M02, , P01,
 (BRANCH) P03, P04, R01, T02, A05, O03.
 LECTURE HRS. PER WEEK : TH. 04, PR. 04
LECTURE HRS. PER SEMESTER : TH. 60, PR.60

S. NO.	COURSE CONTENT	Marks
1.	<p>Introduction to Computers</p> <p>1.1 Basic Concepts Generations of Computers Overview of computer Systems Classifications of Computers Characteristics of Computes Applications of Computers.</p> <p>1.2 Numbers System & Codes Decimal, Binary, Octal, Hexadecimal Conversions from one system to other Binary Coded Decimal & ASCII Code</p> <p>1.3 Computer Hardware Input Devices Keyboard, Mouse, Trackball, Joystick, Scanner, OMR OCR Bar-Code Reader, MICR, Digitizer, Card Reader, Voice Recognition, Web Cam, Video Cameras, Etc. Output Devices Monitors, Printers : Dot matrix, Inkjet & Laser, Plotters, Commuter, Output Micro Film (COM), Multimedia Projector, Speech Synthesizr, Dumb, Smart & Intelligent Terminal. Storage Devices Primary and Secondary Storage, Characteristics and Limitation, Floppy, Hard disk, CD ROM DVD, Disk Cartidge. Microprocessor Registers, Arithmetic Unit, Control Unit, Buses, Instruction Set, Processor Speed. Memory Concepts Concept of Memory, Unit of Memory, Types of Memory, RAM, ROM, PROM, EPROM, EEPROM, Cache Memory.</p> <p>1.4 Computer Software</p>	25

	<p>Computer Software System Software V/s Application Software Operating System Programs Language Processor, Assembler, Compiler & Interpreter.</p> <p>Application Software Types of Application Software and their examples. High Level Language, Low Level Language, Assembly Language.</p> <p>1.5 Multimedia Basics of Multimedia Components- Tex, Graphics, Animation, Audio, Images & Video. Multimedia Applications.</p>	
2	<p>Operating System</p> <p>2.1 Overview of DOS Internal Commands External Commands</p> <p>2.2 Windows Operating System Overview of different versions of Windows Characteristics and Facilities of Windows, Terminologies of Windows – Desktop, Icon, Menu etc. Components of Desktop. Working with Files and Folders. Windows Utilities and Accessories – Notepad, WordPad, Paintbrush, Windows Explorer, Calculator.</p> <p>2.3 Introduction to Linux An overview of Linux Basic Linux elements System Features Software Features File structure Linux H/W & S/W requirements.</p>	15

3	<p>Word Processing</p> <p>Saving, Closing, Opening of documents</p> <p>Selecting text</p> <p>Editing text</p> <p>Finding and replacing text\</p> <p>Printing documents</p> <p>Merge Documents</p> <p>Character and paragraph Formatting</p> <p>Page Design and layout</p> <p>Spell Check</p> <p>Creating Tables and Charts.</p> <p>Handling Graphics</p>	10
4	<p>Spreadsheet Package</p> <p>Spreadsheet concept – Need, advantage, Terminology like cell, row, column etc.</p> <p>Working with Spreadsheet – Creating, Saving, Editing and printing</p> <p>Entering data – Entering number, text, date, time etc.</p> <p>Selecting cells – Cut, copy, paste date</p> <p>Editing Worksheet data</p> <p>Formatting – Text and Cells, Applying border shading, background patterns, conditional formats, positioning cells, formatting numbers, text, Date, time.</p> <p>Creating formulas- Entering, Editing, Using Functions, Controlling calculations.</p> <p>Working with Charts- Creating charts, Adding & changing text, changing the view and display, types of charts.</p>	15
5	<p>Presentation Software</p> <p>Introduction</p> <p>Presentation design tools</p> <p>Presentation terminologies</p> <p>Creating, Opening and Saving Presentation</p> <p>Working with different views</p> <p>Creating and Organizing slides</p> <p>Adding and Formatting text in slides</p> <p>Formatting paragraphs</p>	10

	<p>Adding drawings and objects Creating special effects Working with table and charts Printing Presentation</p>	
6	<p>Database</p> <p>Introduction – need, Characteristics and terminologies of database Types of database – relational, Hierarchical and Network Basic entities – Tables, records, Data types, Data Validation and constraints, keys relation between tables. Query – Select, Insert, Update, Delete. Forms – Creating forms, Forms controls Report Designer- Customize formats, grouping reports.</p>	15
7	<p>Computer Communication & Networks</p> <p>7.1 Information Networks The Technology of Workgroup Computing Types of network Network topology Network components</p> <p>7.2 Data Communication Introduction to Data Communication Types of Data Transmission media</p> <p>7.3 Internet and E-mail Internet Basics Websites- Applications, terminologies, naming conventions. Web Browsers- Types, Navigation and tools E-mail – concept, terminologies, mailing services provider, advantages comparison with Conventional mailing</p>	10

	Search engine – concept, search engine websites, searching methods.	
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RAJIV GANDHI PROUDYOGIKI VISHWA VIDYALAYA, BHOPAL

SEMESTER	:	SECOND SEMESTER
SCHEME	:	JUL.08
NAME OF COURSE (SUBJECT)	:	INTRODUCTION TO COMPUTERS
OLD PAPER CODE	:	0261
NEW PAPER CODE	:	5132
COMMON WITH PROGRAMME (BRANCH)	:	A03, C01, C02 C03,C05, E01, E03, M02, , P01, P03, P04, R01, T02, A05, O03.
LECTURE HRS. PER WEEK	:	TH. 04, PR. 04
LECTURE HRS. PER SEMESTER	:	TH. 60, PR.60

EQUIVALENCY

New paper code is equivalent to old paper code of respective branch.



**RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA,
BHOPAL**

SEMESTER : **SECOND SEMESTER**
SCHEME : **JUL.08**
NAME OF COURSE (SUBJECT) : **INTRODUCTION TO COMPUTERS**
OLD PAPER CODE : **0261**
NEW PAPER CODE : **5132**
COMMON WITH PROGRAMME : **A03, C01, C02 C03,C05, E01, E03, M02, , P01,**
(BRANCH) **P03, P04, R01, T02, A05, O03.**
LECTURE HRS. PER WEEK : **TH. 04, PR. 04**
LECTURE HRS. PER SEMESTER : **TH. 60, PR.60**

S. NO.	LIST OF EXPERIMENTS
1	Study of various components of computer like CPU, keyboard, mouse, monitor, printer, CVT and storage devices. Internal and external commands of DOS.
2	Using Windows operating system, study of desktop, control panel, accessories and settings.
3	File management in windows explorer, Study of WordPad, NotePad, PaintBrush, Calculator etc.
4	Study of Linux operating system.
5	Study of MS-word – opening and saving of documents, formatting, editing and spell check, find and replace, printing, merging. Creating Table, Charts and Graphics. Study of Spreadsheet – creating, saving, editing and printing. Entering data, selecting cells, formatting text,

6	applying border shades and backgrounds, creating formulas, creating charts.
7	Study of Power Point – creating, opening, editing and saving of slides. Adding and formatting text, creating animations, working with images and special effects. Printing presentation.
8	Study of MSAccess – creating, saving, editing and printing of tables. Managing relationships, writing queries e.g. SELECT, UPDATE, DELETE, INSERT. Forms designing and report printing.
9	Study of Web Browser and mailing programs.



RAJIV GANDHI PROUDYOGIKI VISHWA VIDYALAYA, BHOPAL

SEMESTER : SECOND SEMESTER
 SCHEME : JUL.08
 NAME OF COURSE (SUBJECT) : INTRODUCTION TO COMPUTERS
 OLD PAPER CODE : 0261
 NEW PAPER CODE : 5132
 COMMON WITH PROGRAMME (BRANCH) : A03, C01, C02 C03,C05, E01, E03, M02, , P01, P03, P04, R01, T02, A05, O03.
 LECTURE HRS. PER WEEK : TH. 04, PR. 04
 LECTURE HRS. PER SEMESTER : TH. 60, PR.60

S. NO.	REFERENCE BOOKS
01.	S . Jaiswal, A First Course in Computers, Golgotha Publication
02.	Slotnick, Butterfield, Colantonio and Kopetzky, Computers & Application, C.C. Health & Company
03.	Suresh K. Basandra, Computers Today, Galgotia Publication
04.	Ron Mansfield, The Complete Guide to Microsoft Office Professional, Sybex /BPB Asian Edition
05	Norton Peter, Inside IBM PC
06	Hardware Bible, BPB Publication
07	Computer Hardware, Osborne Series
08	DOS & Utilities, BPB Publication
09	Learning Windows in 24 Hours, Sam Techmedia
10	Tay Vaughan, Multimedia Making it work, Tata McGrawHill
11	Chapman, Understanding windows, BPB Publication

MEMBERS PARTICIPATED IN CURRICULUM REVISION

1. Shri Rajeev Dubey - I/C HOD PDCA S.V.Polytechnic, Indore

2. Shri Sanjay Jain - Lecturer, S.V.Polytechnic, Indore
3. Shri Girish Kaushal - Lecturer, S.V.Polytechnic, Indore
4. Shri Navanit Choudhury - System Analyst, S.V.Polytechnic, Indore



RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL

SEMESTER : **SECOND SEMESTER**
SCHEME : **JUL.08**
NAME OF COURSE (SUBJECT) : **WORKSHOP PRACTICE**
COMMON WITH PROGRAMME : **A03, C01, C02 C03,C05, E01, E03, M02, , P01,**
(BRANCH) **P03, P04, R01, T02.**
LECTURE HRS. PER WEEK : **PR. 04**
LECTURE HRS. PER SEMESTER : **PR. 60**

RATIONALE

Work shop practice is the fundamental exposure to basic skill required for all students pursuing their studies in various diploma-engineering disciplines. The practice experience would help students to understand the intricacies of industrial Working in relatively shorter period of time more over the contents of this Curricula forms a basic link for higher studies of engineering programs

The students are advised to undergo each skill experience with know-how approach giving special emphasis to know-why for the various instructions imparted to them in each shop.



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 (BRANCH) P03, P04, R01, T02.
 LECTURE HRS. PER WEEK : PR. 04
 LECTURE HRS. PER SEMESTER : PR. 60

S. No.	COURSE CONTENT
1.	<p>INTRODUCTION TO WORK SHOP:-</p> <p>1.1 General Safety rules of workshop</p> <p>1.2 State the General Safety Measures to be observed in Workshop.</p> <p>1.3 State the General house keeping activities</p> <p>1.4 Prepare a list of general safety Rules to be followed in Workshop</p>
2.	<p>Fitting shop</p> <p>2.1 Layout of Shop</p> <p>2.2 Sketch & Label Details of shop Layout</p> <p>2.3 Type of jobs produced in fitting shop</p> <p>2.4 Understand the functions of fitting shop</p> <p>2.5 Understand different Metals, Alloys & their Sections</p> <p>2.6 List the Commonly used Metals, Alloys.</p> <p>2.7 State at least Five Sections, Shape & Size of Metals, Alloys.</p> <p>2.8 Use relevant IS Code for commonly used materials with their samples of different Cross sections.</p> <p>2.9 Fitting tools.</p> <p>2.10 Know use of fitting tools, sketch various tools & label their parts.</p> <p>2.11 Classify fitting tools as marking tools, Clamping devices, striking tools, cutting tools etc.</p> <p>2.12 Know the marking out & inspection instruments such as surface plate, marking block, scribe, tri square, bevel protractor etc.</p> <p>2.13 Fitting operation: - Use of Various fitting tools, inspection & measuring Instruments. To produce given jobs.</p> <p>2.14</p> <p>2.15 Choose correct Shape & Size of Blank for a given drawing.</p> <p>2.16 Marking as per drawing using correct method, tools & sequence.</p>
	<p>2.17 Choose correct sequence of operations for the job viz. Sawing, filing, scraping, drilling & Tapping etc.</p> <p>2.18 Select appropriate Tools, inspection and measuring instruments.</p> <p>2.19 Clamping the job in correct position in an appropriate clamping device.</p> <p>2.20 Perform the operation with appropriate body posture, method & precision, exercising personal judgment of need of the force.</p> <p>2.21 Inspect the job as and when necessary.</p> <p>2.22 Introduction to screw threads.</p> <p>2.23 Know common types of screw threads & the terminology used.</p> <p>2.24 Sketch and label details of Metric & Whitworth thread.</p>

<p>3.</p>	<p>Carpentry Shop: -</p> <p>3.1 Carpentry shop lay out. 3.2 Sketch & Label Details of shop Layout. 3.3 Type of jobs produced in carpentry shop. 3.4 Understand the functions of carpentry shop. 3.5 Introduce type of jobs produced by carpenter. 3.6 Commonly used raw materials: 3.7 Know commonly used raw materials & their commercially available size. 3.8 Name various type of raw materials used such as Timber: - logs, planks, battens etc. Ply, Teak ply, block board, sun mica, Formica etc. 3.9 Carpentry tools: - Know various carpentry tools with their specifications and uses e.g. Different saws, chisels, gauges, scales, hammers, tri squares planners, vice etc.</p> <p>3.10 Carpentry Joints:- Introduction of various joints like T, corner, mortise & tennon joints, dovetail, pin, cross half lap joint, etc.</p> <p>3.11 Choose correct shape & size of timber blank for a given job drawing.</p> <p>3.12 Do marking as per drawing using correct method, tools & sequence. 3.13 Identify correct operations e.g. sawing, chiseling, planing, grooving etc. 3.14 Select appropriate Tool, inspection & measuring Instruments. 3.15 Clamping the jobs in correct position in an appropriate clamping device. 3.16 Perform the operation with appropriate body posture, method & precision, exercising personal judgment of need of the force. 3.17 Inspect for size & quality of finish as and when necessary. 3.18 Assemble the components produced. Inspect for proper joint quality & take remedial steps.</p>
<p>4.</p>	<p>BLACK SMITHY SHOP:-</p> <p>4.1 Understand the function of black smithy & forging shop. 4.2 Layout of Shop. 4.3 Sketch & Label Details of shop lay out. 4.4 Know the different jobs produced in smithy shop e.g. round to hexagonal shapes or vice versa J-hook, S-hook, circle, chain etc. 4.5 Commonly used raw materials: - M.S. Bars of different shapes and size. 4.6 Smithy Tools: - Know various smithy tools with their specifications e.g. different type of hammers, hot / cold chisel, flatters, tongs, leg vice, swage block, anvils, open hearth and furnaces etc. 4.7 Preparation of job (any three) J-hook, S-hook, chain, circle, tong, chisel etc. 4.8 Safety measures: - Know the safety regulation in black smithy shop.</p>

5.	<p>SHEET METAL SHOP: -</p> <p>5.1 Layout of Shop</p> <p>5.2 Sketch & Label Details of shop lay out.</p> <p>5.3 Know the different jobs produced in sheet metal shop e.g. Open tray, cylinder, prism, Funnel etc.</p> <p>5.4 Commonly used raw materials: -M.S. sheet (black), G.I., M.S.rivets, and aluminum rivet etc.</p> <p>5.5 Understand foil, sheet and plate.</p> <p>5.6 Tools used:-</p> <p>5.7 Different snips, shears, stacks, latter punch, figure punch, Solid punch, hollow punch, mallet, soft hammers, channel, Square bars, std. Sheet gauge.</p> <p>5.8 Type of joints and operations: -</p> <p>5.9 Introduction of various sheet metal operations &joints e.g. seaming, single seam , double seam, Grooved seam, corner joint, cap joint etc.</p> <p>5.10 Preparation of job (any two): - Open tray, cylinder, prism, Funnel etc.</p> <p>5.11 Choose correct shape &size of sheet for a given job drawing considering allowances for joint or seam.</p> <p>5.12 Do marking as per drawing using correct method, tools and sequence.</p> <p>5.13 Identify correct operation e.g. shearing, punching, bending, debarring, folding, strengthening, stamping, riveting, etc.</p> <p>5.14 Select appropriate Tool , inspection & measuring Instruments.</p> <p>5.15 Holding the job in correct position.</p> <p>5.16 Perform the operation with appropriate body posture, method & precision, exercising personal judgment of need of the force.</p> <p>5.17 Inspect for proper joint quality and take remedial steps.</p>
6.	<p>WELDING SHOP: -</p> <p>Layout of Shop.</p> <p>6.1 Sketch & Label Details of shop lay out.</p> <p>6.2 Know the different jobs produced in Welding shop e.g. Lap joint, single butt, double butt, corner, T joint, etc.</p> <p>6.3 Tools & equipments used:-Specifications & use of various tools and equipments used in Welding shop e.g. . A.C. welding transformer, Gas welding set, electrode used, chipping hammer, wire brush, shield, gloves, apron etc.</p> <p>6.4 Preparation of job: - (any two) Lap joint, single butt, double butt, corner, T joint, etc.</p> <p>6.5 Safety measures:- Know the safety regulation in Welding shop.</p>
7.	<p>PLASTIC MOULDING:-</p> <p>Know the commonly used plastic materials i.e. Thermosetting, Thermo plastic.</p> <p>Sketch & label various parts of bench molding m/c.</p> <p>Production of any product on bench molding m/c.</p>
8.	<p>REVISION:-</p> <p>Understand the difference in theory and practice.</p> <p>Explain the importance of skills in production of quality jobs</p>

- NOTE:-1. Theoretical inputs will be provided on shop floor during workshop Practice.**
- 2. Shop safety would include First Aid training for each shop.**



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COMMON WITH PROGRAMME : **A03, C01, C02 C03,C05, E01, E03, M02, , P01,**
(BRANCH) **P03, P04, R01, T02.**
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LECTURE HRS. PER SEMESTER : **PR. 60**

S.No.	REFERENCE BOOKS	
1.	Production technology vol. I	R.C. Patel &C.G. Gupta
2.	Production technology vol. I	Dalela
3.	Work shop technology vol. I	Raghuwanshi
4.	Work shop technology vol. I	Chapman
5.	Workshop Vol. I	P.N.Vijayvargiya (Hindi medium)

MEMBERS PARTICIPATED IN CURRICULUM REVISION

1. Arun kumar Nagrani W/S supdt. S.V.Poly.Indore
2. Punit kumar Uppal A.W/S supdt. Indore W.Poly.Indore
3. Arun kumar Chaturvedi A.W/S supdt. Govt.Poly.Sanawad
4. Santosh Shekokar Lect. Prod. S.V.Poly.Indore
5. Amesh chandra Pure A.W/S supdt. S.V.Poly.Indore

