SHRI RAWATPURA SARKAR UNIVERSITY, RAIPUR CHHATTISGARH
FACULTY OF ENGINEERING & TECHNOLOGY

DIPLOMA IN ENGINEERING, FIRST SEMESTER SCHEME
(COMMON TO ALL BRANCHES) ACADEMIC SESSION (JUL-DEC 2022-23)

Outcomes Based Education (OBE) and Choice Based Credit System (CBCS)
(Effective from the academic year 2022-2023)

S.N	Course Code	Course Title	Hours / Week			Credits	Maximum Marks			ESE Duration (Hrs)
			L	**T**	**P**		Continuous Evaluation	End Sem Exam	Total	
1	DP101T	Communication Skills	3	-	-	3	30	70	100	3
2	DP101P	Communication Skills	-	-	2	1	15	30	50	-
3	DP102T	Applied Mathematics-I	2	1	-	3	30	70	100	3
4	DP103T	Applied Physics	2	1	-	3	30	70	100	3
5	DP103P	Applied Physics	-	-	2	1	15	35	50	-
6	DP104T	Basic of Electrical Engineering	2	1	-	3	30	70	100	3
7	DP104P	Basic of Electrical Engineering	-	-	2	1	15	35	50	-
8	DP105T	Engineering Graphics	1	-	-	1	30	70	100	3
9	DP105P	Engineering Graphics	-	-	2	1	15	35	50	-
10	DP106T	Environmental Studies	2	1	-	3	30	70	100	3
						20			800	

DIPLOMA IN ENGINEERING ((FIRST SEMESTER)

Course Title	**Communication Skills**					
Course Code	**DP101T**					
Course Credits	**L**	**T**	**P**	**Details**		
	0	**0**	**2**			
Prerequisites	**NIL**					
Course objectives	Upon completion of the course the student shall be able to: 1. Communicate effectively (Verbal and Non Verbal) 2. Develop the writing skills and communication skills.					
Course Contents	**UNIT-I** **Passage for Comprehension:** (1) Language of Science (2) Robotic Revolution (3) Designing a Car (4) New Wonders of camera (5) Non-conventional sources of Energy (6) Our Environment (7) Entrepreneurship (8) Safety practices (9) Unseen passage (10) Seen passage from books. **UNIT-II** **Applied Grammar:** (1) Determiners (2) Auxiliaries (3) Tenses (4) Conditional (5) Passive (6) Prepositions (7) Subject-verb Agreement (8) Clauses & Connectors (9) Basic Sentence (10) Paragraph Writing. **UNIT-III** **Letter Writing:** Introduction Purposes of Letters, Characteristics of a Letter, **Writing Skills:** (1) Application (For Job/Leave) (2) Letter of Enquiry and replies (3) Letter for Order Placement (4) Letter of Complaints (To Editor/ Appropriate Authorities) **UNIT-IV** **Report Writing:** Writing Progress – Report of a job, General outline for preparing a Project Report. **UNIT-V** **Short Stories:** (1) A letter to God (2) An astrologer day's (3) A selfish Giant					
Course outcomes	After completion of this course, students will be able to write a letter, communicate effectively and improve reading and writing the sentence.					

Text and References	**Name of the Text Books:** 1. Communication Skill for Teaching Students Book-I. M/s Somaiya Publications. Pvt. Ltd., Bhopal. 2. Living English Structure –W.S. Allen 3. Practical English Grammar (Exercises I by Thomson & Martinet) 4. English conversation practice by Grant Taylor. 5. Grammar & Composition by P R Sarkar, Anand Marg Publication, Easter, Matropolition Calcutta. 6. Essentials of English & Business Communication.by Rajendra Pal,J.S Korlahalli S.Chand & Sons, New Delhi.

DIPLOMA IN ENGINEERING ((FIRST SEMESTER)

Course Title	**Communication Skills**				
Course Code	**DP101P**				
Course Credits	**L**	**T**	**P**	**Details**	
	0	**0**	**2**	**2**	
Prerequisites	**NIL**				
Course objectives	Objective is to make students realize the significance of communication skill • To enhance the ability to communicate through good interpersonal communication in an interview • To develop enthusiastic delivery style • To develop skills are comprised of effective eye contact, volume, pacing, tone, body language, word choice, and appearance • To learn techniques that can make an effective participant in GD.				
Course Contents	**LIST OF PRACTICALS** 1. Listening Skills • The student should be able to listen to s text read aloud in normal speed with focus on intonation. • After listening the student can fill-in-blanks, choose a suitable title, make a summary, supply required information and be able to answer comprehension questions from the passage read aloud. 2. Speaking Skill • Reading aloud of dialogues, texts, poems, speeches focusing on intonation. • Self-introduction				

	• Role plays on any two-situations. • Telephonic Conversations. 3. Personality Development • Initiation • Physical Appearance • Audience Purpose 4. Interpersonal Skills • Appropriate use of non-verbal skills in face-to-face communication [i.e., Viva –Voce, group –interviews, GDs and seminars.] 5. Presenting in GD, Seminars and Conferences. • Leadership Quality • Time Management • Achieving the target
Course outcomes	Role playing games, exercises and activities can enhance business projects, giving specific business outputs and organizational benefits. • It uses scripts that you read with your partner, like actors in a movie. • It gives you information about your role. You can then talk with your partner using this information. • It helps you speak English in full sentences. • It makes you think about what you are saying, so you remember the language. It gives you many things to think and talk about.
Text and References	**Name of the Text Books:** 1. Communication Skill for Teaching Students Book-I. M/s Somaiya Publications. Pvt. Ltd., Bhopal. 2. Living English Structure –W.S. Allen 3. Practical English Grammar (Exercises I by Thomson & Martinet) 4. English conversation practice by Grant Taylor. 5. Grammar & Composition by P R Sarkar, Anand Marg Publication, Easter, Matropolition Calcutta. 6. Essentials of English & Business Communication.by Rajendra Pal,J.S Korlahalli S.Chand & Sons, New Delhi.

DIPLOMA IN ENGINEERING ((FIRST SEMESTER)

<table>
<tr><td>Course Title</td><td colspan="5">Applied Mathematics-I</td></tr>
<tr><td>Course Code</td><td colspan="5">DP102T</td></tr>
<tr><td rowspan="2">Course Credits</td><td>L</td><td>T</td><td>P</td><td>Details</td><td></td></tr>
<tr><td>2</td><td>1</td><td>0</td><td>3</td><td></td></tr>
<tr><td>Prerequisites</td><td colspan="5">NIL</td></tr>
<tr><td>Course objectives</td><td colspan="5">Upon completion of the course the student shall be able to:
1. Acquire a basic body of mathematical knowledge that will provide the student with a strong foundation for further study and/or for a career in mathematics or in other technical or scientific fields.
2. Develop fundamental mathematical skills and the ability for independent mathematical learning and reasoning.
Become aware of the applications of mathematics across science and technology, and to learn how to use mathematical ideas and techniques to solve real life problems.</td></tr>
<tr><td>Course Contents</td><td colspan="5">UNIT-I
Algebra: Concept and principles of determents. Properties of determents Computation of Mean and R.M.S. Value General equation of second degree, Nature of roots, Formation of Equation Class- I, II, III, IV.
Trigonometry: Half angles, Double Angles, Triple angles General solution of Trigonometrically equation.

UNIT-II
Geometry: Coordinate Geometry Cartesian and Polar coordinates distance between two points, Division of a line Segment. Locus standard forms. General equation of a straight line and its rotation to the structural forms, Straight line through one- and two-point Transformation of coordinates when the origin is shifted or the axes are rotated.
Conic Section: Definition, Standard forms, General equation, Center and radius. Parabola Ellipse.

UNIT-III
Differential Calculus: Independent and dependent variables, different type of functions, Concept of limit and its Valuation.
Method of Differentiation: Differentiation by first principle of Algebra, Trigonometrical, Exponential and Logarithmic functions. Differentiation of sum, Product and quotient of two</td></tr>
</table>

	functions and functions of a function. **UNIT-IV** **Vector Algebra:** Concept of Vector and Scalar Quantities Understand the Principle of addition, subtraction of vector component of Vector, Standard unit Vectors. **Multiplication of Vector:** Scalar product and its applications, Vector products and application. **UNIT-V** **Statistics:** Introduction, Graphical representation, Histogram, France polygon, Frequency, Curve, Central Tendency Mean, Median, Mode. **Dispersions & Deviation:** Measure of dispersion Range Quartile deviation Standard, Deviation Rood Mean square deviation.
Course outcomes	After completion of this course, students will be able to apply mathematics for understanding the problems scientifically and computationally.
Text and References	**Name of the Text Books:** 1. Mathematics for polytechnic, S. P. Deshpande Pune Vidyarthi Griha 2. Mathematics for Polytechnic Volume I, TTTI Publication 3. Applied Mathematics, EEB Publication, Bhopal 4. Trigonometry S. L. Loney S., Chand Publication 5. College Algebra Frc.G. Valles Charotar Publication 6. Matrices Ayres Schuam series, McGraw hill

DIPLOMA IN ENGINEERING ((FIRST SEMESTER)

<table>
<tr><td>Course Title</td><td colspan="5">Applied Physics</td></tr>
<tr><td>Course Code</td><td colspan="5">DP103T</td></tr>
<tr><td rowspan="2">Course Credits</td><td>L</td><td>T</td><td>P</td><td>Details</td><td></td></tr>
<tr><td>2</td><td>1</td><td></td><td>3</td><td></td></tr>
<tr><td>Prerequisites</td><td colspan="5">NIL</td></tr>
<tr><td>Course objectives</td><td colspan="5">Upon completion of the course the student shall be able to:
1. Provide students with scientific knowledge needed to begin their careers or to enter graduate school.
2. Students will demonstrate analytical and problem-solving skills at the introductory level, as evidenced in elementary mechanics and optics and nuclear physics.</td></tr>
<tr><td>Course Contents</td><td colspan="5">UNIT-I
Units and Measurements:
Fundamental units, Derived units, unit system, S.I. units – Their impotence & notation, Base, S.I. units’ system & Abbreviations, Principle of vernier calipers, screw gauge & Speedometer. Definition of accuracy, precision and error, estimation of errors -absolute error, relative error and percentage error, rules and identification of significant figures. (Numerical on percentage error and significant figures).

UNIT-II
Force, Motion & Gravitation:
Equations of motion, Newton’s law of motion, Force & its derivation from Newton’s laws of motion, Composition and resolution of forces, Parabolic Motion, Horizontal projection and projection at an angle, time of flight, Horizontal range and maximum horizontal range, Simple Problems, Centripetal acceleration, centripetal and centrifugal forces, Concept of friction and its application. Application to banking of roads, Newton’s law of Gravitation, Basic forces in nature, Gravitational field, Potential, Relation between “g” & “G”, factors influencing “g” escape velocity, kepler’s Laws of planetary motion, satellites, Time period of satellites, simple pendulum.
UNIT-III
Elasticity, Surface Tension & Viscosity:
Concept of elasticity, Deformation, Stress, Strain- its kinds and units, Hooke’s law, elastic unit, elastic fatigue, Modulii of elasticity’s, Young’s Modulus and its determination by Snarl’s method. Molecular forces, cohesive and adhesive forces, surface tension & surface energy, Reason for spherical shape of Rain Drops, Angle of contact, pressure difference a liquid surface excess pressure inside a liquid drop &soap bubble, shape of liquid surface in a capillary tube, Rise of liquids in a capillary tube, Determination of surface tension by capillary rise method. „Effect</td></tr>
</table>

	of temperature on surface tension, examples of surface tension. Concept of viscosity & coefficient of viscosity, streamline and turbulent flow. **UNIT-IV** **Light, Laser and Sound:** **Applications of Light**- Refraction and refractive index. Defects in image formation (Qualitative), Simple and compound microscope, astronomical and Galileo telescopes and their magnifying powers. **Laser -** Properties of laser, spontaneous and stimulated emission, population inversion, optical Pumping, construction and working of He-Ne laser. **Applications of Sound –Ultrasonic:** Production of ultrasonic waves by using magnetostriction and piezo – electric methods. Applications to drilling cold welding, cleaning, flaw detection and exploration. **Acoustics**-Reflection, refraction and absorption of sound waves by surfaces. Echo and reverberation. **UNIT-V** **Modern Physics:** **Photo electricity**- Concept of photon**,** Plank's hypothesis, properties of photon, photo electric effect, Characteristics of photoelectric effect, work function, Einstein's photoelectric equation (no derivation), photoelectric cell-construction, working and applications. **X-rays -** Introduction to x-rays, types of x-ray spectra-continuous and characteristics, production of x-rays using Coolidge tube, minimum wavelength of x-rays, properties of x-rays, engineering, medical and scientific applications.
Course outcomes	After completion of this course, students will be able to learn physics behind nature and develop some new scientific theories of nature.
Text and References	**Name of the Text Books:** 1. Applied Physics Vol. I&II H.C. Saxena & Prabhakar Singh 2. Applied Physics Vol. I&II D.Halliday & R.Rasnick 3. Engineering Physics – BVN Rao 4. Principles of Physics – K.K. Mohindroo 5. Basic Principles of Physics – Brij Lal Subramanyam. 6. Physics-I V. Rajendran, Tata McGraw- Hill raw- Hill publication, New Delhi 7. Applied physics Arthur Beiser, Tata McGraw- Hill raw- Hill Publication, New Delhi Engineering Physics by R.K.Gaur and S.L.Gupta, Dhanpat Rai Publication, New Delhi.

DIPLOMA IN ENGINEERING ((FIRST SEMESTER)

Course Title	**Applied Physics**				
Course Code	**DP103P**				
Course Credits	**L**	**T**	**P**	**Details**	
	0	**0**	**2**	**2**	
Prerequisites	**NIL**				
Course objectives	The ability to work effectively and safely in a laboratory Physics.				

Course Contents

LIST OF EXPERIMENTS

1. To use Vernier Caliper for the measurement of dimensions of given object.
2. To use Micrometer Screw Gauge for the measurement of dimensions (Length, Thickness, Diameter) of given object.
3. To verify Hooke's Law by Searle's method and to calculate Young's modulus of elasticity of steel wire.
4. To determine the value of "g" using simple pendulum.
5. To determine Young's modulus of elasticity of the material of given wire using Searl"s apparatus.
6. To determine surface tension of water by capillary rise method.
7. To determine coefficient of viscosity of given fluid (Glycerin) using Stoke's Method.
8. To determine coefficient of viscosity of a fluid by Poisioullo"s method.
9. To determine refractive index of the material of prism using graph.
10. To determine focal length of concave mirror & convex lens.
11. To determine focal length of combination of two lenses.
12. To determine mechanical equivalent of heat by using Joule's colorimeter.
13. To determine the velocity of sound by using resonance tube.
14. To verify characteristics of photoelectric cell.
15. Use of Thermocouple as a thermometer for the measurement of unknown temperature (Boiling Point of Water).

Course outcomes	After completion of this course, students will be able to establish the methodology to measure the things of nature and understand the theoretical concept in practical way.
Text and References	**Name of the Text Books:** 8. Applied Physics Vol. I&II H.C. Saxena & Prabhakar Singh 9. Applied Physics Vol. I&II D.Halliday & R.Rasnick 10. Engineering Physics – BVN Rao 11. Principles of Physics – K.K. Mohindroo 12. Basic Principles of Physics – Brij Lal Subramanyam. 13. Physics-I V. Rajendran, Tata McGraw- Hill raw- Hill publication, New Delhi 14. Applied physics Arthur Beiser, Tata McGraw- Hill raw- Hill Publication, New Delhi 15. Engineering Physics by R.K.Gaur and S.L.Gupta, Dhanpat Rai Publication, New Delhi.

DIPLOMA IN ENGINEERING ((FIRST SEMESTER)

Course Title	**Basic of Electrical Engineering**				
Course Code	**DP104T**				
Course Credits	**L**	**T**	**P**	**Details**	
	2	**1**		**3**	
Prerequisites	**NIL**				
Course objectives	1. Understand the basic concepts of DC and AC circuits. 2. Analyze the series, parallel and series, parallel ac circuits. 3. Acquire knowledge about working principle, construction and losses of a transformer.				
Course Contents	**UNIT-I** **D.C. Networks** Introduction, Ohm's law, Kirchhoff's laws, Mesh and Nodal analysis, Superposition theorem, (only independent sources). Definitions of MMF, Magnetic field strength, Reluctance, Leakage flux and fringing, Core losses. **Unit – II** **A.C. Circuits** Production of AC voltage, Basic Definitions of root mean square and average values, form factor and peak factor, the j operator and Phasor Algebra, Analysis of ac series and Parallel Circuits, Series- Parallel Circuits.				

	Unit – III **Single phase Transformers** Introduction, Principles of operation, Constructional details, Ideal Transformer and Practical Transformer, EMF equation, Rating, Phasor diagram at no load, Losses in Transformers. **Unit-IV** **Electrical Measuring Instruments** Introduction, classification of instruments – Indicating, Recording and Integrating type instruments; essential features of measuring instruments - deflecting torque, controlling torque, damping torque; Construction and working of moving iron and PMMC instruments, **Unit-V** **Diode and Transistor** Brief Review of Semiconductors, N-Type & P-Type Semiconductors, Formation of Depletion Layer in a PN Junction, Forward & Reverse Biased, V-I Characteristic, BJT Construction, Junction Biasing of BJT, Operation of NPN & PNP BJT.
Course outcomes	1. Apply the knowledge of basic laws to electric and magnetic circuits. 2. Distinguish between various types of representation of ac quantities. 3. Draw the phasor diagrams of an ideal and a practical transformer at no load.
Text and References	1. Fundamentals of Electrical Engineering & Electronics, B.L. Theraja,S. Chand Publication. 2. Principles of Electronics by V. K. Mehta, 3 rd Edition, S. Chand and Co.Ltd.(Unit-IV & V) 3. D.P. Kothari and I.J. Nagrath, “Theory and Problems of Basic Electrical Engineering”, PHI.

DIPLOMA IN ENGINEERING ((FIRST SEMESTER)

Course Title	**Basic of Electrical Engineering**				
Course Code	**DP104P**				
Course Credits	**L**	**T**	**P**	**Details**	
	0	**0**	**2**	**2**	
Prerequisites	**NIL**				
Course objectives	1. Verify the basic laws and theorems of DC circuits. 2. Analysis the RLC series, parallel and series, parallel ac circuits. 3. Understand the construction and perform ratio test on a single-phase transformer. 4. To plot and find out the characteristics of a diode in forward and reverse bias				
Course Contents	**1. LIST OF EXPERIMENTS** 2. To verify Superposition theorem. 3. To verify Kirchhoff's Current Law and Kirchhoff's Voltage Law. 4. To determine V– I characteristics of Incandescent lamp. 5. To study B-H curve. 6. To measure current, power, voltage and power factor of series RLC circuit. 7. To measure current, power, voltage of parallel RLC circuit. 8. To measure current, power, voltage of series parallel RLC circuit. 9. To measure R and L of choke coil. 10. To study construction of a single-phase transformer. 11. To study construction of Single Phase A.C. machines. 12. To study construction of Three Phases Induction motors. 13. To study charging and discharging of a capacitor. 14. To study construction of D.C. machine. 15. To study the operation of transistor as a switch. 16. 15. To study the operation of transistor as an amplifier.				
Course outcomes	17. Relate the Basic laws and theorems with the practical applications. 18. Apply the knowledge in their daily life with electrical circuits. 19. Visualize the magnetic and electric circuits in a transformer. 20. Analyze diode circuits and to design and implement diode applications.				
Text and References	**Name of the Text Books:** 1. Basic Electrical & Electronics Engineering 1stEdition by D. P. Kothari and I. J. Nagrath, 2. Electronics Devices and Circuits by Jacob Millman and Christos C. Halkias, 3rd Edition Mc. Grah Hill Pub.				

DIPLOMA IN ENGINEERING ((FIRST SEMESTER)

Course Title	**Engineering Graphics**					
Course Code	**DP105T**					
Course Credits	**L**	**T**	**P**	**Details**		
	1	**0**	**0**	**1**		
Prerequisites	**NIL**					
Course objectives	1. To provide basic concepts in engineering drawing. 2. To impart knowledge about standard principles of orthographic projection of objects. 3. To draw sectional views and pictorial views of solids.					
Course Contents	UNIT – I Importance of Engineering Drawing, Significance, Introduction to drawing equipment. Introduction and dimensioning techniques, Unit Conversion, Lines and types of line, Lettering and types of lettering. UNIT – II Scales: Introduction, Importance of scale in engineering drawing, Representative Fraction, Type of Scale on the basis RF, Different types of scale, Practice problem for Plain and Diagonal Scale. UNIT – III CAD: Introduction of CAD and list of CAD software, Advantages and Limitation of CAD, Application of CAD, Implementation of CAD system. GUI: Introduction of GUI, Advantages and limitations, Applications of GUI. UNIT – IV Coordinate System: Basic co-ordinate system, Absolute coordinate system, Polar Coordinate system and incremental coordinate system. Setting of status bar option-snap, grid, O-snap, Dynamic input, ortho, polar, and etc. UNIT – V Drawing Tools: Circle, Arcs, Rectangle, Polygon, Ellipse, Spline, Poly-Line, and Multi-Line. Editing Tools: Trim, Move, and Copy, Rotate. Geometry					

	Modifying Tools: Fillet, Chamfer, Scale, Stretch. Copying Tools: Array, Mirror, and Offset. Types of three-dimensional model, basic primitives' tools: extrude, revolve, sweep, loft, wedge.
Course outcomes	1. Ability to prepare working drawings to communicate the ideas and information. 2. Ability to read, understand and interpret engineering drawings
Text and References	**Name of the Text Books:** 1. I.S. 696. (Latest revision) - BIS, India 2. Engineering Drawing - N.D. Bhatt, Charoter Publisher,Anand 3. Engineering Drawing & Machine Drawing - R. K. Dhawan, Kumar 4. Engineering Drawing - R.B. Gupta, Satya Prakashan, Delhi 5. Geometrical Drawing - P.S. Gill , ketson & Sons 6. Machine Drawing - By P.S. Gill, ketson & Sons 7. Engineering Drawing - Gujral & Shende, Khanna Pub. N.Delhi 8. Work Book in Mechanical Drafting - TTTI, Bhopal Engineering Drawing & Graphics Using AutoCAD 2000 - T. Jeyapoovan, Vikas Publishing House Pvt. Ltd, New Delhi.

DIPLOMA IN ENGINEERING ((FIRST SEMESTER)

<table>
<tr><td>Course Title</td><td colspan="5">Engineering Graphics</td></tr>
<tr><td>Course Code</td><td colspan="5">DP105P</td></tr>
<tr><td rowspan="2">Course Credits</td><td>L</td><td>T</td><td>P</td><td>Details</td><td></td></tr>
<tr><td>0</td><td>0</td><td>2</td><td>2</td><td></td></tr>
<tr><td>Prerequisites</td><td colspan="5">NIL</td></tr>
<tr><td>Course objectives</td><td colspan="5">To provide basic concepts in engineering drawing</td></tr>
<tr><td>Course Contents</td><td colspan="5">LIST OF PRACTICALS

1. Study of any drafting software.
2. Study of GUI and Editing tools.
3. Study of co-ordinates systems.
4. Study and create drawing by using Drawing tools.
5. Study and create drawing by using Geometry modifying tools.
6. Study and create drawing by using copying tools like array, mirror, block and offset.
7. Study and detailing of drawing by using dimensioning and annotations tools.
8. Study and create drawing with different types of line by using Layer command.
9. Study and create drawing by using Geometry modifying tools: fillet, chamfer, scale, stretch
10. Create geometry by modify it by using Scales.</td></tr>
<tr><td>Course outcomes</td><td colspan="5">After completion of this course, students will be able to set the methods by technical and methodological ways.</td></tr>
<tr><td>Text and References</td><td colspan="5">Name of the Text Books:
Name of the Text Books:
• Engineering Graphics – Laxminarayanan& V. and VaishWanar, R.S. Jain Brothers, NewDelhi
• Engineering Graphics – Chandra, AM & Chandra Satish1998.
• Engineering Graphics – K.L. Narayan and P. Kannaih, Tata McGrawHill
• A Text book of Engineering Drawing (Plane & Solid Geometry) – N.D. Bhatt & V.M. Panchal, Charotar PublishingHouse.
The Fundamental of Engineering drawing and Graphics Technology – French and Vireck,</td></tr>
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DIPLOMA IN ENGINEERING ((FIRST SEMESTER)

Course Title	**Environmental Studies**				
Course Code	**DP106T**				
Course Credits	**L**	**T**	**P**	**Details**	
	2	**1**	**0**	**3**	
Prerequisites	**NIL**				
Course objectives	1. Create the awareness about environmental problems among learners 2. Impart basic knowledge about the environment and its allied problems. 3. Develop an attitude of concern for the environment. 4. Motivate learner to participate in environment protection and environment improvement. Acquire skills to help the concerned individuals in identifying and solving environmental problems. Strive to attain harmony with nature.				
Course Contents	**UNIT-I** **Introduction and Global Warming:** Definition, Scope & Importance, Need for Public Awareness- Environment definition, Eco system – Balanced ecosystem, Human activities – Food, Shelter, Economic and social Security. The Environment, the impact of human being upon the environment, the impact the Environment upon human beings, Improvement of Environment quality, the role of the Environmental engineer. Global warming – reasons. **UNIT-II** **Environmental Pollution:** Environmental pollution and their effects. Water pollution, Land pollution. Noise pollution, public health aspects, air pollution, solid waste management. Current environmental issues of importance: population growth, climate change and automobile pollution. Acid rain. **UNIT-III** **Environmental Pollution Control:** Atmospheric cleansing processes, Approaches to contaminant control. Central devices for particulate contaminants Gravitational settling chambers, centrifugal collectors, wet collectors, Fabric filters (Baghouse filters) Electrostatic precipitators (ESP) control devices for gaseous contaminants-absorption, condensation, combustion, Automotive emission control. Noise measurement, the problem of noise pollution and legal measures for its control.				

	UNIT-IV **Industrial Wastes:** Industrial Waste treatment – Economics of waste treatment benefits of pollution abatement (primary, secondary and intangible benefits), difficulties in achieving, pollution abetment through industrial waste treatment, theories of waste treatment of specific – industrial waste such as textile, dairy paper and pulp, and distillery waste. **UNIT-V** **Environmental Protection:** Environmental Protection- Role of Government, Legal aspects, Initiatives by Non-governmental Organizations (NGO), Environmental Education, Women Education.
Course outcomes	After completion of this course, students will be able to establish a new correlation among scientific rules, natural principles and its applications for set a path to study the environment.
Text and References	**Name of the Text Books:** 1. Air pollution by Perkins. 2. Liquid waste of industry, theories, practices and treatment by Nelson L. Vamerow. 3. Management of solid waste in developing countries by Flint off. 4. Environmental Engineering (International edition) by Peavy, Howards. (Mc Graw H Series in Environmental engineering) 5. Air Pollution – It's origin and control by keneth work and Warmer. (W.H.O. Publication) industrial waste by Namit. 6. Environment protection-Problems, Policies administration, Law edited by Paras Diwan Deep & Deep Publications