

FACULTY OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Diploma Computer Science and Engineering [Academic Session 2025-26 onwards]

*Proposed Course Structure aligned with
NEP-2020*



UNITED
UNIVERSITY

PRAYAGRAJ

[Established under the U.P.Private Universities Act. No. 12 of 2019]

FACULTY OF ENGINEERING & TECHNOLOGY

Department of Computer Science and Engineering

Diploma Computer Science & Engineering 3 Year (6 Semester) Programme

Program Outcomes

PO1: Technical Proficiency and Specialization

Demonstrate a strong command of fundamental mathematics, science, and engineering principles, coupled with specialized knowledge in their chosen engineering discipline. Apply this knowledge adeptly to analyze and solve a diverse range of engineering problems effectively.

PO2: Engineering Problem Analysis and Solution

Proficiently identify, dissect, and analyze well-defined engineering problems utilizing established and standardized methodologies. Demonstrate the ability to develop innovative and efficient solutions to address these challenges.

PO3: Creative Design and Systems Development

Exhibit creativity and ingenuity in designing solutions for technically complex problems. Collaborate in the development of system components or processes that precisely cater to specified needs, ensuring functionality, reliability, and safety.

PO4: Application of Modern Engineering Tools and Experimentation

Utilize state-of-the-art engineering tools and advanced techniques to conduct comprehensive tests and measurements. Skillfully apply data analysis and experimentation to validate and refine engineering solutions.

PO5: Engineering for Society, Sustainability, and Ethics

Integrate a comprehensive understanding of societal, environmental, and ethical considerations into engineering practices. Employ appropriate technologies and adhere to ethical principles, fostering sustainability and contributing positively to society.

PO6: Effective Project Management and Communication

Demonstrate proficiency in project management principles, whether as an individual contributor, a collaborative team member, or a capable leader. Effectively communicate and coordinate well-defined engineering activities, ensuring project success and meeting stakeholder expectations.

PO7: Lifelong Learning and Adaptability

Exhibit an unwavering commitment to continuous learning and self-improvement in the face of ever-evolving technological advancements. Analyze personal development needs and proactively engage in upskilling to stay current and relevant in an ever-changing engineering landscape.

Program Specific Outcomes

PSO 1: Proficient Application of State-of-the-Art Technologies

Demonstrate the ability to effectively utilize cutting-edge technologies in the operation and application of computer software and hardware. This includes staying abreast of the latest advancements and incorporating them into practical solutions to address real-world challenges.

PSO 2: Expertise in Computer Engineering Systems Maintenance

Develop and apply expertise in maintaining and managing computer engineering-related software and hardware systems. This entails implementing regular updates, troubleshooting technical issues, and ensuring the optimal performance and reliability of the systems.

FACULTY OF ENGINEERING & TECHNOLOGY

Department of Computer Science and Engineering

Diploma Computer Science & Engineering 3 Year (6 Semester) Programme

United University, Prayagraj

COURSE STRUCTURE

Sr. No.	Course Code	Course Title	Category	Teaching			Credit
				L	T	P	
Semester- I							
1	ETDCAS101T	Mathematics-I	BS	3	1	-	4
2	ETDCAS112T	Applied Physics -I	BS	2	1	-	3
3	ETDCEE101T	Basic Electrical and Electronics Engineering	ES	3	1	-	4
4	ETDCCS111T	Fundamentals of Computers, Information Technology and Office Automation Tool	ES	2	-	-	2
5	ETDCAS111T	Emerging Technology for Engineering	ES	2	-	-	2
6	PTSPDET13T	Professional Proficiency	HS	1	-	2	2
7	ETDCAS112P	Applied Physics Lab -I	BS	-	-	2	1
8	ETDCEE101P	Basic Electrical and Electronics Engineering Lab	ES	-	-	2	1
9	ETDCCS111P	Fundamentals of Computers, Information Technology and Office Automation Tool Lab	ES	-	-	4	2
10	ETDCME113P	Engineering Graphics	ES	-	-	2	1
11	UUSCVA001P	Yoga/NSS/Music/Sports	HS	-	-	2	0
Total				13	3	14	22

COURSE CODE & NAME: ETDCAS101T/ Mathematics-I**COURSE OUTCOMES**

1. Apply Binomial theorem to solve engineering problems
2. Apply determinants properties and Cramer's rule to solve engineering problems
3. Apply dot & cross product of vectors to find the solution of engineering problems
4. Use complex numbers in various engineering problems
5. Apply differential calculus and higher order to solve engineering problems
6. Find velocity, acceleration, errors and approximation in engineering problems with application of derivatives.

UNIT I:

Algebra-I: Series : AP and GP; Sum, nth term, Mean, Binomial theorem for positive, negative and fractional index (without proof). Application of Binomial theorem. Determinants Elementary properties of determinant of order 2 and 3, Multiplication system of algebraic equation, Consistency of equation, Cramer's rule.

UNIT II:

Algebra-II: Vector algebra: Dot and Cross product, Scalar and vector triple product. Complex number. Complex numbers, Representation, Modulus and amplitude Demoivre theorem, its application in solving algebraic equations, Mod function and its prope .

UNIT III:

Trigonometry: Relation between sides and angles of a triangle: Statement of various formulae showing relationship between sides and angle of a triangle.

UNIT IV:

Differential Calculus-I: Functions, limits, continuity, functions and their graphs, range and domain, elementary methods of finding limits (right and left), elementary test for continuity and differentiability .

UNIT V:

Differential Calculus-II: Methods of finding derivatives, Trigonometric functions, exponential function, Function of a function, Logarithmic differentiation, Differentiation of inverse trigometric function, Differentiation of implicit functions, Higher order derivatives, Leibnitz theorem (without proof).

TEXTBOOKS

1. Elementary Engineering Mathematics by BS Grewal, Khanna Publishers, New Delhi
2. Engineering Mathematics, Vol I & II by SS Sastry, Prentice Hall of India Pvt Ltd ,

REFERENCE BOOKS

1. Applied Mathematics-I by Chauhan and Chauhan, Krishna Publications, Meerut
2. Applied Mathematics-I (A) by Kailash Sinha and Varun Kumar; Aarti Publication, Meerut

DRAFT

COURSE CODE & NAME: ETDCAS112T/ Applied Physics -I**COURSE OUTCOMES**

1. Identify the use of S I .system of measurement with accuracy and applications of dimensional analysis.
2. Represent physical quantities as scalars and vectors, applying the physical laws and concepts of linear and circular motion in everyday life.
3. Analyze and design banking of roads/railway tracks and apply conservation of momentum principle to Explain rocket propulsion, recoil of gun etc.
4. Derive work, power and energy relationship and solve problems about work and power .
5. Define work, energy and power and their units .
6. Describe conservation of energy and its applications
7. Understand the concept of rotational motion of a rigid body and its applications
8. Describe the concept of Coulomb's law of Electrostatics, Electric field and Electric potential .
9. Define Capacitance and its units, explain the function of capacitors in simple circuits, and solve simple problems.
10. Explain the concept of electric current, series and parallel combination of resistances, Kirchhoff's law and its application to solve simple electrical circuits. .
11. Understand the concept of elasticity, surface tension, pressure and the laws governing movement of fluids.
12. Distinguish between conduction, convection and radiation, identify the different methods for reducing heat losses
13. Understand the laws of thermodynamics, Carnot cycle and their applications .

UNIT I:

Units and Dimensions : Need of measurement in engineering and science, unit of physical quantities, fundamental and derived units, systems of units (FPS, CGS and SI units). Dimension and dimensional formulae of physical quantities, Principle of homogeneity of dimensions Dimensional equations and their applications, conversion of numerical values of physical quantities from one system of units into another, checking the correctness of physical equations and deriving relations among various physical quantities. Limitations of dimensional analysis .

Force and Motion : Scalar and vector quantities –examples, representation of vector, types of vectors, Addition and Subtraction of Vectors, Triangle and Parallelogram law(Statement only), Scalar and Vector Product, Resolution of Vectors. Force, Momentum, Statement and Derivation of Conservation of linear momentum. Circular motion (Uniform and Non-uniform), definition of angular displacement, angular velocity, angular acceleration, frequency, time period. Relation between linear and angular velocity, linear acceleration and angular acceleration (related numerical), Expression and Applications of Centripetal and Centrifugal forces. Principle of centrifugation.

UNIT II:

Work, Power and Energy: Work and its units, examples of zero work, positive work and negative work, conservative and non-conservative force, Friction: modern concept, types, laws of limiting friction, Coefficient of friction and its Engineering Applications, Work done in moving an object on horizontal and inclined plane for rough and plane surfaces with its applications Energy and its units: Kinetic energy and potential energy with examples and their derivation, work energy theorem. Principle of conservation of mechanical energy for freely falling bodies, examples of transformation of energy. Power and its units, calculation of power in numerical problems.

UNIT III:

Electrostatics and Current Electricity: Coulomb's Law, Electric field, Electric field due to a point charge, Electric lines of forces and Electric Flux. Electric potential, Electric potential due to a point charge, Potential, Capacitor, Energy of a charged capacitor, Effect of dielectric on capacitors. Electric current and its units, Direct and alternating current, Resistance and its units, Specific resistance, Conductance, Series and parallel combination of resistances, Factors affecting resistance of a wire, Ohm's Law and its applications, Kirchhoff's Laws, Wheatstone bridge and its applications, problem solving.

UNIT IV:

Properties of Matter: Stress and Strain, Elastic limit and Hook's law, Young's Modulus, Bulk Modulus and Modulus of Rigidity, Poisson's Ratio. Surface Tension and Surface energy, Cohesive and Adhesive Force, Angle of Contact, Capillarity and Expression for Surface Tension, Streamline and Turbulent Flow, Reynold Number, Viscosity and Coefficient of Viscosity, Stoke's law and Terminal velocity.

UNIT V:

Heat and Thermodynamics: Modes of heat transfer (Conduction, Convection and Radiation), Coefficient of thermal conductivity, Isothermal and adiabatic process. Zeroth, First, Second law of Thermodynamics and Carnot Cycle, Heat Engine (concept only).

TEXTBOOKS

1. Text Book of Physics for Class XI and Class XII (Part-I, Part-II); N C E R T ,Delhi
2. Concepts in Physics by HC Verma, Vol. I &II, Bharti Bhawan Ltd. NewDelhi

REFERENCE BOOKS

1. Comprehensive Practical Physics, Vol, I & II, JN Jaiswal, Laxmi Publications (P) Ltd , NewDelhi
2. B.Sc. Practical Physics by C L Arora, S. ChandPublication .

DRAFT

COURSE CODE & NAME: ETDCEE101T / Basic Electrical and Electronics Engineering

COURSE OUTCOMES

1. Understand the meaning of basic electrical quantities such as voltage, current, power etc
2. Use working principle of transformer
3. Use basic Network Theorem and Kirchoff's laws
4. Understand the concept of Junction Diode, transistor and field effect transistor

UNIT I:

Application and Advantages of Electricity: Difference between ac and dc, various applications of electricity, advantages of electrical energy over other types of energy.

Basic Electrical Quantities: Definition of voltage, current, power and energy with their units, name of instruments used for measuring above quantities, connection of these instruments in an electric circuit.

UNIT II:

AC Fundamentals: Electromagnetic induction-Faraday's Laws, Lenz's Law; Fleming's rules, Principles of a.c. Circuits; Alternating emf, Definition of cycle, frequency, amplitude and time period. Instantaneous, average, r.m.s and maximum value of sinusoidal waveform factor and Peak Factor. Concept of phase and phase difference. Concept of resistance, inductance and capacitance in simple a.c. circuit. Power factor and improvement of power factor by use of capacitors. Concept of three phase system; star and delta connections; voltage and current relationship (no derivation).

UNIT III:

Transformers: Working, principle and construction of single phase transformer, transformer ratio, emf equation, losses and efficiency, cooling of transformers, isolation transformer, CVT, auto transformer (brief idea), applications.

UNIT IV:

D.C. Circuits: Ohm's law, resistivity, effect of temperature on resistance, heating effect of electric current, conversion of mechanical units into electrical units. Kirchoff's laws, application of Kirchoff's laws to solve, simple d.c. circuits Thevenin's theorem, maximum power transfer theorem, Norton's theorem and superposition theorem, simple numerical problems.

UNIT V:

Basic Electronics: Basic idea of semiconductors – P and N type; diodes, zener diodes and their applications, Introduction to BJT: NPN and PnP transistors, other symbols and mechanism of current flow, explanation of fundamental current relations. Comparison of CB, CE and CC configuration transistor as amplifier in CE configuration. Field Effect Transistor (FET): Construction, Operation and Characteristics of Junction FET, Comparison of SFET, MOSFET & CMOS.

TEXTBOOKS

1. Basic Electrical Engineering by PS Dhongal; Tata McGraw Hill Publishers, New Delhi
2. A Text Book of Electrical Technology, Vol I and II by BL Thareja; S Chand and Co , New Delhi
3. Basic Electricity by BR Sharma; Satya Prakashan, New Delhi

REFERENCE BOOKS

1. Basic Electrical Engineering by JB Gupta, S Kataria and Sons, Delhi
2. Experiments in Basic Electrical Engineering by SK Bhattacharya and KM Rastogi, New Age International Publishers Ltd , New Delhi

COURSE CODE & NAME: ETDCCS111T/ Fundamentals of Computers, Information Technology and Office Automation Tool**COURSE OUTCOMES**

1. Use technology ethically, safely, securely, and legally .
2. Identify and analyze computer hardware, software, and network components .
3. Design basic business web pages using current HTML/CSS coding standards .
4. Install, configure, and remove software and hardware .
5. Use systems development, word-processing, spreadsheet, and presentation software to solve basic information systems problems.

UNIT I:

Fundamentals of Computer : Historical evolution of computers, Generations of computers, Classification of computers - based on size, processor, Usefulness of Computers. Applications of computers, Block Diagram along its components and characteristics, Interaction between the CPU, Memory Input/output devices, function of CPU and major functional parts of CPU. Types of Memory- RAM ROM, Monitor, Mouse, Keyboard, Disk, joysticks, Storage Devices, floppy disk, CD, DVD, Pen drive, trackballs, Printers Types of printers, Scanner, Modem, Video, Sound cards, Speaker

UNIT II:

Data Representation: Definition Of Information, difference between data and information ,importance of Binary Number System, various number systems, Conversion from Decimal to Binary, Conversion from Binary to Decimal, binary number into hexadecimal number, hexadecimal number into binary number System, Memory Addressing and its Importance, ASCII and EBCDIC coding System

UNIT III:

DOS & Windows Operating Systems : Hardware and Software, Types of Software, Introduction and need of operating system, Types of operating system, dos operating system, Types of DOS Commands, operating system as a resource manager; BIOS, control panel, disk defragmentation installation and un installation of the application software.

UNIT IV:

Fundamentals of Internet: Concepts of computer Network, Client Server Model, Peer to Peer Model, Networking Devices : Switch, Router, Hub, Bridge, Gateway, LAN, MAN, WAN, Topology, Internet, Intranet, Extranet, internet service provider and its relevance, role of the modem in accessing the internet, purpose of web browser software, URL,URI, URN, WWW, Telnet, Email, process of sending and receiving e-mail, transmission modes, IP address and its format, MAC Address, DNS, search engines, social network sites, internet security.

TEXTBOOKS/ REFERENCE BOOKS

1. Fundamentals of Computer by E Balagurusamy, Tata McGraw Hill Education Pvt . Ltd, New Delhi.
2. Fundamentals of Computer by V Rajaraman; Prentice Hall of India Pvt. Ltd., New Delhi .
3. Computer Fundamentals by RS Salaria; Khanna Book Publishing Co. (P) Ltd., New Delhi .
4. Computers Today by SK Basandara, Galgotia publication PvtLtd. Daryaganj, New Delhi .

COURSE CODE & NAME: ETDCAS111T/ Emerging Technology for Engineering

COURSE OUTCOMES

1. Understand the fundamentals of AI.
2. Understand fundamentals of cloud computing.
3. Understand the fundamentals of IoT and its societal benefits.
4. Understand the basics of Robotics and its industrial applications.
5. Understand the future Trends in Engineering and Technology.

UNIT I:

Artificial Intelligence: Foundations, Scope, Problems, and Approaches of AI Introduction to AI, History of AI, Course Logistics, Roadmap, and Industry Applications of AI.

UNIT II:

Cloud Computing : Introduction and Evolution of computing paradigms, Brief history and Evolution. History of Cloud Computing, Evolution of Cloud Computing, Traditional vs. Cloud computing, Cloud Deployment models (Public, Private, Hybrid and Community Cloud), Benefits and challenges of Cloud Computing

UNIT III:

Internet of Things : The IoT today, IoT vision, Physical Design of IoT, Logical Design of IoT enabling technology devices. IoT devices vs. Computer, Societal Benefits of IoT, Risks, Privacy, and Security Application.

UNIT IV:

Robotics and Automation : Automation and Robotics, Robot Anatomy, Basic Structure of Robots, Resolution, Accuracy and Repeatability, Classification and Structure of robots, Point to Point and Continuous path Systems. Components of Robotic System, Industry Applications.

UNIT V:

Future Trends : 5G Technology and further. History, objective and global scenario of 5G Telecom and its applications. Fundamentals of Quantum Computing, Julia Programming Language, Benefits of Julia Language over other programming languages.

TEXTBOOKS

1. Artificial Intelligence dummies by John Paul Mueller and Luca Massron
2. Fundamentals of Robotics Engineering by Harry, H Poole

DRAFT

COURSE CODE & NAME: PTSPDET12T/ Professional Proficiency

COURSE OUTCOMES

1. learner can demonstrate understanding by their ability to describe tenses, various form and implement it correctly while speaking, reading, or writing.
2. learner will be able to identify parts of speech and other topics mentioned through reading comprehension, short story and paragraphs.
3. students will be able to perform well in discussion like meeting, collaborative team work, debate.
4. It will enhance student's skill to appear in various aptitude test within limited time constrain.
5. This module will enhance students' Analytical skill & will also improve quick decision-making skill.
- 6.

UNIT I:

Basic Grammar-Tenses, Subject-Verb- Agreement ,Article, formation of sentences.Introduction to technical terms.

UNIT II:

Self Introduction , body language, Voice modulation, E-mail writing ,Letter writing,Minutes writing,Resume building

UNIT III:

Simplification & Approximation

Alphanumeric Series & Miscellaneous

Coding-Decoding

Reference Books:

- 1.Quantitative Aptitude- R.S Agarwal
- 2.Analytical Reasoning –Peeyush Bhardwaj
- 3.English Grammar, Composition and Usage by N.K. Agrawal & F.T. Wood, Macmillan India Ltd., New Delhi.

COURSE CODE & NAME: ETDCAS112P/ Applied Physics Lab-1**COURSE OUTCOMES**

1. Identify the use of S.I. system of measurement with accuracy and applications of dimensional analysis .
2. Represent physical quantities as scalars and vectors, applying the physical laws and concepts of linear and circular motion in everyday life.
3. Analyze and design banking of roads/railway tracks and apply conservation of momentum principle to Explain rocket propulsion, recoil of gun etc.
4. Derive work, power and energy relationship and solve problems about work and power .
5. Define work, energy and power and their units .
6. Describe conservation of energy and its applications
7. Understand the concept of rotational motion of a rigid body and its applications
8. Describe the concept of Coulomb's law of Electrostatics, Electric field and Electric potential .
9. Define Capacitance and its units, explain the function of capacitors in simple circuits, and solve simple problems.
10. Explain the concept of electric current, series and parallel combination of resistances, Kirchhoff's law and its application to solve simple electrical circuits. .
11. Understand the concept of elasticity, surface tension, pressure and the laws governing movement of fluids.
12. Distinguish between conduction, convection and radiation, identify the different methods for reducing heat losses
13. Understand the laws of thermodynamics, Carnot cycle and their applications .

List of Experiments:

1. To measure the thickness of the given glass plate using Screw Gauge .
2. To measure the length and diameter of the given solid cylinder using Vernier calipers .
3. To find the value of acceleration due to gravity on the surface of earth by using a simple pendulum .
4. To determine the Radius of curvature of (i) convex mirror, (ii) concave mirror by Spherometer .
5. To find the Moment of Inertia of a flywheel about its axis of rotation
6. To determine the viscosity of glycerin by Stoke's method .
7. To determine force constant of spring using Hooke's law .
8. To determine Coefficient of Viscosity of water by Capillary Flow Method (Poiseuille's method).

TEXTBOOKS

- 1 Text Book of Physics for Class XI and Class XII (Part-I, Part-II); N C E R T ,Delhi
- 2 Concepts in Physics by HC Verma, Vol. I &II, Bharti Bhawan Ltd. NewDelhi

REFERENCE BOOKS

1. Comprehensive Practical Physics, Vol, I & II, JN Jaiswal, Laxmi Publications (P) Ltd , NewDelhi
2. B.Sc. Practical Physics by C L Arora, S. ChandPublication .

DRAFT

COURSE CODE & NAME: ETDCEE101P/ Basic Electrical and Electronics Engineering Lab**COURSE OUTCOMES:**

1. Understand the meaning of basic electrical quantities such as voltage, current, power etc .
2. Use working principle of transformer .
3. Use basic Network Theorem and Kirchoff's laws .
4. Understand the concept of Junction Diode, transistor and field effect transistor .

List of Experiments:

1. To change the speed and direction of rotation of d.c. shunt motor by
(a) Armature control method. (b) Field control method .
2. To change the speed and direction of rotation of d.c. compound motor by
(a) Armature control method. (b) Field control method .
3. To measure the terminal voltage with variation of load current of
(a) D.C. shunt generator. (b) D.C. compound generator .
4. To perform load test on a single phase transformer and determine its efficiency .
5. To start and run a induction motor by
(a) Star Delta Starter. (b) Auto Transformer Starter .
6. To measure slip of an induction motor by direct loading.
7. To start and change the direction of rotation of an induction motor .
8. To measure transformation ratio of a single phase transformer .
9. To measure power and P.F. in a single phase circuit by Ammeter, Voltmeter and Wattmeter .
10. To measure power and P.F. in a 3 phase/A.C. circuit by two wattmeter method .
11. To calibrate a single phase energy meter at different P.F.'s an different loads .
12. To locate the faults in an electrical machine by a megger .
13. To connect a fluorescent tube and note its starting and running current .

14. To draw characteristics of Silicon Controlled Rectifier (SCR).
15. Testing of electrical devices - Zener, Diode, Transistor, FET, UJT, SCR.
16. Use of operational amplifier as adder, subtractor, comparator, differentiator and integrators.
17. Repair and maintenance

TEXT BOOKS

1. Basic Electrical Engineering by PS Dhongal; Tata McGraw Hill Publishers, New Delhi
2. A Text Book of Electrical Technology, Vol. I and II by BL Thareja; S Chand and Co., New Delhi
3. Basic Electricity by BR Sharma; Satya Prakashan, New Delhi

REFERENCES

1. Basic Electrical Engineering by JB Gupta, S Kataria and Sons, Delhi
2. Experiments in Basic Electrical Engineering by SK Bhattacharya and KM Rastogi, New Age International Publishers Ltd., New Delhi

COURSE CODE & NAME: ETDCCS111P/ Fundamentals of computers, Information Technology and Office Automation Tool Lab**Course Outcomes:**

1. Use technology ethically, safely, securely, and legally .
2. Identify and analyze computer hardware, software, and network components .
3. Design basic business web pages using current HTML/CSS coding standards .
4. Install, configure, and remove software and hardware .
5. Use systems development, word-processing, spreadsheet, and presentation software to solve basic information systems problems.

List of Experiments:

1. Familiarization with Computer System and its peripheral devices
2. Familiarization with Operating System
3. Practice of internal and external commands of DOS
4. Working practice on windows operating system : creating file, folder . Copying, moving, deleting file, folder
5. Installing and uninstalling of new software using control panel .
6. Installation and uninstallation of new hardware drivers using control panel . Installation of Operating Systems
7. Disk defragmentation using system tool
8. Procedure of disk partition and its operation (Shrinking, Extending, Delete, Format).
9. . Changing resolution, colour, appearances, and screensaver option of the display also Changing System Date and Time.
10. User Account creation and its feature on Windows Operating System
11. Email Account creation, reading, writing and sending emails with attachments .
12. Internet browsing using browsers .
13. Using of Search Engine to get information from internet

OFFICE AUTOMATION: -**MS WORD****Tools to be used: Microsoft office/ Libre Office / Open Office / G Suite**

- a. Creating a document using different font, changing font size and color, changing the appearance through bold/italic/underline.
- b. Creating a document using subscript and superscript, justification of the document .
- c. Create a document using Bullets and Numbering .
- d. Create a document using page number, header and footer .
- e. Create a document using inserting page breaks and column break, line spacing .
- f. How to use mail merge and macro in MS Word .
- g. Creating table, formatting cells, use of different border styles, shading in tables, merging of cells, and partition of cells,
- h. inserting and deleting a row in a table in MS word
- i. Apply spelling checker, grammar mistakes, thesaurus in a document .
- j. Create a Boucher using templates, page setup and print preview, and then print that document .

MS EXCEL

- a. Working on spreadsheet like adding, deleting, merging cells, layout and style .
- b. Create a table and perform operation using predefined function on it.
- c. In MS Excel procedure to switching between different spreadsheets and workbook .
- d. Create a spreadsheet and print selected as well as full workbook.
- e. Create a spreadsheet with LOOKUP/VLOOKUP features .
- f. Create different charts in excel and implement formulas(automatic and use defined).

POWER POINT

- a. Create a Power Point presentation using slide template .
- b. Create a Power Point presentation using animation .
- c. Create a Power Point presentation using transition
- d. Create a Power Point Presentation with Adding movie and sound .
- e. Create a Power Point Presentation with Adding tables and chart etc .
- f. Changing slide color scheme in presentation .
- g. Viewing the presentation using slide navigator .
- h. Create, Save, Run and Print the Power Point Presentation .
- i. Create a database table using predefined template .
- j. Create and share Google docs .

TEXT BOOKS

1. Fundamentals of Computer by E Balagurusamy, Tata McGraw Hill Education Pvt Ltd, New Delhi.
2. Fundamentals of Computer by V Rajaraman; Prentice Hall of India Pvt. Ltd., New Delhi.

REFERENCES

1. Computer Fundamentals by RS Salaria; Khanna Book Publishing Co. (P) Ltd., New Delhi .
2. Computers Today by SK Basandara, Galgotia publication PvtLtd. Daryaganj, New Delhi .

DRAFT

COURSE CODE & NAME: ETDCME113P/ Engineering Graphics**COURSE OUTCOMES**

1. Identify and use of different grades of pencils and other drafting instruments which are used in engineering field.
2. Draw free hand sketches of various kinds of objects .
3. Use different types of scales and their utilization in reading and reproducing drawings of objects and maps.
4. Draw 2 - dimensional view of different objects viewed from different angles (orthographic views)
5. Draw and interpret complete inner hidden details of an object which are otherwise not visible in normal view
6. To make projections of Solid
7. Generate isometric (3D) drawing from different 2D (orthographic) views/sketches
8. Identify conventions for different engineering materials, symbols, sections of regular objects and general fittings used in Civil and Electrical household appliances
9. Use basic commands of AutoCAD .
10. Draw and learn different types of wooden joints used in furniture .
11. Draw the assembly from part details of objects
12. Identify and draw different types of screw threads used in various machines and assemblies as per domestic and international standards
13. Draw different types of nuts, bolts and washers
14. Draw various locking devices and foundation bolts
15. Draw different section of various types of keys and cotter joints
16. Draw various riveted joints
17. Draw various types of couplings used in power transmission .
18. Prepare drawing of given joints/couplings using AutoCAD

Lab No	Content	Sheets
1	<p>Introduction to engineering drawing: Introduction to drawing instruments, materials, layout and sizes of drawing sheets and drawing boards. Different types of lines in engineering drawing as per BIS specifications. Practice of vertical, horizontal and inclined lines, geometrical figures such as triangles, rectangles, circles, ellipses and curves, hexagonal, pentagon with the help of drawing instruments.</p> <p>Free hand and instrumental lettering (Alphabet and numeral) – upper case (Capital Letter), single stroke, vertical and inclined at 75 degree, series of 5,8,12 mm of free hand and instrumental lettering of height 25 to 35 mm in the ratio of 7:4</p>	04 (sheets)

	<p>Dimensioning Technique: Necessity of dimensioning, method and principles of dimensioning (mainly theoretical instructions) Dimensioning of overall sizes, circles, threaded holes, chamfered surfaces, angles, tapered surfaces, holes, equally spaced on P.C.D, counter sunk holes, counter bored holes, cylindrical parts, narrow spaces and gaps, radii, curves and arches</p>	
2	<p>Scales: Scales –their needs and importance (theoretical instructions) type of scales, definition of R.F. and length of scale Drawing of plain and diagonal scales</p> <p>Orthographic Projection : Theory of orthographic projections (Elaborate theoretical instructions)</p> <ul style="list-style-type: none"> ○ Projection of Points in different quadrant ○ Projection of Straight Line (1st and 3rd angle) <ul style="list-style-type: none"> ▪ Line parallel to both the planes ▪ Line perpendicular to any one of the reference plane ▪ Line inclined to any one of the reference plane. ○ Projection of Plane – Different lamina like square, rectangular, triangular and circle inclined to one plane, parallel and perpendicular to another plane in 1st angle only <ul style="list-style-type: none"> ● Three views of orthographic projection of different objects. (At least one sheet in 3rd angle) ● Identification of surfaces 	08 (sheets)
3	<p>Projection of Solid Definition and salient features of Solid, Types of Solid (Polyhedron and Solid of revolution). To make projections, sources, Top view, Front view and Side view of various types of Solid.</p> <p>Sections: Importance and salient features, Drawing of full section, half section, partial or broken out sections, Offset sections, revolved sections and removed sections.</p> <p>Convention sectional representation of various materials, conventional breaks for shafts, pipes, rectangular, square, angle, channel, rolled sections, Orthographic sectional views of different objects.</p>	04 (sheets)
4	<p>Isometric Views</p> <ol style="list-style-type: none"> a. Fundamentals of isometric projections and isometric scale. b. Isometric views of combination of regular solids like cylinder, cone, cube and prism. 	02 (sheets)
5	<p>Common Symbols and Conventions used in Engineering</p> <ol style="list-style-type: none"> a. Civil Engineering sanitary fittings symbols b. Electrical fitting symbols for domestic interior installations <p>Introduction to AutoCAD : Basic introduction and operational instructions of various commands in AutoCAD. At least two sheets on AutoCAD of cube, cuboid, cone, pyramid, truncated cone and pyramid, sphere and combination of above solids.</p> <p><i>Auto CAD drawing will be evaluated internally by sessional marks and not by final theory paper.</i></p>	04 (sheets)
6	<p>Detail and Assembly Drawing: Principle and utility of detail and assembly drawings</p>	05

	<p>Wooden joints i.e. corner mortice and tenon joint, Tee halving joint, Mitre faced corner joint, Tee bridle joint, Crossed wooden joint, Coggedjoint, Dovetail joint, Through Mortice and. Tenon joint, furniture drawing - freehand and with the help of drawing instruments</p> <p>Screw Threads: Thread Terms and Nomenclature Types of threads-External and Internal threads, Right and Lefthand threads (Actual and Conventional representation), single and multiple start threads. Different Forms of screw threads-V threads (B.S.W threads, B. A thread, American National and Metric thread), Square threads (square, Acme, Buttress and Knucklethread)</p>	(sheets)
7	<p>Nuts and Bolt: Different views of hexagonal and square nuts. Square and hexagonal headed bolt Assembly of Hexagonal headed bolt and Hexagonal nut with washer Assembly of square headed bolt with hexagonal and with washer.</p> <p>Locking Devices: Different types of locking devices-Lock nut, castle nut, split pin nut, locking plate, slotted nut and spring washer. Foundations bolts-Rag bolt, Lewis bolt, curved bolt and eyebolt. Drawing of various types of studs</p>	04 (sheets)
8	<p>Keys and Cotters: Various types of keys and cotters - their practical application, drawings of various keys and cotters showing keys and cotters in position.</p> <ul style="list-style-type: none"> • Various types of joints Spigot and socket joint • Gib and cotter joint • Knuckle joint 	03 (sheets)
9	<p>Rivets and Riveted Joints : Types of general purpose-rivets heads Caulking and fullering of riveted joint Types of riveted joints</p> <ul style="list-style-type: none"> • Lap joint-Single riveted, double riveted (chain and zig-zag type) • Single riveted, Single cover plate butt joint • Single riveted, double cover plate butt joint • Double riveted, double cover plate butt joint chain and zig-zag type) 	04 (sheets)
10	<p>Couplings: Introduction to coupling, their use and types</p> <ul style="list-style-type: none"> • Flange coupling (protected) • Flexible Coupling <p>Use of CAD software: Draw any two joints/coupling using CAD software from the following:</p> <ul style="list-style-type: none"> • Sleeve and cotter joint • Knuckle joint • Spigot and socket joint • Gib and cotter joint • Flange coupling • Muff coupling 	04 (sheets)

TEXTBOOKS/ REFERENCE BOOKS

1. Elementary Engineering Mathematics by BS Grewal, Khanna Publishers, New Delhi
2. Engineering Mathematics, Vol I & II by SS Sastry, Prentice Hall of India Pvt Ltd ,

REFERENCE BOOKS

1. Applied Mathematics-II by Chauhan and Chauhan, Krishna Publications, Meerut
2. Applied Mathematics-I (B) by Kailash Sinha and Varun Kumar; Aarti Publication, M

DRAFT