# Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

## Diploma in Mechanical Engineering

## SEMESTER II

| SUBJECT CODE | Category | SUBJECT NAME | TEACHING & EVALUATION SCHEME | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | THEORY | | | PRACTICAL | | Th | T | P | CREDITS |
| | | | END SEM | MST | Q/A | END SEM | Q/A | | | | |
| DTMA201N | | APPLIED MATHEMATICS-II | 60 | 20 | 20 | 0 | 0 | 3 | 0 | 0 | 3 |

**Legends:** L - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; C - Credit;
*** Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 20 marks.

**Course Educational Objectives (CEOs):**

To introduce the students to the fundamentals of Engineering Mathematics.

**Course Outcomes (COs):**

After the successful completion of this course students will be able to:

1. Understand the concept of determinant and matrices.
2. Know the fundamental concept of coordinate geometry.
3. Understand the concept of differential calculus.
4. Know the fundamental principle of vector algebra.

## Syllabus

**Unit - 1**

**Determinant:** Introduction, Minor and Cofactors, Study properties of determinants, Applications of Determinants (Area of Triangle and Crammer's rule).

**Unit – II**

**Matrices:** Introduction, Types of matrices, Addition and subtraction of matrices, Scalar multiplication of matrices, multiplication of matrices, adjoint of a matrix.

**Unit – III**

**Coordinate Geometry**: Introduction, Distance formula of two points, section formula, Area of a triangle, condition for collinearity, Equation of straight line (slope intercept form, point slope form, two point slope form), angle between two straight lines.

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## SEMESTER II

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|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | THEORY | | | PRACTICAL | | Th | T | P | CREDITS |
| | | | END SEM | MST | Q/A | END SEM | Q/A | | | | |
| DTMA201N | | APPLIED MATHEMATICS-II | 60 | 20 | 20 | 0 | 0 | 3 | 0 | 0 | 3 |

**Unit – IV**

**Differentiation:** Introduction, Fundamental rule for differentiation, differential coefficient of product of two functions, differential coefficient of quotient of two functions.

**Unit – V**

**Vector Algebra:** Concept of vector and scalar quantities, different types of vectors, addition of vectors, subtraction of vectors, multiplication of vectors (dot and cross product), applications.

**Reference Books:**


1. *B.K. Paul, Diploma Engineering Mathematics (Vol-1), U.N. Dhār & Sons*
2. *G.P. Samanta, a Text Book of Diploma Engineering Mathematics, Volume-1, Learning Press.*
3. *Dr. S. Bose & S. Saha, A Complete Text Book of Mathematics, Lakshmi Prakasan*
4. *H.S. Hall & S.R. Knight, Higher Algebra Book Palace, New Delhi*
5. *S.L. Loney, Trigonometry S. Chand & Co.*
6. *H.K. Dass Engineering Mathematics S. Chand & Co.*
7. *B.K. Pal, K. Das, Engineering Mathematics, Volume-1, U.N. Dhar& Sons*
8. *B.C. Das & B.N. Mukherjee, Differential Calculus U.N. Dhar& Sons*


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# Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
# Shri Vaishnav Institute of Technology and Science
# Choice Based Credit System (CBCS) in the light of NEP-2020
# Diploma
# (2024-2027)

| COURSE CODE | CATEGORY | COURSE NAME | TEACHING &EVALUATION SCHEME | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | THEORY | | | PRACTICAL | | L | T | P | CREDITS |
| | | | END SEM University Exam | Two Term Exam | Teachers Assessment* | END SEM University Exam | Teachers Assessment* | | | | |
| DTCE 101 | BEC | Applied Mechanics | 60 | 20 | 20 | 30 | 20 | 2 | 1 | 2 | 4 |

**Legends**: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; C - Credit.
***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

**Course Educational Objectives (CEOs):**

The students (A) will be Able to familiarize with different branches of mechanics (B) with emphasis on their analysis and application to practical engineering problems(C) efficiently & effectively (D)

**Course Outcomes (COs):**

The students will be able to

1. To apply knowledge of mathematics, science in engineering.
2. To identify, formulate, and solve engineering problems.
3. Demonstrate various types of forces and their analysis.
4. Demonstrate centre of gravity and moment of inertia determination of different geometrical shapes.

**Syllabus:**

**UNIT I** **08 Hrs.**

**Static and Dynamic Forces:** Introduction to Engineering Mechanics; Classification of Engineering Mechanics; Statistics, Dynamics, Kinematics, Kinetics etc.; Fundamental Laws of Mechanics.

**UNIT II** **09 Hrs.**

**Law of Forces:** Force, Pressure and Stress; Free body diagram; Bow's Notation; Characteristics and effects of a force; System of forces, Resolution of a force, Composition of forces, Resultant/equilibrant force; Law of Parallelogram of Forces, Law of Triangle of Forces, Polygon Law of Forces; Lami' s Theorem, Equilibrium of a Body Under Two/ Three/More than Three Forces; Law of Superposition of Forces.

**UNIT III** **09 Hrs.**

**Analysis of Truss Structure:** Introduction to Truss system, Types of trusses, Analysis of Truss using Joint Method.

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|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | THEORY | | | PRACTICAL | | L | T | P | CREDITS |
| | | | END SEM University Exam | Two Term Exam | Teachers Assessment* | END SEM University Exam | Teachers Assessment* | | | | |
| DTCE 101 | BEC | Applied Mechanics | 60 | 20 | 20 | 30 | 20 | 2 | 1 | 2 | 4 |

**Legends**: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; C - Credit.
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**UNIT IV** **09 Hrs.**

**Centre of Gravity:** Centroid; Centre of Gravity; Determination of Centroid of Simple Figures; Centroid of Composite Sections.

**Moment of Inertia:** Basic Concept of Inertia, Definition of Moment of Inertia, Theorems of Moment of Inertia and Radius of Gyration.

**UNIT V** **09 Hrs.**

**Beams:** Types of Beams, Simply Supported Beam, Overhanging Beam, Cantilever Beam; Types of supports of a beam or frame: Roller, hinged and fixed supports; Load on the beam; Different types of loading; Support reaction of a beam for point and uniformly distributed load.

**Textbooks:**


1. Engineering Mechanics, K.K Dwivedi, Dhanpat Rai Publications Pvt Ltd. 2020
2. Engineering Mechanics, Bhankar Bharat Gokaldas,Vandana Somkuwar, Khanna Book Publishing, 2021
3. A Textbook of Engineering Mechanics, R.S. Khurmi, N. Khurmi, S Chand Publishing, 2018.


**Reference Books:**


1. A Textbook of Applied Mechanics, R.K. Rajput, Laxmi Publications, 2016.
2. Engineering Mechanics, S.P, Timoshenko, Engineering Mechanics, McGraw Hill Education.
3. Engineering Mechanics: Statics & Dynamics, R.C. Hibbler, Pearson Education.


**List of Practical's:**

1. To verify the law of Triangle of forces
2. To verify the Lami's theorem.
3. To verify the law of parallelogram of forces.
4. To verify law of polygon of forces
5. To determine support reaction and shear force at a given section of a simply Supported beam and verify in analytically using parallel beam apparatus.
6. To determine the moment of inertia of fly wheel by falling weight method.
7. To verify bending moment at a given section of a simply supported beam.
8. Study of Various Beams and their Loading conditions

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# Shri VaishnavVidyapeethVishwavidyalaya, Indore
## Shri Vaishnav Institute of Technology and Science
## Choice Based Credit System (CBCS) in the Light of NEP-2020
## Diploma in Mechatronics
## (Common to EI/MX/ET)

**w.e.f 2023**

| COURSE CODE | CATEGORY | COURSE NAME | TEACHING &EVALUATION SCHEME | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | THEORY | | | PRACTICAL | | L | T | P | CREDITS |
| | | | END SEM University Exam | Two Term Exam | Teachers Assessment* | END SEM University Exam | Teachers Assessment* | | | | |
| DTEI301N | DCC | MEASUREMENT AND INSTRUMENTATION | 60 | 20 | 20 | - | - | 3 | 0 | 0 | 3 |

**Legends**: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; **C** - Credit;
***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

**Course Educational Objectives (CEOs):**

1. To introduce the basic functional elements of instrumentation.
2. To introduce the fundamentals of electrical and electronic instruments.
3. To educate on the comparison between various measurement techniques.
4. To introduce various transducers.
5. To introduce various smart transducers and the data acquisition system.

**Course Outcomes (COs):**

After completion of this course the students are expected to be able to demonstrate following knowledge, skills, and attitudes.

The students will be able to

1. To apply knowledge of measurement system.
2. To identify, formulate, and solve the fundamentals of electrical and electronic instruments.
3. Demonstrate various types of introduce various modern storage and display devices.
4. Demonstrate various types oftransducers and the data acquisition system.

## Syllabus

**UNIT I** **8Hrs.**

Definition of Measurement, application and types ofmeasurement System, Accuracy, Precision, sensitivity, Resolution. Functional elements of an instrument, Static and dynamic characteristics, Errors in measurement, Statistical evaluation of measurement data, Standards and calibration.

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| Vishwavidyalaya, Indore | Vishwavidyalaya, Indore | | |

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## Choice Based Credit System (CBCS) in the Light of NEP-2020
## Diploma in Mechatronics
## (Common to EI/MX/ET)

**w.e.f 2023**

| COURSE CODE | CATEGORY | COURSE NAME | TEACHING &EVALUATION SCHEME | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | THEORY | | | PRACTICAL | | L | T | P | CREDITS |
| | | | END SEM University Exam | Two Term Exam | Teachers Assessment* | END SEM University Exam | Teachers Assessment* | | | | |
| DTEI301N | DCC | MEASUREMENT AND INSTRUMENTATION | 60 | 20 | 20 | - | - | 3 | 0 | 0 | 3 |

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**UNIT II** **9Hrs.**

Construction and operation of moving coil, moving iron, Theory and Operation of D' Arsonval.Principle and types of analog and digital voltmeters, ammeters, Determination of B-H curve and measurements of iron loss.

**UNIT III** **7Hrs.**

D.C & A.C potentiometers, D.C & A.C bridges, transformer ratio bridges, self-balancing bridges. Multiple earth and earth loops, Electrostatic and electromagnetic interference, Grounding techniques.

**UNIT IV** **6Hrs.**

Introduction to Transducers, Types of transducers, difference between sensor and transducer, Characteristics of transducer, analog and digital transducers.

**UNIT V** **7Hrs.**

Introduction to Smart sensors: Temperature sensor, Level sensor, Humidity sensor, Infrared sensor Introduction to Data Acquisition System (DAS)and its Industrial Application.

**Text Books:**


1. H.S. Kalsi, "Electronic Instrumentation", Tata McGraw Hill, 4rth Edition 2019.
2. D.V.S. Moorthy, "Transducers and Instrumentation", Prentice Hall of India Pvt Ltd, 2nd Edition 2011.


**References:**


1. Martin Reissland, "Electrical Measurements"", New Age International (P) Ltd., Delhi, reprint,2010.


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# Shri Vaishnav Institute of Social Sciences, Humanities and Arts
# Choice Based Credit System (CBCS) in Light of NEP-2020
# HUMANITIES
# For Diploma (Engineering all branches)

Semester II

| COURSE CODE | CATEGORY | COURSE NAME | TEACHING &EVALUATION SCHEME | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | THEORY | | | PRACTICAL | | L | T | P | CREDITS |
| | | | END SEM University Exam | Two Term Exam | Teachers Assessment* | END SEM University Exam | Teachers Assessment* | | | | |
| DTHU101 | - | Communication Skills | 0 | 0 | 0 | 30 | 20 | 0 | 0 | 4 | 2 |

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*__Teacher Assessment__ shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

**Course educational Objectives (CEOs): The students will be**

- **CEO1** Learn the different nuances of communication. .
- **CEO2** Understand the features of listening and reading skills.
- **CEO3** Develop competency in professional communication.
- **CEO4** Study the essential aspects of effective written communication through Business letters and email writing for professional success.
- **CEO5** re-engineer their attitude and understand its influence on behaviour.

.

**Course Outcomes (Cos):** The students will be able to

- **CO1** Develop a comprehensive understanding of the theoretical and practical aspects of communication.
- **CO2** Understand and the different aspects of listening and reading**.**
- **CO3** Demonstrate different strategies for using professional communication skills
- **CO4** Draft effective business correspondence (letters) with brevity and clarity depending on the various prescribed formats.
- **CEO5** acquire communication, Problem solving skills, Negotiation and Time management skills

## COURSE CONTENTS:

**UNIT I**

Introduction to LSRW skills, Art of Communication, Basic Soft skills, Body Language at workplace.

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## HUMANITIES
## For Diploma (Engineering all branches)
Semester II

| COURSE CODE | CATEGORY | COURSE NAME | TEACHING &EVALUATION SCHEME | | | | | | | | |
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| | | | THEORY | | | PRACTICAL | | L | T | P | CREDITS |
| | | | END SEM University Exam | Two Term Exam | Teachers Assessment* | END SEM University Exam | Teachers Assessment* | | | | |
| DTHU101 | - | Communication Skills | 0 | 0 | 0 | 30 | 20 | 0 | 0 | 4 | 2 |

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**UNIT II**
Reading Comprehension:
Short Stories: 1. A Letter to God 2. An Astrologer's Day

**UNIT III**
Interviewing Skills –Role of Interviewer and Interviewee, Types of interviews, Types of Interview Questions

**UNIT IV**
Business Correspondence: Business Letter, Parts & Layouts of Business Resume and Job application, E-mail writing.

**UNIT V**
Problem Solving, Negotiation Skills, Time Management, Anger and Stress Management.

**Suggested Readings**


- Ashraf Rizvi.(2005**).** *Effective Technical Communication*. New Delhi:Tata Mc Graw Hill
- Adair, John (2003). Effective Communication. London: Pan Macmillan Ltd.
- A.J. Thomson and A.V. Martinet(1991).*A Practical English Grammar*( 4th ed). Newyork: Oxford IBH Pub.
- Kratz, Abby Robinson (1995). Effective Listening Skills. Toronto: ON: Irwin Professional Publishing.
- Prasad, H. M.(2001*) How to Prepare for Group Discussion and Interview.* New Delhi: Tata McGraw-Hill.
- Pease, Allan. (1998).*Body Language*. Delhi: Sudha Publications.


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## Shri Vaishnav Institute of Social Sciences, Humanities and Arts
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## HUMANITIES
## For Diploma (Engineering all branches)
Semester II

| COURSE CODE | CATEGORY | COURSE NAME | TEACHING &EVALUATION SCHEME | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | THEORY | | | PRACTICAL | | L | T | P | CREDITS |
| | | | END SEM University Exam | Two Term Exam | Teachers Assessment* | END SEM University Exam | Teachers Assessment* | | | | |
| **DTHU101** | **-** | **Communication Skills** | 0 | 0 | 0 | 30 | 20 | 0 | 0 | 4 | 2 |

**Legends**: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; **C** - Credit;
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# Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
# Shri Vaishnav Institute of Technology and Science
# Choice Based Credit System (CBCS)
# Diploma in Electrical Engineering
# Common to EE/Solar Engineering/TX
# (2022-2025)

| COURSE CODE | CATEGORY | COURSE NAME | TEACHING & EVALUATION SCHEME | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | THEORY | | | PRACTICAL | | L | T | P | CREDITS |
| | | | END SEM University Exam | Two Term Exam | Teachers Assessment* | END SEM University Exam | Teachers Assessment* | | | | |
| DTEE202 | | Basic Electronics Engineering | 60 | 20 | 20 | 30 | 20 | 2 | 1 | 2 | 4 |

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***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

**Course Educational Objectives (CEOs):**
The course objective is to make students of all the branches of Engineering to understand the efficacy of electronic principles which are pervasive in engineering applications.

**Course Outcomes (COs):**
After studying this course, students will be able to:

1. Appreciate the significance of electronics in different applications.
2. Understand the applications of diode in rectifiers, filter circuits and wave shaping.
3. Apply the concept of diode in rectifiers, filters circuits.
4. Design simple circuits like amplifiers (inverting and non-inverting), comparators, adders, integrator, and differentiator using OPAMPS.
5. Compile the different building blocks in digital electronics using logic gates and implement simple logic function using basic universal gates,

**Syllabus**

**UNIT I** **9 Hrs.**

**Semiconductor and Diodes:** Semiconductor: Definition, Classification, Intrinsic and Extrinsic, N type and P type materials concept of hole, majority and minority charge carriers -formation of depletion layer in P-N junction – barrier voltage – biasing the P-N junction – forward bias, reverse bias, P-N junction diode – symbol V-I characteristics – forward and reverse characteristics. Zener diode: Construction & Working Principle - Characteristics –Zener break down – Avalanche break down.

**UNIT II** **8 Hrs.**

**Bipolar Junction Transistors**: Transistor: NPN and PNP transistor – operation – Transistor as an amplifier –Transistor as a switch– Transistor biasing : Fixed bias, Collector base bias, Self-bias – CB, CE, CC Configurations –Characteristics – Comparison between three configurations in terms of Input impedance, Output impedance, Current gain, Voltage gain – classification of amplifiers.

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## Diploma in Electrical Engineering
## Common to EE/Solar Engineering/TX
## (2022-2025)

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| | | | THEORY | | | PRACTICAL | | L | T | P | CREDITS |
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| DTEE202 | | Basic Electronics Engineering | 60 | 20 | 20 | 30 | 20 | 2 | 1 | 2 | 4 |

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;
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**UNIT III** **9 Hrs.**

**Special Purpose Diodes and Transistors:** Light emitting diode (LED). Zener diode, Zener diode circuit for voltage regulation, Photo diode, Solar cell. PIN diode, Varactor, Schottky diode, Varistors, Tunnel diode, Seven Segment display, identify segments on pin using multi-meter, Dot-matrix LED display, Photo transistor.

**UNIT IV** **10 Hrs.**

**Digital Electronics:** Number Systems. Decimal Number System. Binary Number System. Basic gates AND, OR, NOT, NAND, NOR, EX-OR, EX-NOR, Building AND, OR Gate with diodes, Basics of Digital logic families RTL, DTL, TTL, CMOS.

**UNIT V** **8 Hrs.**

**Flip-Flops:** Introduction to Flip-Flops, NAND Gate Latch/ NOR Gate Latch, RS Flip-Flop, Gated Flip-Flops: Clocked RS Flip-Flop.

**Textbooks:**


1. S.Salivahanan, N.Suresh Kumar, A.Vallavaraj , "Electronic Devices and Circuits", Tata McGraw – Hill Publication 2016/3rd Edition.
2. Boylestad & Nashelsky, "Electronic Devices and Circuit Theory", Prentice Hall of India, New Delhi 2009/4th Edition.
3. V.K. Mehta, "Principle of Electronics", S.Chand Tata McGraw – Hill Publication 2009/3rd Edition


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## (2022-2025)

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|---|---|---|---|---|---|---|---|---|---|---|---|
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| DTEE202 | | Basic Electronics Engineering | 60 | 20 | 20 | 30 | 20 | 2 | 1 | 2 | 4 |

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**List of Experiments:**

1. Plotting of forward V-1 characteristics for a P-N junction diode (Silicon & Germanium diode).
2. To Plot the input and output characteristics and calculation of parameters of a transistor in common base configuration.
3. To Plot input and output characteristics and calculation of parameters of a transistor in common emitter configuration.
4. Verification and interpretation of truth tables for AND, OR, NOT NAND, NOR and Exclusive OR (EXOR) and Exclusive NOR (EXNOR) gates.
5. Measure voltage and current of a given circuit using analog and digital multimeters.
6. Operate all controls of CRO front panel.
7. Measure voltage and frequency of any given signal using oscilloscope.
8. Measure parameters of various signals.
9. Test performance of transistor as a switch.
10. Identify various connectors & draw their diagram.

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Vishwavidyalaya, Indore

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Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

# Shri VaishnavVidyapeethVishwavidyalaya
## Shri Vaishnav Institute of Technology and Science
## Choice Based Credit System (CBCS) in the Light of NEP-2020
## Diploma (All Branch) w.e.f. 2024 batch

| COURSE-CODE | CATE-GORY | COURSE NAME | TEACHING &EVALUATION SCHEME | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | THEORY | | | PRACTICAL | | L | T | P | CREDITS |
| | | | END SEM University Exam | Two Term Exam | Teachers Assessment* | END SEM University Exam | Teachers Assessment* | | | | |
| DTET201 | | Computer Basics | 0 | 0 | 0 | 30 | 20 | 0 | 0 | 2 | 1 |

**Legends**: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; **C** - Credit;
***Teacher Assessment** shall be based on following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

**Course Educational Objectives (CEOs):**
The subject introduces the fundamentals of computer system for using various hardware and software components. An exposure to fundamentals of computer programming is very essential for all diploma holders. This course is intended to make new students comfortable with computing environment - learning basic computer skills, learning basic application software tools, understanding computer hardware.

**Course Outcomes (COs):**
After completion of this course the students will be able to:
1. Identify the various components of a computer system.
2. Differentiate between hardware and software part of the computer.
3. Comfortably work on computer, install and configure OS, assemble a PC and connect it to External devices, write documents, create worksheets, prepare presentations etc.

**Syllabus**

**UNIT I** **9 Hrs.**
**Introduction to Computer Fundamentals:** Brief history of development of computers, Basic Applications of Computer, Software and hardware, Computer block diagram, Classification of Computers, Components of Computer System, Computer architecture.

**UNIT II** **8 Hrs.**
**Basics of Operating System:** Operating system concepts, purpose and functions, Operations of Windows OS, Creating shortcut of application on the desktop, Overview of control Panel, Taskbar, Applications in windows (Paint, Notepad, WordPad, Calculator)

**UNIT III** **8 Hrs.**
**Introduction to Internet:** Basic of Computer networks: LAN, WAN and MAN. Concept of Internet, Applications of Internet.

**UNIT IV** **9 Hrs.**
**Introduction to Office: MS-Word:** Introduction, Starting Word Screen and its Components, Elementary Working with Word Processing Software.

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**MS-Excel:** Introduction, Starting Spread Sheet, Basics of Spreadsheet, Spread Sheet Screen and its Components, Formatting in excel, Working with formulas, Printing worksheets.
**MS-Power point:** Introduction, Starting PowerPoint Presentation, Basics of PowerPoint, PowerPoint Screen and Its Components, Formatting in PowerPoint, Using Templates, Inserting charts, Inserting tables, Printing presentations.

**UNIT V** **9 Hrs.**

**Memory:**Memory: Primary memory, types of memory: RAM & ROM: Static and DynamicROM,PROM, EPROM,EEPROM, Flash memory, Secondary memory: Harddisks, CD ROM, CD-R, CD-RW, DVD-R, DVD-RW, concepts of latest storagedevices- Blu-ray disk, HVD.

**Text Books:**

1. V. Rajaraman, "Introduction to Computers", 6th Edition, Prentice-Hall India, 2015.
2. R.S. Salaria, "Computer Fundamentals", Khanna Publishing House, 1st Edition, 2017

**References:**

1. Anita Goel, "Computer Fundamentals", 1st Edition, Pearson Publication, 2010.
2. Sonal Abhyankar, "Emerging trends in Information Technology", Nirali Prakashan, 2014.

**List of Experiment:**

1. Identify the internal and external hardware/peripheral components.
2. Installation of operating system like Windows / Linux.
3. Creating and Formatting a Document in MS Word.
4. Working with Tables in MS Word.
5. Creating a Resume and Mail Merge in MS Word.
6. Basic Calculations in MS Excel.
7. Using Charts in MS Excel.
8. Using presentation tool, Create a simple Presentation consisting of 4-5 slides about Input and Output Devices or other content.
9. Email id creation, sending and receiving of email with attachments.
10. Create a Google form and analyze it.

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