## CHHATTISGARH SWAMI VEVEKANAND TECHNICAL UNIVERSITY, BHILAI

**Diploma in Civil Engineering/Mechanical Engineering/Chemical Engineering**

### SEMESTER-II

<table>
<thead>
<tr>
<th>S.No</th>
<th>Board of Study</th>
<th>Subject Code</th>
<th>Course</th>
<th>Periods/Week</th>
<th>Scheme of Examination</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>L</td>
<td>T</td>
<td>P</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ESE</td>
<td>CT</td>
<td>TA</td>
</tr>
<tr>
<td>1</td>
<td>Humanities</td>
<td>200211 (46)</td>
<td>Communication skills – II</td>
<td>4</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>Basic Science</td>
<td>200212 (14)</td>
<td>Applied Maths – II</td>
<td>3</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>3</td>
<td>Mechanical Engg</td>
<td>200213 (37)</td>
<td>Applied Mechanics</td>
<td>3</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>4</td>
<td>Computer Science &amp; Engg.</td>
<td>200214 (22)</td>
<td>Computer Fundamentals &amp; its Applications</td>
<td>4</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>5</td>
<td>Mechanical Engg</td>
<td>200215 (37)</td>
<td>Engineering Drawing</td>
<td>2</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>6</td>
<td>Computer Science &amp; Engg.</td>
<td>200221 (22)</td>
<td>Computer Fundamentals &amp; Applications Lab</td>
<td>-</td>
<td>-</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>Mechanical Engg</td>
<td>200222 (37)</td>
<td>Applied Mechanics Lab</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>8</td>
<td>Mechanical Engg</td>
<td>200223 (37)</td>
<td>Basic Non-Conventional Energy Sources Lab</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>Humanities</td>
<td>200224 (46)</td>
<td>PPA</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td></td>
<td>17</td>
<td>8</td>
<td>11</td>
</tr>
</tbody>
</table>

**PPA** – Proficiency in Professional Activity  
**L** – Lecturer,  
**T** – Tutorial,  
**P** – Practical,  
**ESE** – End Semester Exam,  
**CT** – Class Test,  
**TA** – Teachers Assessment
CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

SEMESTER : II
COURSE TITLE : COMMUNICATION SKILLS -II
THEORY CODE : 200211 (46)
BRANCH / DISCIPLINE : ALL DISCIPLINES

Minimum number of class tests to be conducted: 2

DISTRIBUTION OF MARKS AND HOURS:

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Chapter No.</th>
<th>Chapter Name</th>
<th>No. of Hours/Periods</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>PASSAGES FOR COMPREHENSION</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>APPLIED GRAMMAR</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>PASSAGES IN GENERAL STUDIES</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>TECHNICAL WRITING</td>
<td>17</td>
<td>20</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>LETTER WRITING</td>
<td>18</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TOTAL</td>
<td>80</td>
<td>100</td>
</tr>
</tbody>
</table>

DETAILED COURSE CONTENTS:

Chapter –1 : PASSAGES FOR COMPREHENSION

- Taming the Atom
- Radar and its Uses
- A Volcano
- Precision – A Measure of Progress
- Laser

Chapter –2 : APPLIED GRAMMAR

- Basic Sentence Pattern
- Infinitives
- Narration
- Common Errors
- Modifiers
- Paragraph Writing

Chapter –3 : PASSAGES IN GENERAL STUDIES
Salient Features of the Indian Constitution
Structure of Government
Functioning of an Economic System
Production and Productivity by
Professional Ethics

Chapter –4: TECHNICAL WRITING

• Technical Writing
  a. A Communication Skill
  b. Basic facts of Technical Writing
• Main Features of Technical Writing
  a. Features of Technical Writing
  b. Style: Literary and Technical
  c. Mechanics of Technical Writing
• Forms of Technical Writing
  a. Forms
  b. Writing Definitions
  c. Writing Technical Descriptions
  d. Writing Technical Descriptions of Processes
  e. Writing Instructions
• Writing Technical Reports
  a. Qualities of a Good Report
  b. Forms of Reports
  c. Types of Reports

Chapter –5: LETTER WRITING

• Introduction
• Purposes of Letters
• Characteristics of a Letter
• Mechanics and Style
• Types of Business Letters
  - Letter of Enquiry
  - Answer to an Enquiry

INSTRUCTIONAL STRATEGIES

• Regular assignments should be given on every topics.
• Arranging expert lecture on specific topics.
• Assessment of term work of conduction of minimum two progressive tests during the session.
• Use of Audio-Visual aids.
• Group Discussions.
• Paper Presentation on different topic.

LIST OF TUTORIALS
- Group discussion and seminar
- Small report writing
- Translation works
- Practice of various letter writing / precise writing / essay writing

LEARNING RESOURCES

(a) Reference Books:

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Title</th>
<th>Author, Publisher, Edition &amp; Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Business Communication</td>
<td>Asha Kaul, Prentice Hall of India Pvt.Ltd, New Delhi</td>
</tr>
<tr>
<td>4</td>
<td>Living English Structure</td>
<td>W.S Allen</td>
</tr>
<tr>
<td>5</td>
<td>Practical English Grammar</td>
<td>Thomos and Martinet</td>
</tr>
<tr>
<td>8.</td>
<td>How To Write Correct English</td>
<td>R P Sinha, Bharti Bhavan Publication, Patna</td>
</tr>
<tr>
<td>9</td>
<td>English Errors of Indian Students</td>
<td>Oxford University Publication, By TLH Smith Pearse</td>
</tr>
<tr>
<td>10</td>
<td>Passages in General Studies</td>
<td>Vikas Publication, Bhopal</td>
</tr>
</tbody>
</table>

(b) Others:
- VCD
- OHP Transparencies
- Computer Aided Instructional Packages
- Video/Audio Cassettes

*******
SEMESTER : II
COURSE TITLE : APPLIED MATHEMATICS-II
THEORY CODE : 200212 (14)
BRANCH/DISCIPLINE : CIVIL/MECH/ELECTRICAL/
METALLURGY/COMPUTER SCIENCE &
ENGINEERING/INFORMATION
TECHNOLOGY/INSTRUMENTATION/ELEX. &
TELCOMMUNICATION

Minimum number of class tests to be conducted: 2

DISTRIBUTION OF MARKS AND HOURS:

<table>
<thead>
<tr>
<th>Chapter No.</th>
<th>Chapter Name</th>
<th>No. of Hours/ Periods</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>NUMERICAL ANALYSIS</td>
<td>02</td>
<td>4</td>
</tr>
<tr>
<td>2.</td>
<td>FINITE DIFFERENCES</td>
<td>04</td>
<td>6</td>
</tr>
<tr>
<td>3.</td>
<td>NUMERICAL DIFFERENTIATION &amp; INTEGRATION</td>
<td>06</td>
<td>10</td>
</tr>
<tr>
<td>4.</td>
<td>DIFFERENCE EQUATION</td>
<td>08</td>
<td>10</td>
</tr>
<tr>
<td>5.</td>
<td>MATRICS</td>
<td>12</td>
<td>20</td>
</tr>
<tr>
<td>6.</td>
<td>SIMPLE INTEGRATION</td>
<td>12</td>
<td>20</td>
</tr>
<tr>
<td>7.</td>
<td>FORMATION OF DIFFERENTIAL EQUATION</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>8.</td>
<td>LAPLACE TRANSFORMATION</td>
<td>05</td>
<td>10</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>64</td>
<td>100</td>
</tr>
</tbody>
</table>

DETAILED CONTENT

Chapter – 1 : NUMERICAL ANALYSIS
• Bisection Method
• False Position Method
• Newton-Raphson Method

Chapter – 2  FINITE DIFFERENCES

• Interpolation forward differences
• Backward differences
• Factorial Polynomial
• Newton’s Forward interpolation, formula for equal intervals
• Sterling Formula (Central Difference)
• Newton’s Backward Formula
• Lagrange’s interpolation formula for unequal intervals.

Chapter – 3  : NUMERICAL DIFFERENTIATION & INTEGRATION

• Numerical Differentiation (Forward & Backward Difference formula)
• Numerical Integration by Trapezoidal & Simpson’s Rule

Chapter – 4  : DIFFERENCE EQUATION

• Order of a difference equation
• Solution of Difference equation
• Complementary Section
• Particular Integral.

Chapter – 5  : MATRICS

• Introduction
• Definition
• Special Matrices
• Addition and Subtraction of Matrices
• Multiplication of Matrices
• Transpose of a Matrix
• Symmetric & Skew Symmetric Matrix
• Adjoint of a Square Matrix
• Inverse of Matrix
• Solution of simultaneous Linear equations
• Rank of Matrix
• Consistency of Linear System of Equations

Chapter – 6  : SIMPLE INTEGRATION

• Introduction, Definition
- Method of substitution
- Integration by parts
- Integration by Partial Fraction Method
- Integration of the form and Reduction Formula.
- Definite Integral – Introduction
- Theorems Definite Integrals
- Gamma function

Chapter – 7: FORMATION OF DIFFERENTIAL EQUATION
- Differential Equations
- Definition
- Order and Degree of Differential Equations
- Formation of Differential Equations
- Solution of a Differential Equation
- Differential Equation of the first order and first degree
- Variable Separable
- Homogeneous Differential Equations
- Equations Reducible to Homogeneous form
- Linear Differential Equations
- Equations Reducible to the Linear Form
- Exact Differential Equations
- Equation Reducible to the Exact Equations
- Second order Linear Differential Equation with constant coefficient – Complementary function particular integral

Chapter – 8: LAPLACE TRANSFORMATION
- Definition, Transforms of Elementary functions
- Properties of Laplace transforms
- Transform of Derivatives
- Transform of Integral

INSTRUCTIONAL STRATEGIES:
- Chalk and talk method to explain various laws, theorems etc.
- Expert Lecture
- Demonstration and use of log tables
- Classroom practices for different typical exercises
- Use of derivation and formulas.
LEARNING RESOURCES

(a) Reference Books:

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Title</th>
<th>Author, Publisher, Edition &amp; Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introductory Method of Numerical Analysis</td>
<td>Sastry S. S. (, PHI)</td>
</tr>
<tr>
<td>2</td>
<td>Mathematical Statistics</td>
<td>Ray and Sharma</td>
</tr>
<tr>
<td>3</td>
<td>Discrete Mathematics</td>
<td>Liu CL (Tata Mc Graw Hill)</td>
</tr>
<tr>
<td>4</td>
<td>Linear Programming</td>
<td>Srinath L.S. (East-West Press)</td>
</tr>
<tr>
<td>6</td>
<td>Finite Differences and Numerical Analysis</td>
<td>Saxena H.C.</td>
</tr>
<tr>
<td>7</td>
<td>Modern Algebra</td>
<td>Sharma and Seth (Ram Prasad and Sons)</td>
</tr>
<tr>
<td>8</td>
<td>Computer Oriented Numerical Methods, PHI</td>
<td>Raja Raman V. (PHI)</td>
</tr>
</tbody>
</table>

(b) Others:

- Practice sheets
- Learning Packages
- Work book

***************
CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

SEMESTER : II

COURSE TITLE : APPLIED MECHANICS

THEORY CODE : 200213 (37)

BRANCH/DISCIPLINE : CIVIL/MECHANICAL/ELECTRICAL/
METALLURGICAL/INSTRUMENTATION

Minimum number of class tests to be conducted: 2

DISTRIBUTION OF MARKS AND HOURS:

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Chapter No.</th>
<th>Chapter Name</th>
<th>No. of Hours/Periods</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>FUNDAMENTAL CONCEPTS</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>COMPOSITION &amp; RESOLUTION OF FORCES</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>CENTROID &amp; MOMENT OF INERTIA</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>FRICTION</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>WORK, POWER &amp; ENERGY</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>KINEMATICS</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td>KINETICS</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>8</td>
<td>8</td>
<td>SIMPLE LIFTING MACHINES</td>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td>9</td>
<td>9</td>
<td>TRANSMISSION OF POWER</td>
<td>9</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>64</td>
<td>100</td>
</tr>
</tbody>
</table>

DETAILED COURSE CONTENTS:

Chapter – 1 : FUNDAMENTAL CONCEPTS

- Definition of Mechanics, Statics, Dynamics, Kinetics, Kinematics.
- Concept of space, mass, particle, body, rigid body.
- Scalar, vector, fundamental units, derived units.

Chapter – 2 : COMPOSITION & RESOLUTION OF FORCES

- Force- concept, definition, unit, graphical representation.
Concept of system of forces - non-coplanar, coplanar, concurrent, non-concurrent & parallel forces.
Composition & Resolution of forces.
Free body diagrams, law of parallelogram, Varignon's theorems.
Equilibrium of Coplanar concurrent forces, parallel forces & non-concurrent forces, Lami's Theorem.
Moment of a force and Couple.

Chapter – 3 : CENTROID & MOMENT OF INERTIA

- Location of centroid and center of gravity.
- Centroid of regular plane and compound areas.
- Center of gravity of simple solids.
- Moment of Inertia of plane areas.
- Perpendicular & Parallel. Axes theorems.

Chapter – 4 : FRICTION

- Rough & Smooth surfaces, concept of friction.
- Types of friction, Coloumb's law of friction, Co-efficient of friction, angle of friction, angle of repose.
- Friction on inclined plane, Screw and Nut friction.
- Ladder and wedge friction.
- Friction in Journal bearings
- Method of reducing friction.

Chapter – 5 : WORK, POWER & ENERGY

- Definition and unit of Work done, Power and Energy.
- Principle of Conservation of power and energy.
- Power of engine and pumps, mean effective pressure, power measurement.
- Relation between Heat & Mechanical work, relation between Electrical & Mechanical energy.

Chapter – 6 : KINEMATICS

- Kinematics in Cartesian and polar coordinates.
- Concept of speed, velocity, acceleration, radial and transverse velocity, particle under uniform and non-uniform acceleration, tangential and normal acceleration.
- Angular displacement, Angular Velocity, Angular Acceleration.
- Motion under gravity.

Chapter – 7 : KINETICS

- Kinetics of particle, motion under constant force, Newton’s Laws of Motion.
- Momentum and energy principles, Impulses and angular momentum.
- D’Alemberts principle.
- Motion under constant torque, Flywheel.

Chapter – 8 : SIMPLE LIFTING MACHINES

- Load, Effort, Mechanical advantage, Velocity ratio, Efficiency and relation between them.
- Law of Machine, Reversibility of Lifting machine.
Chapter – 9 : TRANSMISSION OF POWER

- Transmission of power through Belt, Rope and Gears,
- Ratio of tension on tight and slack sides.
- Spur, Helical & Bevel gear, Rack and Pinion gear.
- Gear Trains- Simple, Compound, Reverted.

INSTRUCTIONAL STRATEGIES:

- Lecture Method.
- Industrial visits.
- Expert Lecture.
- Demonstration. The course shall be taught using the laboratory side by side. Underpinning laws and Principles should be explained using desktop models. Special emphasis should be given on Laboratory experiments.

PRACTICAL

PRACTICAL CODE : 200222 (37)

NO. OF HOURS/PERIODS : 32

LIST OF PRACTICALS / TUTORIALS:

- Verification of law of triangle of forces.
- Verification of law of Parallelogram of forces.
- Verification of law of Polygon of forces.
- Verification of Lami’s Theorem by Jib crane method.
- Demonstration of Non-concurrent, Non-Parallel forces (Funicular diagram)
- Verification of Law of Moments.
- Determination of C.G. of a given lamina.
- Determination of coefficient of friction for surfaces of different materials on-
  a) Horizontal Plane
  b) Inclined Plane
- Draw – V-T diagram’s for different combinations of-
  a) Velocities
  b) Uniform accelerations
- Find-out Mechanical advantage, Velocity Ratio and Efficiency for following machines-
  a) Simple Screw
  b) Differential Wheel & Axle
  c) Simple Purchase Crab
  d) Differential Pulley Block
- Demonstration of use of inclined plane as a lifting machine.

LEARNING RESOURCES

(a) Reference Books :
<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Title</th>
<th>Author and Publisher</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A Text Book of Applied Mechanics</td>
<td>R.S. Khurmi, S. Chand &amp; Company Ltd., New Delhi</td>
</tr>
<tr>
<td>2</td>
<td>Applied Mechanics</td>
<td>I. B. Prasad, Khanna Publisher, New Delhi</td>
</tr>
<tr>
<td>3</td>
<td>Applied Mechanics</td>
<td>Ramanathsn, Dhanpat Rai and Sons, New Delhi</td>
</tr>
<tr>
<td>4</td>
<td>Engineering Mechanics</td>
<td>Timoshenko &amp; Young, Mc Garawhills Publication</td>
</tr>
<tr>
<td>5</td>
<td>Engineering Mechanics</td>
<td>S. Rajshekaran &amp; G. Sankarsubramaniam, Vikas</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Publishing House Pvt. Ltd. New Delhi</td>
</tr>
<tr>
<td>5</td>
<td>Strength of Material and Mechanics of Structure</td>
<td>Punamia, Standard Publisher Distributor New Delhi</td>
</tr>
</tbody>
</table>
CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

SEMESTER : II
COURSE : COMPUTER FUNDAMENTALS AND ITS APPLICATIONS
THEORY CODE : 200214 (22)
BRANCH/DISCIPLINE : CIVIL/MECHANICAL/ELECTRICAL/
METALLURGICAL/INSTRUMENTATION/ELEX. AND TELECOMMUNICATION/
MINING AND MINE SURVEYING

Minimum number of class tests to be conducted: 2

DISTRIBUTION OF MARKS AND HOURS

<table>
<thead>
<tr>
<th>Chapter No.</th>
<th>Chapter Name</th>
<th>No. of Hours/ Periods</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>INTRODUCTION TO COMPUTERS</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>2.</td>
<td>MICROCOMPUTER</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>3.</td>
<td>DATA REPRESENTATION</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>4.</td>
<td>NUMBER SYSTEM</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>5.</td>
<td>COMPUTER LANGUAGE</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>6.</td>
<td>INTRODUCTION TO DOS OPERATING SYSTEM</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>7.</td>
<td>INTRODUCTION TO WINDOWS OPERATING SYSTEM</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>8.</td>
<td>COMPUTER APPLICATIONS</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>9.</td>
<td>INTERNET APPLICATIONS</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>10.</td>
<td>INTERNET CONNECTIVITY</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>80</td>
<td>100</td>
</tr>
</tbody>
</table>
DETAILED COURSE CONTENT

CHAPTER - 1  INTRODUCTION TO COMPUTERS

- Generations Of Computer.
  - First, Second, Third and Fourth generation Hard Ware, Soft Ware, Firm Ware with Examples.
- Classification & Applications Of Computers.
  - Micro, Mini, Mainframes and Super-Computers
  - Applications of computers

CHAPTER - 2  MICROCOMPUTER

Structure & Working of Micro-Computers

Block diagram of computer

- Central Processing Unit
- Memory Unit
- Input & Output Devices

CHAPTER – 3  DATA REPRESENTATION

- Number Systems.
  - Types of number systems- Binary, Octal, Decimal, Hexadecimal
  - Bit Byte, Nibble, ASCII code, Bcd, Gray, Excess-3, EBCDIC.

CHAPTER – 4  NUMBER SYSTEM CONVERSION & ITS OPERATIONS

- Binary addition, subtraction
  - BCD addition, subtraction.
  - 1's complement and 2's complement methods of subtraction.

CHAPTER – 5  COMPUTER LANGUAGES

- Classification and characteristics of languages.
  - Machine language.
  - Assembly language
  - High level language
- Computer Hardware
- Classification of Software: and firmware
  - System software: O.S. Loader, Linker, Interpreter, Compiler and Assembler
  - Application Software

CHAPTER – 6  INTRODUCTION TO OPERATING SYSTEMS

- Micro-Soft Disk Operating System (MS-DOS)
  - System files: BIOS, COMMAND.COM, CONFIG.SYS, Autoexec.bat file
- MS-DOS Commands.
  - Internal Commands- dir, cd, md, rd, del, ren, date, time, vol. And copy
  - External commands – attrib, format, edit, find, diskcopy, backup
CHAPTER – 7

INTRODUCTION TO WINDOWS OPERATING SYSTEM.
- Concept of Windows-Arranging, Moving, Resizing, Opening, and Closing of windows
- Folder/ File Management-Search, copy, delete and rename files and folders
- Windows Accessories: Notepad, Word Pad, Paint

CHAPTER – 8

COMPUTER APPLICATIONS SOFTWARE
- Word processing software
  - MS-WORD
- Data analysis software
  - MS-EXCEL Introduction to electronic spreadsheet
- Presentations software
  - MS-POWER POINT

CHAPTER – 9

INTERNET TECHNOLOGY
- Introduction To Internet.
- Different Services Of Internet.
  - www
  - Email
  - Chat (textual /voice)
  - Bulletin Boards
  - Video conferencing
  - FTP(uploading and downloading files)
- Web-Site Access And Information Search.
  - Browsers and search engines.

CHAPTER – 10

INTERNET CONNECTIVITY.
- Internet Service Provider (ISP)
- Internet accounts : Shell account, TCP/IP ISDN and Leased Line account and its features
- Hardware Required.
  - MODEM and Terminal Adapters.

IMPLEMENTATION STRATEGIES

The subject 'Computer Fundamentals and Applications' is designed to make the student familiar with computer technology and its applications.

- Chapters 1 to 5 deals with the basics and concepts of computers technology Chapter 6 & 7 deals with the Operating System and Chapter 8 to 10 deals with the application of computers for office automation and Internet technology.
- The subject is expected to be taught as per the teaching scheme and weightage of marks allotted for topics in theory as well as practical.
- Chapters 6 to 10 should be covered during the practical sessions.

The students should be given maximum hands on practice to develop skills in operating computer systems and working with different application software. Assignments should be given on real time applications. More assignments can be given as per the availability of time. For effective teaching/learning it is expected that list of questions based on related topics may be given.
PRACTICAL

Practical Code : 200221 (22)

No. of Hours/Periods: 96

LIST OF PRACTICAL / TUTORIALS:

- Study of input and output devices
- Study of storage devices
- Practice on internal and external MS-DOS commands
- Practice on Windows 95/98/2000
  - Starting Windows, Exploring the desktop, Arranging windows, My Computer, The start button, Creating Shortcuts, Practice on moving and sizing of windows
  - Study of file organization: creating, copying, moving, renaming and deleting
  - Practice on Windows Accessories- Notepad, Word Pad and Paint
  - Editing document & formatting text, Previewing and printing document/Image file
  - Practice on Windows Explorer
  - Recycle bin
  - Shutting down windows
- Practice on MS-Word
  - Create and format document
  - Edit and Modify text- changing font size type and style
  - AutoText, AutoComplete, AutoCorrect, grammar and spellchecker, Find and replace of text
  - Open save and print a document
  - Insert, modify table
- Practice on Microsoft Excel
  - Create, save & format worksheet
  - Open and save worksheet file
  - edit & modify data
  - use formula and functions
  - split windows and freeze pans
  - Create, edit, modify, print worksheet/charts.
- Practice on PowerPoint
  - Create, edit, insert, move, slides
  - Open and save presentation
  - Insert picture, slide layout, action button
  - Present slide show
- Practice on:
- Identification of type of Account.
- Connecting to internet
  - Dial up access
  - Web browsing
  - Searching websites
  - Information searching
  - Email services
  - Creating email accounts & Receiving and sending mails

**LEARNING RESOURCES**

a) **Reference Books**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Title</th>
<th>Author</th>
<th>Publisher &amp; Address, Edition Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>The ABCs of Ms-Office 97</td>
<td>Gay Hart Davis, BPB Publications N. Delhi, 1st Edition 1996</td>
<td></td>
</tr>
</tbody>
</table>

b) **Others**

1. Lab manuals (if any)
2. CAI packages (if any)
3. OHP transparencies Models (if any)

*****
CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI,

SEMESTER : II

COURSE TITLE : ENGINEERING DRAWING

THEORY CODE : 200215 (37)

BRANCH/DISCOPLINE : CIVIL/MECHANICAL/ELECTRICAL/METALLURGY/
INSTRUMENTATION/MINING/COMPUTER SCIENCE & ENGINEERING/
INFORMATION TECHNOLOGY

Minimum number of class tests to be conducted: 2

DISTRIBUTION OF HOURS & MARKS

<table>
<thead>
<tr>
<th>Chapter No.</th>
<th>Chapter Name</th>
<th>Hours</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>INTRODUCTION</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>2.</td>
<td>DIMENSIONING TECHNIQUES &amp; STANDARD CONVENTIONS</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>3.</td>
<td>ENGINEERING CURVES AND SCALES</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>4.</td>
<td>ORTHOGRAPHIC PROJECTIONS OF POINTS, LINES AND PLANES</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>5.</td>
<td>PROJECTION OF SIMPLE MACHINE PARTS AND COMPONENTS</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>6.</td>
<td>PROJECTION OF SOLIDS</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>7.</td>
<td>SECTION OF SOLIDS</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>8.</td>
<td>DEVELOPMENT OF SURFACES</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>9.</td>
<td>ISOMETRIC PROJECTIONS</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>10.</td>
<td>BASICS OF CAD</td>
<td>18</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>96</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

DETAILED COURSE CONTENTS

Chapter –1: Introduction
- Introduction to drawing equipments, instruments and their uses
- Planning of drawing sheet as per IS. 696 – 1972
- Indian standard practices of laying out and folding of drawing
- Different types of lines used in engineering drawing
- Standard practice for writing single stroke vertical and inclined capital and lower cases letters (practice to be done on sketch book)
- Standard practice of writing numerals (practice to be done on sketch book)
Chapter –2: Dimensioning techniques and standard conventions

- Identification and representation of various symbols used in Mechanical and Electrical Drawing
- Drawing Identification and representation of various symbols of building elements, materials and sanitary fittings
- Principles, system and arrangement of dimensioning
- Practice problems of current method of dimensioning

Chapter –3: Engineering curves and scales

- Form associated with engineering curves
- Types of engineering curves
- Method of construction of Engineering Curves
- Practice problems of drawing various Engineering Curves.
- Importance of scale in Engineering drawing
- Types of scales- plain, diagonal etc.
- Practical problems for constructing various types of scale.

Chapter –4: Orthographic projection of points, lines and planes

- Definitions of various terms associated with orthographic projections.
- Planes of projections
- Concept of Quadrants
- First and third angle method of projection
- Projection of line in different positions with respects to H.P. V.P. and X-Y line
- Projection of planes in different position with respect to reference planes
- Practice problems on projection of points, lines and planes.

Chapter –5: Projections of simple machine parts and components

- Procedure for drawing projections and sectional views of simple machine components
- Practice problems of sketching and drawing the projections and sections of simple machine components.

Chapter –6: Projections of solids

- Types of solids and associated terminology
- Position of solid with respect to reference planes
- Drawing projections of solid in different position with respect to reference planes
- Practice problems to draw projections of solid in different positions.

Chapter –7: Section of solids

- Concept of sectioning planes
- Auxiliary planes and true shape of section
- Practice problems for drawing projections and section of solids.

Chapter –8: Development of surfaces

- Concept and importance of surface development in engineering field
- Development of surfaces for the following
  - Cube
  - Cylinder
  - Prism
  - Cone and Frustum cone
Practice problems.

Chapter –9: Isometric projections

- Limitations of orthographic projections
- Definitions of the terms axonometric, oblique, Isometric and diametric projections
- Procedure for preparing isometric oblique
- Isometric view of geometrical solids and simple machine parts
- Practice problems.

Chapter –10: Basics of CAD

- Computer hardware and software requirement for CAD
- Co-ordinate systems
- Set up for a CAD drawing
- Drawing objects like Line, Circle, Arc, Ellipse, Regular Polygons, Polylines, Donuts etc.
- Editing Commands like Move, Copy, Rotate, Scale, Fillet, Chamfer, Trim, Extend, Array, Mirror etc.
- Basic dimensioning, geometric dimensioning and tolerance
- Use CAD commands for simple orthographic and isometric drawings

INSTRUCTIONAL STRATEGIES

- Lecture Method
- Demonstration and use of instrument used in drawing.
- Classroom practices for different typical exercises.
- Use of computer for developing drawing
- OHP Transparencies for complicated drawing objects

LIST OF TUTORIAL WORK

- Problems on Scales and Letterings (One sheet)
- Problems on Curves (One sheet)
- Simple Orthographic Projections- One for First Angle and One for Third Angle Projection (Two sheets)
- Orthographic projections with sections (One sheet)
- Isometric projection for two objects (One sheet)
- Projection of Points and Lines (One sheet)
- Projection of Planes (One sheet)
- Projection of Solids (Two sheets)
- Section of Solids (Two sheets)
- Development of surface (Two sheets)
- Use CAD for orthographic projection (Five problems)
- Use CAD for isometric projection (Three problems)

LEARNING RESOURCES

a) Reference Books

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Title</th>
<th>Author/Publisher</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I.S. 696. (Latest revision).</td>
<td>BIS, India</td>
</tr>
<tr>
<td>2.</td>
<td>Engineering Drawing</td>
<td>N.D. Bhatt, Charoter Publisher, Anand</td>
</tr>
<tr>
<td>---</td>
<td>--------------------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>4.</td>
<td>Engineering Drawing</td>
<td>R.B. Gupta, Satya Prakashan, Delhi</td>
</tr>
<tr>
<td>5.</td>
<td>Geometrical Drawing</td>
<td>P.S. Gill, ketson &amp; Sons</td>
</tr>
<tr>
<td>8.</td>
<td>Work Book in Mechanical Drafting</td>
<td>TTTI, Bhopal</td>
</tr>
</tbody>
</table>

******
CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

SEMESTER : II

SUBJECT TITLE : PROFICIENCY IN PROFESSIONAL ACTIVITY (PPA)

CODE : 200224 (46)

BRANCH/DISCIPLINE : ALL DISCIPLINES

DISTRIBUTION OF MARKS AND HOURS:

<table>
<thead>
<tr>
<th>Chapter No.</th>
<th>Chapter Name</th>
<th>No. of Hours/Periods</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Presentation Skills</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>2</td>
<td>Learning To Learn Skills</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>Study Skills</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>Information Search</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>Time Management</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>Personality</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td>Personal Grooming</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL</strong></td>
<td><strong>32</strong></td>
<td><strong>40</strong></td>
</tr>
</tbody>
</table>

In this particular subject though it has been classified as practical, it maybe essential to take up certain theory classes and assignments this may include expert lectures, group discussion, plenary session etc.

DETAILED COURSE CONTENTS:

Chapter – 1 : PRESENTATION SKILLS :

Oral Presentation :
- Need of effective oral presentation.
- Characteristics of good oral presentation.
- Ways of Oral Presentation (Seminar, Viva-voce, Interview, Group Discussion, Lecturing, Power Point etc.)
• Gestures/Mannerism during oral presentation Media, methods used for effective oral presentation.
• Assessment of oral presentation.

Written Presentation:

• Need of written presentation.
• Characteristics of written presentation.
• Ways of written presentation (Report writing, manual, handout, notes etc.).
• Grammar, Punctuation, referencing paragraphing during written presentation.

Chapter – 2 : LEARNING TO LEARN SKILLS:

• Need of Learning to Learn Skills.
• Type of Learning Skills (Learning face to face, Individualized learning, Distance learning, Self-learning).
• Developing Learning to Learn Skills.

Chapter - 3 : STUDY SKILLS:

• Methods of Good Study Habits
• Note Taking
• Developing Reading Skills

Chapter – 4 : INFORMATION SEARCH:

• Objectives of information search.
• Ways of information search (Internet surfing, Library search, Abstracts, Journals, books etc.)
• Assimilation and presentation of information.

Chapter – 5 : TIME MANAGEMENT:

• Principles of Time Management.
• Time Management matrix.
• Criteria governing Time Management.
• Possible time waster

Chapter- 6 : PERSONALITY:

• Concept and meaning of personality
• Characteristics of good personality
• Factors influencing personality
• Types of personality.
• Need for desirable personality for success
• Qualities of complete personality.
Chapter - 7  PERSONAL GROOMING:

- Posture and Health.
- Types of posture.
- Importance of posture.
- Factors affecting good health—diet, exercise personal cleanliness, sleep and rest.
- Use of cosmetics.
- Dress Code
- Physical Fitness and Inner Strength

INSTRUCTIONAL STRATEGIES:

- Lecture Method.
- Industrial visits.
- Expert Lecture.
- Demonstration
- Assignments—Individual and Group
- Group Discussions
- Presentation

LIST OF PRACTICALS

- Seminar Presentation on Specific topic for fixed time duration
- Information Collection on a particular topic followed by presentation in specified time duration.
- Visit to multinational outlet for observing personality traits of officials and preparing detailed report
- Demonstration exercise by personality experts
- Guest lectures by well known personality

LEARNING RESOURCES:

(b) Reference Books

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Title</th>
<th>Author, Publisher, Edition &amp; Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>How to achieve success and happiness</td>
<td>Sultan Chand and Sons, New Delhi</td>
</tr>
<tr>
<td>2</td>
<td>How to develop effective personality</td>
<td>Dr Mittal and Agarwal CS</td>
</tr>
<tr>
<td>3</td>
<td>The Art of Public Speaking</td>
<td>Stephen E Lucas</td>
</tr>
<tr>
<td>4</td>
<td>Public Speaking and Influencing Business</td>
<td>Dale Carnegie</td>
</tr>
</tbody>
</table>

(b) Others:

- Video Programs.
- Learning Packages.
- Computer with internet facilities
- Television
- Charts.

******