

**CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI**

**DIPLOMA PROGRAMME IN MINING AND MINE SURVEYING**

**Semester II**

**COURSE OF STUDY AND SCHEME OF EXAMINATION**

S. No	Board of Study	Subject Code	Subject	Periods/week			Scheme of Examination					Credit L+(T+P)/2	
				L	T	P	Theory			Practical			Total Marks
							ESE	CT	TA	ESE	TA		
1.	Humanities	200211 (46)	Communication Skill II	4	1	-	100	20	20	-	-	140	5
2.	Computer Science and Engg	200214 (22)	Computer fundamentals & its applications	4	1	-	100	20	20	-	-	140	5
3.	Mechanical Engg	200215 (37)	Engineering Drawing	2	4		100	20	20	-	-	140	4
4.	Mining Engg	239211 (39)	Elements of mining technology	4	1	-	100	20	20	-	-	140	5
5.	Mining Engg	239212(39)	Elements of mine surveying	4	1	-	100	20	20	-	-	140	4
6.	Computer Science and Engg	239223 (22)	Computer fundamentals & its applications			2	-	-	-	50	20	70	1
7.	Humanities	200224 (46)	PPA	-	-	2	-	-	-	-	40	40	1
8.	Mining Engg	239221(39)	Elements of mine surveying	-	-	2	-	-	-	50	20	70	1
9.	Mining Engg	239222(39)	*Industrial Training	-	-	5	-	-	-	100	20	120	3
<b>Total</b>				18	8	11	500	100	100	200	100	1000	29

PPA-PROFICIENCY IN PROFESSIONAL ACTIVITY, L- LECTURE, T. TUTORIAL, P-PRACTICAL.

ESE- END OF SEMESTER EXAMINATION, CT-CLASS TEST, T – TEACHER’S ASSESSMENT.

\* Industrial training: Students will under go on industrial practical training for 2 months during 2<sup>nd</sup> sem.



**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:**

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

**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:

Sl.No.	Title	Author, Publisher, Edition & Year
1	Business Communication	Asha Kaul, Prentice Hall of India Pvt.Ltd, New Delhi
2	A Course in Technical English, Book-I	Somaiya Publication Pvt. Ltd. Bombay
3	A Course in Technical English, Book-II	Somaiya Publication Pvt. Ltd. Bombay
4	Living English Structure	W.S Allen
5	Practical English Grammar	Thomos and Martinet
6.	Essentials of English & Business Communication.	Rajendra Pal, J.S Korlahalli S.Chand & Sons, New Delhi.
7.	Grammar & Composition	P R Sarkar, Anand Marg Publication, Easter, Matropolition Calcutta
8.	How To Write Correct English	R P Sinha, Bharti Bhavan Publication, Patna
9	English Errors of Indian Students	Oxford University Publication, By TLH Smith Pearse
10	Passages in General Studies	Vikas Publication, Bhopal

### (b) Others:

- VCD
- OHP Transparencies
- Computer Aided Instructional Packages
- Video/Audio Cassettes

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**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**

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

## ***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.

#### **COMPUTER LANGUAGES**

### **CHAPTER – 5**

- 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 & Restore

- 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
- INTERNET TECHNOLOGY**
- CHAPTER – 9**
- 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 : 239223 (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

S.No.	Title	<i>Author</i> <b>Publisher &amp; Address, Edition</b> <b>Year</b>
1.	Introduction to Computers	Peter Norton's, Tata McGraw Hills Publishing Co.l Ltd. N. Delhi, IInd Edition, 1998
2.	The ABCs of Ms-Office 97	Gay Hart Davis, BPB Publications N. Delhi, Ist Edition 1996
3.	Computer Organization and Architecture	William Stalling, Prentice Hall of India Pvt.Ltd , N.Delhi, IV th - Edition, 1999
4.	Structured computer Organization	Andrews Tanenbaum, Prentice Hall of India Pvt.Ltd, N.Delhi, III rd- Edition, 1997
5.	Teach yourself.... Windows 95	AL Stevens Comer, BPB Publication, N.Delhi, I st – Edition, 1995
6.	The Internet Book	Douglas E., Prentice Hall of India Pvt.Ltd, N.Delhi, II – Edition, 2000
7	Computer Today	S.K.Basanbhara, Galgotia Publication, 1 st Edition, 2000

### b) Others

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

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

**SEMESTER** : **II**  
**COURSE TITLE** : **ENGINEERING DRAWING**  
**THEORY CODE** : 200215 (37)  
**BRANCH/DESCIPLINE** : CIVIL/MECHANICAL/ELECTRICAL/METALLURGY/  
INSTRUMENTATION/MINING/COMPUTER  
SCIENCE  
& ENGINEERING/  
INFORMATION TECHNOLOGY

Minimum number of class tests to be conducted: 2

**DISTRIBUTION OF HOURS & MARKS**

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

**DETAILED COURSE CONTENTS**

Chapter –1: Introduction

- **Introduction to drawing equipments, instruments and their uses**
- **Planning of drawing sheet as per I.S. 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

S.No.	Title	Author/Publisher
1.	I.S. 696. (Latest revision).	BIS, India
2.	Engineering Drawing	N.D. Bhatt, Charoter Publisher, Anand
3.	Engineering Drawing & Machine Drawing	R. K. Dhawan, Kumar
4.	Engineering Drawing	R.B. Gupta, Satya Prakashan, Delhi
5.	Geometrical Drawing	P.S. Gill, ketson & Sons
6.	Machine Drawing	By P.S. Gill, ketson & Sons
7.	Engineering Drawing	Gujral & Shende, Khanna Pub. N.Delhi

8.	Work Book in Mechanical Drafting	TTTI, Bhopal
9.	Engineering Drawing & Graphics Using AutoCAD 2000	T. Jeyapoovan, Vikas Publishing House Pvt. Ltd, New Delhi.

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**CHHATTISGARH SWAMI VIVEKANAND TECHNICAL  
UNIVERSITY, BHILAI**

SEMESTER : II  
SUBJECT TITLE : ELEMENTS OF MINING TECHNOLOGY  
THEORY CODE : 239211 (39)  
BRANCH/ DISCIPLINE : MINING AND MINE SURVEYING

Minimum number of class tests to be conducted: 2

**SUGGESTED DISTRIBUTION OF MARKS AND HOURS:**

S. No.	Chapter No.	Chapter Name	No.. of Periods/Hours	Marks
1.	1	Introduction	10	10
2.	2	Modes of entry	15	20
3.	3	Sinking Operations	15	20
4.	4	Drifting and tunneling	15	20
5.	5	Introduction to methods of working	25	30
<b>Total</b>			<b>80</b>	<b>100</b>

**DETAILED COURSE CONTENTS :**

**CHAPTER – 1 INTRODUCTION**

- 1.1 History of mining Industry and mineral wealth of India. Specially related with Chattishgarh.
- 1.2 Selection of site for opening a mine

**CHAPTER -2 MODES OF ENTRY**

- 2.1 Different types of modes of entry. inclined, shaft, audit.
- 2.2 Condition suitable to selection of a suitable mode of entry.
- 2.3 Factors governing, shape, size and site of modes of entry.
- 2.4 Compressions, suitability and advantages of each type of mode of entry.

**CHAPTER -3 SINKING OPERATIONS**

- 3.1 Sinking of shaft in a normal coal strata.
- 3.2 Marking of centre of shaft.
- 3.3 Temporary supports/lining permanent lining.
- 3.4 Firing shots in sinking shaft.
- 3.5 Introduction of special methods of shaft sinking.

**CHAPTER -4 DRIFTING AND TUNNELING**

- 4.1 Introduction about drifting and tunneling.
- 4.2 Methods of drifting and tunneling.

- 4.3 Manual methods of drifting and tunneling
- 4.4 Mechanized methods of drifting and tunneling.
- 4.5 Ventilation drilling , blasting and mucking.
- 4.6 Transportation systems in drifts and tunnels.

**CHAPTER -5 INTRODUCTION TO METHODS OF WORKING**

- 5.1 Open cast mining condition suitable for limit of quarrying advantage and disadvantage
- 5.2 Manual Quarrying, lay outs.
- 5.3 Semi mechanized and machines used, layouts, and related regulation.
- 5.4 Introduction to different methods of coal mining, Bord and pillar method of working, condition suitable for general layouts, percentage of extraction, development, preparation for depillaring , depillaring operation, related regulation.
- 5.5 Longwall methods of working suitability, favorable condition, longwall advancing method, layouts of single unit and double unit longwall face.
- 5.6 Longwall retreating method, layout of single unit and double unit faces, related regulation.

**LIST OF TUTORIALS :**

- Group discussion and seminar
- Small report writing on any field visit related to topic of study.
- Develop charts and diagrams related to mine working
- Develop models by group of students on different topics.

**REFERENCE BOOKS :**

Sl.No.	Title	Author, Publisher, Edition & Year
1.	Mining Environment and Ventilation	G.B. Mishra
2.	Selection Installation & Maintenance of mine pumps.	Rakesh & Lal
3.	Elements of Mining Technology Vol I & II	D.J. Deshmukh
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**OTHERS –**

- VCDs
- Video cassettes
- Learning packages
- Industrial Training

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SEMESTER : II  
SUBJECT TITLE : ELEMENTS OF MINE SURVEYING  
THEORY CODE : 239212 (39)  
BRANCH/DISCIPLINE : MINING AND MINE SURVEYING

Minimum No. of class tests to be conducted: 2

**DISTRIBUTION OF MARKS AND HOURS:**

S. No.	CHAPTER NO.	CHAPTER NAME	No. of Hours/Periods	MARKS
1	1	Introduction	10	5
2	2	Chain surveying	20	25
3	3	Compass Surveying	22	25
4	4	Plane Table Surveying	14	20
5	5	Computation of Areas and Volumes	14	25
Total			80	100

**DETAILED COURSE CONTENTS:**

**CHAPTER-1: INTRODUCTION**

- 1.1 Introduction to surveying
- 1.2 Definition and object of surveying
- 1.3 Primary division of survey
- 1.4 Classification of survey
- 1.5 Principles of surveying
- 1.6 Linear measurements
- 1.7 Angular measurements
- 1.8 Units of measurements, Linear and Angular
- 1.9 Purpose of survey, degree of precision required for the purpose; nature and extent of survey, sources of error, time available for both field and office work, cost for survey.
- 1.10 Measurements of distances
  - a. Methods of determining the distances.  
(i) Direct (ii) Commutative methods.
  - b. Direct measurements - methods and instruments used for measuring distance.
  - c. Pacing, Passometer, Pedometer, Odometer, Speedometer, Perambulator, Judging distance, Time measurement.

## **CHAPTER-2 : CHAIN SURVEYING**

- 2.1 Introduction
- 2.2 Purpose of chain surveying, principles of chain surveying.
- 2.3 Equipments used in chain surveying. chain, tapes, ranging rods, arrows, pegs, mallet, cross, staff, optical square, construction of optical square and uses.
- 2.4 Different operations in chain surveying, ranging-direct and indirect, chaining on flat and slopping ground, offsetting perpendicular and oblique.
- 2.5 Conducting chain survey over the given area.
- 2.6 Recording field data.
- 2.7 Plotting the chain survey.
- 2.8 Conventional signs.
- 2.9 Obstacles in chaining.
- 2.10 Errors in chain surveying.
- 2.11 Corrections for in-correct length of chain.
- 2.12 Simple examples on corrections.
- 2.13 Test and Adjustments of chain.

## **CHAPTER-3 : COMPASS SURVEYING**

- 3.1 Purpose of compass surveying.
- 3.2 Construction and working of prismatic compass.
- 3.3 Uses of surveyors and prismatic compass, Constructional details of surveyor's compass.
- 3.4 Setting up the compass and taking observations
- 3.5 Concept of (i) Meridians; true, Magnetic and arbitrary meridians (ii) Bearings - True, Magnetic and arbitrary, magnetic dip and declination.
- 3.6 Systems of measuring the bearings - whole circle bearing, reduced bearing (Q.B.), numerical problems on conversions of bearing.
- 3.7 Fore bearing back bearing of a line.
- 3.8 Concept of a traverse - open and closed traverse.
- 3.9 Traversing with prismatic compass.
- 3.10 Local attraction causes detection error and corrections.
- 3.11 Local attraction causes detection error and corrections.
- 3.12 Checks for and open and closed traverse.
- 3.13 Calculation of included angles from bearing. Problems on effect of local attraction.
- 3.14 Closing errors, plotting a traverse by included angles and deflection angles method.
- 3.15 Error, precautions and adjustments in compass surveying.

## **CHAPTER- 4 : PLANE TABLE SURVEYING**

- 4.1 General Introduction.
- 4.2 Purpose of plane table surveying. Equipments used in plane table surveying, plane table. Alidade - plane and telescopic.
- 4.3 Operation of plane table, centering, leveling, orientation. Important precautions while plane table surveying.

- 4.4 Introduction about methods of plane table survey : (i) Radiation (ii) Intersection (iii) Traversing (iv) Resection.
- 4.5 Advantages and disadvantages of plane table surveying.

## **CHAPTER- 5 : COMPUTATION OF AREAS AND VOLUMES**

- 5.1 Computation of areas and volume of Irregular shapes by Simpson's Rule and by Bowdich Rule.
- 5.2 Calculation of Volume of Heaps.

### **INSTRUCTIONAL STRATEGIES:**

Lecture Method  
Demonstration  
Field Practice

### **PRACTICAL**

**Practical Code: 239221 (39)**  
**No. of Hours/periods: 32**

### **LIST OF PRACTICALS / TUTORIALS:**

1. To lay a chain line in the field.
2. To range a chain line by 3 ranging rod system and checking it with the Line ranger.
3. To take offsets by tape on either side of a chain line by swinging method and its booking.
4. To take offsets by Open cross staff and checking its accuracy by Optical square.
5. To conduct a chain triangulation survey of an area by erecting - (a) Base line (b) Check line (c) Tye line and its plotting.
6. To Perform the temporary adjustments of a Prismatic compass and taking bearings of given lines.
7. To conduct compass traverse survey for closed traverse, taking fore bearing and back bearing of each line and calculation of Included angles.
8. To conduct a plane table survey by - (i) Radiation method (ii) Intersection method (iii) Traversing method and calculation of area by various method.

### **LEARNING RESOURCES:**

#### **(a) Reference Book:**

Sl.No.	Title	Author, Publisher, Edition & Year
1.	Surveying & Leveling, Vol-I	Kanetkar & Kulkarni
2.	Advance Surveying	Alam chand
3.	Surveying, Vol-I	B.C. Punamia
4.	Mine Surveying, Vol-I & II	S. Ghatak
5.	Surveying, Vol-I	Arora

#### **(b) Others :**

- VCDs
- Video Cassettes
- Learning Packages

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**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:**

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

**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:**

**(a) Reference Books**

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

**(b) Others:**

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

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**CHHATTISGARH SWAMI VIVEKANAND TECHNICAL  
UNIVERSITY, BHILAI (C.G.)**

**SEMESTER** : **II**  
**SUBJECT TITLE** : **INDUSTRIAL TRAINING**  
**CODE** : **239222 (39)**  
**BRANCH/DISCIPLINE** : **MINING AND MINE SURVEYING**

**RATIONALE:**

Industrial Training is one of the most essential components for a diploma graduate in Mining and Mine Surveying. The sole purpose of industrial training is to expose the students to “real life” situations. Different aspect of mining such as geology, exploration, selection of method of working, selection of machines for mining, environmental controls and measures, safety in mines and various statutory provisions can only be understood when the students are exposed to different mine workings. Students will cover different coal and metal mines both underground and opencast in such a way that at the end of the completion of diploma programme, they are conversant with different mining conditions. Industrial training also opens avenues of new learning to the students and apply them during their project and industrial training presentations.

**DISTRIBUTION OF MARKS AND DURATION:**

<b>Sl. No.</b>	<b>Items</b>	<b>Duration</b>	<b>Marks</b>
1	<i>Preparation of report format</i>	2 Hrs	10
2	Industrial Training	08 Weeks	40
3	Report Writing	01 week	20
4	Report Presentation	-	20
5	Seminar	-	10
6	End of the semester exam viva voce	-	20
<b>TOTAL</b>		<b>09 Weeks</b>	<b>120</b>

Before going for training, the students will prepare various formats for data collection based on the topic of training assigned to them. The students will be given specific assignments for the period of training. During the course of training students will complete weekly report, assignments and keep weekly attendance updated. On completion of training each student will submit a report of training and make a presentation before the group of students. Teacher assessment will be done during the training, on presentation of training and at the end of semester examination. A seminar will be organized on specific topics identified by the teacher and the students will present their experiences earned during the training on the specific tasks. End of the semester examination will be an external exam.

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