

**I.I SEMESTER SYLLABUS**  
***COMMUNICATING EFFECTIVELY IN ENGLISH***

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3 – 2

**Rationale**

Interpersonal communication is a natural and necessary part of organizational life. Yet, communicating effectively can be challenging because of our inherent nature to assume, overreact to and misperceive what actually is happening. Poor communication or lack of communication is often cited as the cause of conflict and poor teamwork. In today's team-oriented workplace, managing communication and developing strategies for creating shared meaning are crucial to achieving results and creating successful organizations. The goal of the ***Communicating Effectively in English*** course is to produce civic-minded, competent communicators. To that end, students must demonstrate oral as well as written communication proficiency. These include organizational and interpersonal communication, public address and performance.

**Objectives of Course in Communicating Effectively in English for the First Year (I & II Semesters) are:**

- \* *Understanding how communication works*
- \* *Gaining active listening and responding skills*
- \* *Understanding the importance of body language*
- \* *Acquiring different strategies of reading texts*
- \* *Increasing confidence by providing opportunities for oral and written expressions*

**DETAILED CONTENTS FOR FIRST SEMESTER****I SEMESTER****48 HRS****1. COMMUNICATION SKILLS 6 hrs**

- 1.1 Verbal and Non-verbal Communication
- 1.2 Process of Communication
- 1.3 Barriers to Communication; Overcoming Strategies
- 1.4 Listening and Speaking Skills and Sub-Skills
- 2. Spoken English-Introduction, Features of Spoken English

**(Note: This module is only for practice. This should not be included in the final examination)**

**2. DEVELOPING ORAL COMMUNICATION SKILLS****8 hrs**

- 2.1 Greeting, Starting a Conversation
- 2.3 Introducing Oneself
- 2.4 Introducing Others
- 2.5 Leave Taking
- 2.6 Thanking, Wishing Well
- 2.7 Talking about Oneself
- 2.8 Talking about Likes and Dislikes

**3. GRAMMAR AND USAGE****12 hrs**

- 3.1 Punctuation
- 3.2 Articles-a, an, the
- 3.3 Framing Questions
- 3.4 Verbs-Classification: Main Verb, Auxiliary Verb, Transitive & Intransitive Verbs, Phrasal Verbs
- 3.5 Word Formation

**4. WRITING SKILLS****10 hrs**

- 4.1 Writing Paragraphs
- 4.2 Picture Composition

**5. READING SKILLS****12 hrs**

- 5.1 Vocabulary Enhancement
- 5.2 Techniques of Reading: Skimming, Scanning, Intensive and Extensive Reading

**NOTE: The Reading Skills of the learners (along with vocabulary enhancement) will be through reading thematic articles/essays and/or stories.**

## **Section I**

### **Theoretical Concepts of Communication Skills**

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## **Section II**

### **Oral Communication Skills**

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### **Skills**

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Unit 5	A Guide to Gas Powered RC Cars	11
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**Section IV****Writing Skills**

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**Section V****Grammar and Usage**

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## 1.2 BASIC DESIGN AND COMPOSITION -I

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### RATIONALE

The subject deals with the fundamentals of the designing processes and composition which involves thinking, perceiving, analyzing, symbolizing, synthesizing and thus organizing for the intended purpose; all aspects like balance, unity, proportion, harmony, rhythm, variety, relation, volume, weight, space line, shape, form, color and texture are dealt in this subject. The skills learnt through this course will be utilized for preparing design oriented layout and composition. This is primarily a practical based course.

Teachers are expected to provide relevant theoretical inputs on various aspects as well as demonstrate certain skills for enabling the students to do the given exercises with creative ideas and skills.

### DETAILED CONTENTS

#### PRACTICAL EXERCISES

1. Exercise – I
  - 1.1 Introduction to basic design and composition
    - a) What is design?
    - b) Types of design
    - c) What is composition?
    - d) How to compose?
    - e) Elements of design and composition
    - f) Principles of design and composition
  - 1.2 An exercise in black and white design based on dots and lines (horizontal, vertical, diagonal) in various proportions (2 exercises, size  $\frac{1}{4}$  sheet)
2. Exercise – II
  - 2.1 Preparation of a black and white design all over pattern with regular geometrical shapes in various proportions (2 exercises, size  $\frac{1}{4}$  sheet)
  - 2.2 Preparation of a black and white design all over pattern with irregular forms to be repeated in various proportions (2 exercises, size  $\frac{1}{4}$  sheet)
3. Exercise – III
  - 3.1 Introduction to colors
    - a) What is colour?

- b) Qualities or attributes of colour (hue, value and intensity)
- c) Different types of colors (water colors, oil pastel and poster colours etc.)
- d) Warm colors/cool colors
- e) Advancing and receding colors

### 3.2 Preparation of colored

charts a) Primary

colors

b) Secondary

colors c) Tertiary

colors

d) Quaternary colors

e) Warm colors and cool colors

f) Study of tonal values (size -full sheet)

### 4. Exercise – IV

Preparation of a composition with regular and irregular geometrical shapes in color (2 exercises, size ¼ sheet)

Note: Teacher will be teaching 1.1 and 3.1 as the theoretical instructions for exercise – I and exercise - III

### **INSTRUCTIONAL STRATEGY**

It is expected that teachers must be teaching relevant theory to support the practical exercises while conducting practical classes.

### **RECOMMENDED BOOKS**

1. Form, Space and Vision by Graham Collier
2. Meaning of Art by Herbert Reed
3. Creativity by Don Barron

### 1.3 SCALE AND GEOMETRICAL DRAWING - I

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#### RATIONALE

Scale and geometry is an essential requirement for any drawing. To represent an object on paper, the scale and geometry is required for the correct proportion, shape, form, values etc of that particular object

#### DETAILED CONTENTS

#### PRACTICAL EXERCISES

Practice in preparing the following drawings:

1. Plane geometry lines, triangles, quadrilateral, polygons etc.
2. Ratio and proportion
3. Scales: plan and diagonal
4. Circles
5. Scale drawing, study of scale drawing from a given sketch of furniture like table, chair, stool, desk etc.

#### RECOMMENDED BOOKS

1. The New Geometrical Drawing Plane and Solid by RL Gupta
2. Bharti Scale Drawing

## 1.4 LETTERING AND TYPOGRAPHY - I

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### RATIONALE

Lettering and typography is an important part of applied art. A student is supposed to know the art of writing of alphabets in different shapes and he must also have the knowledge of typography. It communicates the consumer with its various character. This skill is necessary to be taught to students to become good artist and designer

This subject will develop skills in free hand lettering and typography; construction of letters, upper and lower letters, thick and thin strokes, normal bold and extra bold letter, straight and italic letters and spacing

### DETAILED CONTENTS

#### PRACTICAL EXERCISES

##### 1. Exercise – I

What is lettering and typography?

Introduction to various types of style, their names and character, visual and mechanical spacing

##### 2. Exercise – II

- i) Drawing of Helvetica compact type face on graph paper in pencil
- ii) Drawing of sarif (Roman) type face on graph paper in pencil

##### 3. Exercise – III

Preparing free hand lettering in Helvetica compact type on half imperial art card sheet with black ink

- i) ABC .... Z (Upper case) and numerals 1 to 10
- ii) abc..... z (lower case) and numerals 1 to 10
- iii) Introduction to Devnagri script d [A x -----

##### 4. Exercise – IV

Preparing finished slogans/ quotations in English and Hindi in black ink (½ imperial sheet) (two sheets)

#### RECOMMENDED BOOKS

1. Basic Typography by Biggs, John R., London Faber and Faber, 1968
2. Typographic Design by Roberts, Raymod, London, Earnest Benn, 1966.



## 1.5 STILL LIFE AND SKETCHING - I

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### RATIONALE

Drawing (still life) is an essential requirement for any graphic designer. To represent an object on paper, the designer is required to have knowledge and skills related to the correct proportion, shape, form, values etc of that particular object.

The purpose of sketching is to develop skills of free hand sketching to enable the students to draw correct postures and proportions of different objects coming across in life.

### DETAILED CONTENTS

#### PRACTICAL EXERCISES A.

##### Still Life

- 1 Objects drawing in pencil shading for the following objects ( $\frac{1}{2}$  imperial sheet)
  - geometrical shapes
  - bottles
  - plates
  - bowl,
  - books,
  - box
  - vase

A variety of objects which we see and use in our everyday life should be displayed for the still life study and drawing (Maximum 3 objects; Exercises required 8 Nos)

#### B. Sketching

- 2 Sketching of trees huts in pencil/charcoal outline
- 3 Sketching of flowers/foilage in pencil/charcoal with light and shade
- 4 Sketching of antique in museums in pencil with light and shade

- Note:
- I. Introduction of materials, tools and methods of still life and sketching
  - II. Students should be taken for outdoor sketching to do the kind sketching mentioned above
  - III. Students are expected to submit 30 selected exercises at the end of first semester for internal assessment

**RECOMMENDED BOOKS**

1. Graphic Design and Reproduction Techniques by Peter Croy.
2. The Language of Graphics by Thomes and Hudson.
3. Symbol Source Book by Henry D. Reyfess.

## 1.6 HISTORY OF INDIAN ART AND APPRECIATION

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### RATIONALE

This subject of history of Indian art and appreciation is very important for the students concerning with applied art and craft. They should know about the brief out lines of Indian art and its appreciation.

### DETAILED CONTENTS

1. Kala (2)

The origin of the word Kala. Definitions – Plato, Rabindra Nath Tagore, Tolstoy – Ruskin

2. Pre Historic Age (12)

Palaeolithic, Mesolithic, Neolithic. The quest of pre historic painting and important places of pre-historic art in India. Subject matter and style of pre-historic art. The importance and peculiarities of pre- historic art. The technique of pre-historic painting

3. Pre Buddha Period (16)

Jogimara Cave – paintings of Jogimara caves, importance of jogimara

cave  
painting  
s

Buddha  
Period

Gandhara school – sculpture of gandhara school, specialities of gandhara sculpture, Ajanta, situation of Ajanta, discovery and renovation of Ajanta caves. The technique of Ajanta murals – subject matter of Ajanta caves – paintings of Ajanta cave No. 9, 10, 16, 17 and 19th caves. The characteristics of Ajanta painting, linear beauty, expression of sentiments, colour scheme, variety of life, expression of emotions through, hand postures, women in ideal form, decoration, ornamentation, composition of hair style, battle scenes, symbolic paintings, depiction of nature, birds and animals

4. Pahari school (10)

Basohli painting – subject matter of basohli painting, characteristic of

basohli

painting, definition of eyes, borders, colour scheme, gold and silver colour – land scapes, symbolic depiction of trees, garments, architectural decoration, human figures, expression through postures of hands, romantic scenes, paintings based on folk art

5. Art appreciation (8)

5.1 Six limbs of Indian painting

5.2 Elements of art: line, form, colour, texture, shape, composition, balance, rhythm

5.3 Subjective and objective art

5.4 Principles of art appreciation

### RECOMMENDED BOOKS

1. Meaning of Art by H Read
2. A Brief History of Indian Painting by LC Sharma
3. Indian Painting by Percy Brown
4. Komal Kala by Kanwar Jit Singh Kang
5. Panorama of Indian Painting – Publication Division, Ministry of Information and Broadcasting, Government of India
6. Primitive Art by Leon Hard Adam; Penguin Books
7. Famous Artist and their Models by Thomas Craven
8. A History of Fine Arts in India and West by Edith Tomory; Orient Longman
9. Art Through the Ages by Gardner's Sixth Edition
10. Art in Every day Life by Harriet Goldstein and Vetta Goldstein; Oxford and IBH Publishing Co., New Delhi
11. A history of Art by Thomes and Hudson

## 1.7 GENERAL WORKSHOP PRACTICE – I & II

### **RATIONAL**

Manual abilities to handle engineering materials with hand tools need to be developed in the students. They will be using different types of tools/equipment in different shops for fabrication purposes. Besides developing the necessary skills, the students will appreciate the importance of quality and safety measures.

### **DETAILED CONTENTS**

- Note:**
1. The students are supposed to come in proper workshop dress prescribed by the institute. Wearing shoes in the workshop(s) is compulsory. Importance of safety and cleanliness, safety measures and upkeep of tools, equipment and environment in each of the following shops should be explained and practiced. The students should prepare sketches of various tools/jobs in their practical Notebook.
  2. The shops to be offered in I and II semester may be decided at polytechnic level
  3. The students should be taken to various shops (not included in the curriculum) in the polytechnic in batches and should be given knowledge of the various machines/equipment. Such as machine shop, foundry shop, sheet metal shop, etc.
  4. Students of Diploma in Chemical Engineering will undergo Shops 1 to 6 only

Following seven shops are being proposed:

1. **Carpentry shop**
2. **Fitting and plumbing shop**
3. **Welding shop**
4. **Paint shop**
5. **Forging and sheet metal shop**
6. **Electric shop**
7. **Electronics Shop**

## **1. Carpentry Shop**

- 1.1 Introduction to various types of wood, carpentry tools - their identification with sketches. Different types of wood joints.
- 1.2 Simple operations viz. hand sawing, marking, planing
- 1.3 Introduction and sharpening of wood working tools and practice of proper adjustment of tools
- 1.4 Demonstration and use of wood working machines i.e. band saw, circular saw, rip saw, bow saw and trammels. Universal wood working machine and wood turning lathe
- 1.5 Making of various joints (Also draw the sketches of various wooden joints in the Practical Note Book)
  - a) Cross lap joint
  - b) T-lap joint
  - c) Corner lap joint
  - d) Mortise and tenon joint
  - e) Dovetail joint
  - f) Prepare a file handle or any utility items by wood turning lathe

## **2. Fitting and Plumbing Shop**

- 2.1. Introduction to fitting shop, common materials used in fitting shop, description and demonstration of various types of work-holding devices and surface plate, V-block
- 2.2 Demonstration and use of simple operation of hack-sawing, demonstration of various types of blades and their uses
- 2.3 Demonstrate and use of all important fitting shop tools with the help of neat sketches (files, punch, hammer, scraper, taps and dyes etc.)
- 2.4 Introduction of chipping, demonstration on chipping and its applications.  
 Demonstration and function of chipping tools.
- 2.5 Description, demonstration and practice of simple operation of hack saw, straight and angular cutting.

- 2.6 Demonstrations, description and use of various types of blades - their uses and method of fitting the blade.
- 2.7 Introduction and use of measuring tools used in fitting shop like: Try square, Steel rule, Measuring Tape, Outside micrometer, Vernier Caliper and Vernier Height Gauge
- 2.8 Description, demonstration and practice of thread cutting using taps and dies
- 2.9 Plumbing: Descriptions and drawing of various plumbing shop tools, Safety precautions. Introduction and demonstration of pipe dies, Pipe holding devices, Demonstration and practice of Pipe Fittings such as Sockets, Elbow, Tee, Reducer, Nipple, Union coupling, plug, Bend, Float valves and Taps

Job: Cutting and filing practice on a square of 45 X 45 mm<sup>2</sup> from MS flat

Job: Angular cutting practice of 45<sup>0</sup> (on the above job)

Job: Preparation of stud (to cut external threads) with the help of dies (mm or BSW)

Job: Drilling, counter drilling and internal thread cutting with Taps

Job: H-Fitting in Mild steel (ms) square

Job: Pipe cutting practice and thread cutting on GI Pipe with pipe dies

### **3. Welding Shop**

- 3.1 Introduction to welding, type of welding, common materials that can be welded, introduction to gas welding equipment, types of flame, adjustment of flame, applications of gas welding. Welding tools and safety precautions
- 3.2 Introduction to electric arc welding (AC and DC), practice in setting current and voltage for striking proper arc, precautions while using electric arc welding. Applications of arc welding. Introduction to polarity and their use
- 3.3 Introduction to brazing process, filler material and fluxes; applications of brazing. Use of solder. Introduction of soldering materials
- 3.4 Demonstrate and use of the different tools used in the welding shop with sketches. Hand shield, helmet, clipping hammer, gloves, welding lead, connectors, apron, goggles etc.

### 3.5 Demonstration of welding defects and Various types of joints and end preparation

Job: Preparation of cap joint by arc welding

Job: Preparation of Tee joint by arc welding

Job: Preparation of single V or double V butt joint by using Electric arc welding

Job: Brazing Practice. Use of Speltor (on MS sheet pieces) Job: Gas welding practice on worn-out and broken parts

## 4. Paint Shop

Introduction of painting shop and necessity. Different types of paints. Introduction of powder coating plant and their uses.

Job: Preparation of surface before painting such as cleaning, sanding, putty, procedure and application of primer coat, and painting steel item.

Job: Painting practice by brush on MS sheet

Job: Practice of dip painting

Job: Practice of lettering: Name plates / Sign board

Job: Polishing and painting on wooden and metallic surfaces

Job: Practical demonstration of powder coating

## 5. Forging and sheet metal shop

Introduction to forging, forging tools, tongs, blowers/pressure blowers, hammers, chisels, punch, anvil, swag-block etc. Forging operations.

5.1 Forge a L hook or Ring from MS rod 6 mm  $\varphi$

5.2 Forge a chisel and give an idea of hardening and tempering

5.3 Lap joint with forge welding

5.4 High Strength Steel (HSS) tools – forging of Lathe shaper tools like side-tools and V-shape tools

5.5 Making sheet metal joints

5.6 Making sheet metal tray or a funnel or a computer chassis

5.7 Preparation of sheet metal jobs involving rolling, shearing, creasing, bending and cornering



5.8 Prepare a lap riveting joint of sheet metal pieces

## **6. Electric Shop**

6.1 Demonstration of tools commonly used in Electric Shop

6.2 Safety precautions , electric shock treatment

6.3 Demonstration of Common Electric material like: wires, fuses, ceiling roses, battens, cleats and allied items

6.4 Demonstration of Voltmeter, Ammeter, Multimeter and Energy meter

Job: Wiring practice in batten wiring, plastic casing-capping and conduit

Job: Control of one lamp by one switch

Job: Control of one lamp by two switches Job: Control of one bell by one switch Job: Assemble a Tube light

Job: Dismantle, study, find out fault, repair the fault, assemble and test domestic appliances like electric iron, electric mixer, ceiling and table fan, tube-light, water heater (geyser) and desert cooler

Job: Laying out of complete wiring of a house (Single-phase and Three- phase)

## **7. Electronics Shop**

7.1 Identification, familiarization, demonstration and use of the following electronic instruments:

a) Multi-meter digital

b) Single beam simple CRO , function of every knob on the front panel

c) Power supply , fixed voltage and variable voltage, single output as well as dual output.

7.2 Identification , familiarization and uses of commonly used tools; active and passive components; colour code and types of resistor and potentiometers

7.3 Cut, strip, join and insulate two lengths of wires/cables (repeat with different types of cables/ wires)

7.4 Demonstrate and practice the skill to remove components/wires by unsoldering

7.5 Cut, bend, tin component, leads, inserts. Solder components e.g. resistor, capacitor, diodes, transistors on a PCB

7.6 Wiring of a small circuit on a PCB/tag strip involving laying, sleeving and

use of identifier tags

- 7.7 Demonstrate the joining (or connecting) methods/mounting and dismantling method, as well as uses of the items mentioned below:
- a) Various types of plugs, sockets, connectors suitable for general-purpose audio video use. Some of such connectors e.g. 2 and 3 pin mains plug and sockets, Banana plugs, sockets and similar male and female connectors and terminal strips.
  - b) Various types of switches such as: normal/miniature toggle, slide, push button piano key, rotary, SPST, SPDT, DPST, DPDT, band selector, multi-way Master Mains Switch.
- 7.8 Exposure to modern soldering and de-soldering processes (Field visits)
- 7.9 De-solder pump, remove and clean all the components and wires from a given equipment, a PCB or a tag strip.