2.1 COMMUNICATING EFFECTIVELY IN ENGLISH
II SEMESTER SYLLABUS

L T P
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 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.

II SEMESTER 48 hrs

1. LISTENING COMPREHENSION 4hrs

1.1 Locating Main Ideas in a Listening Excerpt
1.2 Note-taking

2. ORAL COMMUNICATION SKILLS 14 hrs

2.1 Offering-Responding to Offers
2.2 Requesting-Responding to Requests
2.3 Congratulating
2.4 Expressing Sympathy and Condolences
2.5 Expressing Disappointments
2.6 Asking Questions-Polite Responses
2.7 Apologizing,
Forgiving
2.8 Complaining
2.9 Persuading
2.10 Warning
2.11 Asking for and Giving Information
2.12 Giving Instructions
2.13 Getting and Giving Permission
2.14 Asking For and Giving Opinions

3. GRAMMAR AND USAGE **10hrs**

3.1 Prepositions
3.2 Pronouns
3.3 Determiners
3.4 Conjunctions
3.5 Question and Question Tag
3.6 Tenses (Simple Present, Simple Past)

*One chapter revising the topics discussed during the first semester. (Punctuation, Articles, Framing questions, Verbs, Word formation)

4. WRITING SKILLS **10hrs**

4.1 Writing Notice
4.2 Writing Circular
4.3 Writing a Memo
4.4 Agenda for a Meeting
4.5 Minutes of the Meeting
4.6 Telephonic Messages

* Writing a paragraph will be a continuous exercise through out the session. (Writing will be based on verbal stimuli, tables and graphs.)

5. READING SKILLS **10hrs**

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.

CONTENTS

Reading Skills

Writing Skills

Grammar and Usage

2.2 BASIC DESIGN AND COMPOSITION - II

L	T	P
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RATIONALE

This subject deals with the fundamentals of designing processes which involves thinking, perceiving for the intended purpose. All aspects like balance, unity, proportion, harmony, rhythm, variety, relation, mass, volume, weight, space, line, shape, form, colour and texture are dealt in this subject.

The skills learnt through this course will be utilized for preparing design oriented layouts. This is primarily a class room based course. Teachers are expected to provide relevant theoretical inputs on various aspects as well as demonstrate certain skills for enabling the students to carry out given exercises with creative ideas and skills

DETAILED CONTENTS

PRACTICAL EXERCISES

1. Preparation of a design all over pattern suitable for textiles: design can be floral
   /geometrical/ naturalistic etc (two exercises; size ¼ sheet)

2. Preparing a design, symbolic and abstract form, to be finished in colour (two exercises; size ¼ sheet)

3. Introduction to optical illusion. Make allover pattern design for wrapping gifts in colour (two exercises; size ¼ sheet)

4. Preparation of a craft oriented design suitable for pots, glass; wall hangings etc
   (two exercises; size ¼ sheet)

5. Exterior and interior murals with use of different materials (two exercises) size:
   ½ imperial)

6. Preparing a design based on geometrical shapes, paper cut and paste (two exercises; size ½ sheet)

RECOMMENDED BOOKS

1. Form, Space, Vision by Graham Collier

2. Creativity by Don Barron

3. Meaning of Art by H Read

2.3 SCALE AND GEOMETRICAL DRAWING - II

L	T	P
-	-	6

RATIONALE

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

DETAILED CONTENTS

Practical Exercises

Practice in preparing the following drawings:

1. Inscribe and describe circle circumscribed figures

2. Solid geometry – simple position of cube, cones, cylinder, prism and quardrilateral in first angle

3. Scale Drawing: Front elevation, side elevation, plan and sectional plan

4. Simple parallel and angular perspective based on geometrical solid shapes like cube, prism, pyramid, cylinder etc.

RECOMMENDED BOOKS

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

2. Scale by Bharti

3. Engineering Drawing by RK Dhawan

4. Engineering Drawing by PB Sikka

2.4 LETTERING AND TYPOGRAPHY-II

L	T	P
-	-	6

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

Note: Visits to printing presses may be arranged for practical knowledge in off-set printing, letter press and screen printing and hand on experience on working of printing machines

DETAILED CONTENTS

PRACTICAL EXERCISES

1. Exercise I

   Introduction to stylish type brush and pen script (2 exercises, size ½ sheet)

2. Exercise II

   Preparing finished chart in stylish lettering and typography (2 exercises, size ½ sheet)

3. Exercise III

   Designing of trade mark, symbol, logo and trade names in black and white and also in colours (2 exercises, size ¼ sheet)

4. Exercise IV

   Preparing a typographical layout with self explanatory words like speed, fire, music and furniture etc (2 exercises, size ¼ sheet)

5. Exercise V

   Designing of a simple letter head, visiting cards and envelops (3 exercises)

6. Exercise VI

Typographical design for a wrapper/packaging in English/Devnagari
(2 exercises, size ½ sheet)

RECOMMENDED BOOKS

1. Basic Typography by Biggs, John R., London Faber and Faber, 1968

2. Typographic Design by Roberts, Raymod, London, Earnest Benn, 1966.

2.5 STILL LIFE AND SKETCHING - II

L	T	P
-	-	6

RATIONALE

Drawing (still life) is an essential requirement for any graphic designer. To represent an object on paper, the designer has to require the correct proportion, shape and form etc of that particular object.

The purpose of sketching is to develop skills of freehand sketching to enable the students to draw correct postures and proportion of different objects, human figures/ animals coming across in daily life

DETAILED CONTENTS

PRACTICAL EXERCISES

A. Still Life

1. Study of fruits and vegetables (½ imperial sheet) in pencil and colours

2. Study of objects like helmet, pressure cooker, electronic goods, etc in pencil/coloured crayons/oil pastels with light and shade sheet, exercises required 8 numbers)

Note: i) The objects required for the still life drawing should be provided, in different settings
ii) The teacher is supposed to be resourceful regarding the objects the still life drawing
iii) They should encourage students to (prepare) draw whenever and ever they go and have time to do so. They should carry a small sketch book always whenever they go out.

B. Sketching

3 Sketching of buildings/monuments with emphasis on visual perspective

4 Time sketching of human figures in groups in pencil and pen & ink

5 Sketching of animals and birds in pencil and pen & ink

6 Make a composition in pen & ink with reference to above studies i.e. a scene of a fair and a scene of a festival in front of a temple etc

Note: Students are expected to submit at least 30 selected exercises at the end of the 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 Hennry D. Reyfess

2.6 SCULPTURE AND STUDY OF OBJECTS – I

L	T	P
-	-	6

RATIONALE

The aim of the subject is to familiarise the student to the fundamental of making sculptures. All assignments should be designed to understand problems of volume, weight, clay form in space etc as against rendering on flat, two dimensional surfaces. Adequate technical skills may be provided depending on the formation available

DETAILED CONTENTS

Practical Exercises

1. Handling of clay and techniques to make a sculpture

2. Clay modelling in relief on given subject from life and nature such as bird, animal, flower, leaf etc

3. Clay modelling in round on given subject of life and nature, field animals

4. Clay modelling of simplified human figures, birds, animals etc

5. Colouring of sculpture

RECOMMENDED BOOKS

1. Symbol Source Book by Hennry D. Reyfess

2. Artists and Illustration Encyclopaedia by John Quick

2.7 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, planning

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^2 from MS flat

Job: Angular cutting practice of 45^0 (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 φ

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 trey 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/wiresby 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.