

SHRIMATI INDIRA GANDHI COLLEGE

TIRUCHIRAPPALI-2.

(Nationally Re-Accredited At 'A' Grade by NAAC)

SYLLABUS

**CERTIFICATE COURSE IN APPAREL
ENRICHMENT
(2009 onwards)**

THEORY
PAPER - I
VALUE ADDED TEXTILES

UNIT - I

Evolution of Clothing – Introduction to Textiles – Beginning of Dress

- Development of costumes in ancient India.

UNIT - II

Definition and classification of embroidery → Selection of Textile materials, Needles and threads for embroidery, Preparation of the sewing machine for embroidery.

UNIT - III

Hand embroidery stitches - Stem, Chain, Buttonhole, Herringbone, Bullion Knot, French Knot, Satin, Long and short, Feather, Seed, Simple Cut Work, Spider Web, Eyelet embroidery, Sindhi Stitch.

Other Embroidery stitches - Running Thread and Needle cording, Granite, Lace work and cut work.

UNIT – IV

Kundan Work

History – Study on Kundan Work – Process of Kundan

Work – Application of Kundan work in different materials.

UNIT – V

**Application of Kundan Stone work in accessories such as Bags,
Shoes, Hat, Belt, Watch and jewelleryes.**

**Application of Kundan Stone work in interior decoration such as
Window Glass, Earthen ware, Hangings on Curtains, Door Hangings etc.,**

Reference Books:

1. Indian Embroidery – Jamica Brij Bhushan, Publications dn-Ministry of Information and Broadcasting.
2. "Household Textiles and Laundry Work – Durga Deulkar, Atma Ram and Sons- 1988.
3. 100 Embroidery – Madura Coats
4. ANCC – Madura Coats.

Practical – I

EMBROIDERIES

1. Study on the Traditional Embroideries of India.
- ✓ 2. Collection of Traditional Motifs for embroideries.
3. Use of Traditional Motifs in Latest Fashion.
- ✓ 4. Making of samples for 25 types of embroideries.
- ✓ 5. Preparation of album with the prepared samples.
- ✓ 6. Application of the embroidery stitches in various Garments.
7. Application of Embroidery work in Accessories.
8. Application of Embroidery work in Interior decoration.

Practical – II

KUNDAN STONE WORK

1. Study on Traditional Kundan Stone Work.
2. Collection of Traditional Motifs for Kundan Stone Work.
3. Use of Traditional Motifs in Latest Fashion.
4. Preparation of samples ^{book} in the following work

by using

- a. Kundan stone work
- b. Cut beads and chamkies
- c. Zardhosi combined with stones, beads etc.,
- d. Different types of Hangings

- ✓ 5. Preparation of Album with prepared samples.
6. Application of various kundan styles in different types of garments.
7. Application of Kundan Stone work in Accessories.
8. Application of Kundan work in Interior decoration.

IECD
BHARATHIDASAN UNIVERISTY, TIRUCHIRAPPALLI-23
CERTIFICATE COURSE
SYLLABUS

PAPER-1-GENERAL LABORATORY TECHNIQUES-CPL01

PAPER-2-LABORATORY TECHNIQUES IN SCIENCE-CPL02

- **LABORATORY TECHNIQUES IN BIOLOGY-CPL02**
- **LABORATORY TECHNIQUES IN CHEMISTRY -CPL02**
- **LABORATORY TECHNIQUES IN PHYSICS - CPL02**

PAPER-3-LABORATORY TECHNIQUES IN SCIENCE (PRACTICAL)-CPL03

GENERAL LABORATORY TECHNIQUES-CPL01

Objectives

1. To know about the organization and design of laboratories
2. To understand the Management of the Laboratories, Efficient Communication/ Files and records
3. To learn Scientific Reporting Electricity and Gas Hazards

Unit-I

Organization and Design of Laboratories

- 1.1 Introduction-Essential requirements of a typical laboratory, Laboratory space, Design of laboratories, Main laboratory in relation to other rooms. Services- Ventilation, Lighting, Heating, Fume cupboards, Security and safety.
- 1.2 Preparation Room- Importance of preparation room, preparation room design, storage in the preparation room. Microbiological preparation room-Sterilizing equipment, Preparation area.
- 1.3 Store-Flow of materials, arrangement of stores, Environmental considerations, Flexibility, Science stores and colleges. Safety provisions- Labels, Metal chest solvent stores.

Unit-II

Management of the Laboratories

- 2.1 Introduction- Organization of practical work, Day to day cleaning, sterilization disposal of wastes. Inspection and maintenance of laboratory
- 2.2 Colour coding services - Gas leaks - production from Vandalism - arranging stock - ordering procedure role of purchase committee - imports value added tax – receipts of goods-Accounting-Records of expenditure controlling budget petty cash, imprest money.

Unit – III

Efficient Communication/ Files and records

- 3.1 Communication - Oral, written, memoranda, letters. Reports- Formal, informal. Channels of communication.
- 3.2 Files and Records - Sources of information Filing systems - filing of printed and written material, special files, recording loans, information about equipment, miscellaneous records.

Unit-IV

Scientific Reporting

4.1 Introduction- keeping a notebook-error-results- use of graphs. Components of a computer- Overall function-application packages-data output.

4.2 Information distribution-typewriters-duplicating processes-copying-auxiliary methods-facsimile.

Unit-V

Electricity and Gas Hazards

5.1 Electricity Hazards in the laboratory- gas hazards- High pressure gas hazards, detection and handling of gas leakage, Low pressure gas hazards.

5.2 Fire hazards-Precautions for fire prevention- fire alarms, fire escapes, fire battery. Extinguishing a fire- fire extinguisher, use of fire extinguisher

5.3 Radiation and chemical hazards-radiation- ionising and non-ionising and chemical hazards- handling of chemicals, transport of bulk chemicals, transfer from large containers. Hygiene

Reference:

1. Chemistry in the laboratory – *joa beran*
2. Analytical Chemistry – *R.Gopalan, P.S.Subramanian, K.Rengarajan*
3. Laboratory manual for principles of general chemistry- *J.A.Beran*

LABORATORY TECHNIQUES IN SCIENCE (PRACTICAL)-CPL03

GENERAL LABORATORY TECHNIQUES (PRACTICAL)-CPL03

1. Study of design and features of a laboratory
2. Study of design and infrastructure of a preparation room of a laboratory
3. Study of design and organization of laboratory store
4. Study of the regular duties of laboratory staff
5. Study of procedure regarding purchase of chemicals
6. Study of procedure regarding purchase of alcohols
7. Procedure for stock verification and maintenance of apparatus
8. Basic aspects of electrical maintenance
9. Supply of gas, electricity and water in a laboratory
10. Identification of compressed gases and study of their handling and storage
11. Fire safety measures in a laboratory
12. Classifying and handling of hazardous chemicals
13. Study of sterilization and safe disposal methods in biological materials
14. Disposal of unserviceable and obsolete items
15. Disposal of chemical waste
16. Attending to emergency situations
17. Group interaction- Laws, regulations and related issues

LABORATORY TECHNIQUES IN SCIENCE

LABORATORY TECHNIQUES IN BIOLOGY-CPL02

INTRODUCTION TO BIOLOGY LABORATORIES AND MICROSCOPY, STAINING AND CULTURE TECHNIQUES

OBJECTIVES

1. To know about collection and preservation of biological specimens
2. To understand the knowledge about ancillaries of biology laboratory, slide preparation
3. To learn the fixation and staining techniques

UNIT-I

An Overview of Biology Laboratories and Ancillaries of Biology Laboratory

- 1.1** Introduction-General Features of Biology Laboratories-Components of Biology Laboratories, Main, laboratory Preparation and store room.
- 1.2** Growing Rooms and Green Houses-Animal House-Aquarium and Vivarium-Museum and Herbarium-other Ancillaries of Biology Lab - Botanical Garden, Photographic darkroom, Experimental Farms and Germinating Bed.

UNIT-II

Equipment Used in Biology Laboratories and Collection and Preservation of Biological Specimens

- 2.1** Introduction-Identification of Apparatus-Equipment for Heating, Sterilization, Distillation, Microscopy and Weighing – Microbiological safety Cabinet-Centrifuges-Microtomes and Knives-colorimeter-pH meter-Incubator
- 2.2** Distinguishing features of Main Phyla in the animal and plant kingdoms-Sources of Specimens –Identification of specimens and Use of Keys-Preservation of plant and animal Specimens- arrangement of Museum and Herbarium.

UNIT-III

Herbarium and Types of Microscopes

- 3.1** Introduction-Collection Process-Pressing of plants-Keeping Wet Material-Drying, Mounting and Labelling of Specimen-Storing of Herbarium Sheets and ethics
- 3.2** Relevant Terms and Units-The Compound Microscope, Phase contrast Microscope, Polarizing Microscope, Fluorescence Microscope and TEM

UNIT –IV

Basic Techniques of Slide Preparation and Culture of Micro-Organisms

4.1 Introduction- Cleaning, care and Storage of Slides-Washing up used slides-Cleaning Routine for New Slides – Storage of Prepared slides and Labelling of Slides-Preparation of Slides-Temporary and Permanent Preparation-Uses of stains- smear/squash preparation-Hand-cut sections.

4.2 Characteristics and Types of Bacteria and Fungi-Factors Affecting Growth of Microorganisms-paramecium culture-Maintenance and preservation of cultures-Disposal methods-Inoculation on solid medium.

UNIT –V

Fixation and Staining Techniques

5.1 Introduction to steps Involved in Permanent Mounts of Plants and animals-Fixatives and Their Action-Primary Fixative Groups, Coagulant fixative and non-Coagulant fixative-Composite fixatives-Plant fixatives, Animal Fixatives and Fixatives, Safety

5.2 Alcohol Series-Staining theory and methods-Basic, Acid, amphoteric dyes and types of Staining methods – Mordanting-Formulary of Reagents and Stains-Fixatives and Stains in common use-Grade of Alcohol-Animal Ringer solution and physiological saline solution.

Reference

1. General microbiology - *Trestott*
2. Laboratory manual of biology - *W.H.Freeman*
3. Tools and Techniques second edition - *Ane books*

LABORATORY TECHNIQUES IN SCIENCE (PRACTICAL)-CPL03

LABORATORY TECHNIQUES IN BIOLOGY (PRACTICAL)-CPL03

1. Handling Common Laboratory Equipment
2. Laboratory Organisation
3. Procuring Plant Material
4. Procuring Zoological Material for Lab Exercises
5. Setting of Demonstrations of Physiological Processes in Plants
6. Setting Up Apparatus for Demonstrating Physiological Activity in Animals
7. Microscope Handling and Maintenance
8. Preparation of Reagents and Stains
9. Preparation of Temporary Slides
10. Preparation Required for Dissections
11. Techniques for Microbial Culture and Gram's Staining

LABORATORY TECHNIQUES IN SCIENCE-CPL02

LABORATORY TECHNIQUES IN CHEMISTRY -CPL02

OBJECTIVES:

1. To know the chemical apparatus
2. To understand about the glass working techniques and calculation of solutions.
3. To learn about the filtration methods and chromatographic techniques.

UNIT-I

CHEMICAL APPARATUS

Laboratory glass wares-physical balance-chemical balance-analytical balance-melting point apparatus-boiling point apparatus-potentiometer-conductivity meter-pH meter-centrifuge machine.

UNIT-II

GLASS WORKING TECHNIQUES

Possible hazards from glass-tools-forced air burner-glass blowing operations-glass working operations-cutting glass-flame polishing-use of carbon block-blowing bulbs-forming a test tube end.

UNIT-III

SOLUTIONS

Water- chemical nature of water-concentrations of solutions-percentage-molarity-normality-calculation of masses and volumes - prepare solutions-accuracy and precision of measurements of solutes-methods of preparing solutions.

UNIT-IV

FILTRATION

Filter paper-a simple filtration-reduced pressure filtration-small scale methods-distillation - boiling point determination-recrystallization and melting point determination

UNIT-V

CHROMATOGRAPHY

Origin-types-partition chromatography-paper chromatography-applications-adsorption chromatography-TLC-identification of compounds-column chromatography.

BOOKS FOR REFERENCE:

1. Sharma B.K., Instrumental methods of chemical analysis, Coel Publishing House, Merrut,(1997)
2. Gopalan R., Subramanian P.S. and Rengarajan K.,(1993) Elements of Analytical Chemistry, Sultan Chand and Sons.
3. Gurdeep R Chatwal, Sham K. Anand (2005) "Instrumental methods of chemical analysis", Himalaya publishing house.
4. Venksteswaran V, Veeraswamy R, Kulandaivelu A.R., Basic principles of practical chemistry, 2nd edition, New Delhi, Sultan Chand and Sons (1997)

LABORATORY TECHNIQUES IN SCIENCE (PRACTICAL)-CPL03

LABORATORY TECHNIQUES IN CHEMISTRY (PRACTICAL)-CPL03

LIST OF EXPERIMENTS

1. Conductometric acid-base titration
2. Potentiometric redox titration
3. Paper chromatography-Blue and red ink separation
4. Separation of colloids by centrifugation method
5. Preparation of organic compounds-Nitration
6. Determination of pH
7. Colorimetric method
8. Determination of melting point.
9. Estimation of Total Hardness of water
10. Volumetric analysis.

LABORATORY TECHNIQUES IN SCIENCE-CPL02

LABORATORY TECHNIQUES IN PHYSICS - CPL02

UNIT-I

AN INTRODUCTION TO THE PHYSICS LABORATORY

Introduction: Objectives - Know your physics laboratory: What the lab contains – laboratory arrangements – dark room arrangements – general utilities in the lab: maintenance of utilities – basic tools – Physics apparatus: Broad classifications

UNIT-II

COMMON LABORATORY TOOLS

Introduction: Objectives – Some common tools – Jointing materials

UNIT – III

BASIC APPARATUS

Introduction : Objectives -Length and time measurements : vernier calipers- screw gauge – stop watch and digital timer - measurement of mass – Measurement of atmospheric pressure : Fortin's apparatus – Barometer – mercury thermometer – measurement of frequency and speed of sound waves : Sonometer , resonance tube apparatus and tuning fork – permanent magnets and electro magnets

UNIT – IV

OPTICAL APPARATUS

Introduction: Objectives – Laws of reflection and refraction – image formation by reflecting surfaces : plane mirrors and spherical mirrors - image formation by refracting surfaces : prisms and lenses – optical instruments : microscopes , telescopes and spectrometers – sources of light : incandescent sources and discharge lamps

UNIT – V

BASIC ELECTRICITY AND ELECTRICAL COMPONENTS

Introduction: Objectives – simple electrical circuits: resistive components – reactive components – primary and secondary cells- supply of electricity in the physics lab.

REFERENCE:

1. Brijlal and N. Subramaniam, A text book of Electricity and magnetism, New Delhi
2. Principles of electronics optics V.K Mehta, Rohit Mehta, Chand and company, New Delhi
3. Dr. S. Somasundharan, Practical physics, Apsara publications, Tiruchirappalli.

LABORATORY TECHNIQUES IN SCIENCE (PRACTICAL)-CPL03

LABORATORY TECHNIQUES IN PHYSICS (PRACTICAL) - CPL03

1. Measurements in physics Vernier calipers and screw gauge, Physical balance
2. Stationary waves in stretched strings – sonometer ,Tuning fork
3. Measurement of thermal properties Specific heat capacity of water
4. Setting of telescope and optical lever arrangement
5. Investigations with mirrors and lenses
6. Working with spectrometer and observing sodium and mercury spectra
7. Handling and maintaining multimeter
8. Fabrication of extension board
9. Simple current and voltage measurements
10. Using an oscilloscope

SHRIMATI INDIRA GANDHI COLLEGE

(Nationally Accredited at 'A' Grade (3rd Cycle) by NAAC)

TIRUCHIRAPPALLI – 620 002

*DEPARTMENTS OF COMPUTER SCIENCE,
IT & APPLICATIONS*

SYLLABUS

**DIPLOMA IN COMPUTER APPLICATIONS
(2008 ONWARDS)**

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Syllabus
Diploma Course in Computer Application
(Revised with effect from May 2008)

Paper- I

Fundamentals of Computer

Unit – I

Introduction – computer – Generations of computer – advantages & disadvantages

Unit- II

Paper – II

Operating System

Unit – I

Definition – Types of Operating system: single user OS – multi user OS

Unit – II

File system: FAT 16, FAT32, NTFS – File management – creation -deletion – modification – Access control – directory creation – deletion.

Unit – III

Introduction to MS DOS – History & version of DOS – DOS Basics – physical structure of disk, drive name – Directory structure & naming rules- Booting process- DOS System files

Unit - IV

Commands in MSDOS – External commands – Internal command: DIR, MD, CD, RD, COPY, DEL, VOL, DATE, TIME, PATH, CLS, TYPE etc

Unit - V

External commands: CHKDSK, XCOPY, PRINT, DISKCOPY, DISKCOMP, TREE, MOVE, LABEL, FORMAT, SORT, FDISK, SYS, BACKUP, EDIT, HELP, etc.

Paper - III

Windows Operating System

Unit – I

Introduction – Versions – File systems in win 98 and win xp – hardware requirement for windows

Unit – II

Windows structure – Desktop – Start menu , task bar – recycle bin - shutdown, restart & standby

Unit – III

Control Panel – Add or remove programs – system setting – Device manager – Windows help.

Unit – IV

My computer – my documents – Accessories- MS Paint, calculator, note pad, word pad, Address book and system tools.

Unit – V

Installation of Windows – Right click properties of windows – Creating, removing, renaming files & folders- Installing system software – Playing movies & songs using media player – Copying and writing disc.

Paper-IV

Office Automation:

Unit – I

MS- Word- Introduction to Computers – Hardware - Software, Operating System: Windows XP - MS-Paint, Notepad, WordPad, Introduction to MS-Word, Creating, Editing and Formatting Document – Working with Drawing objects – Text Manipulation

Unit-II

Working with Tables – Columns – Labels - Plotting, editing and Filling drawing objects- Bookmark – Header & Footer - Checking and Correcting a document - Creating Labels – Envelops – Mail Merge – Formatted output and Report generation Printing Documents, Working with Internet.

Unit-III

Ms – Excel - Ms – Excel: Introduction – Data Entry – Cell Formatting - Plotting Graphs – Workbook Features – Library Functions

Unit-IV

Conditional Functions and Data Sorting – Limit the data on a worksheet - Data Validation – Data consolidation - Chart creation - Checking and Correcting Data - Tracking and Managing Changes- Advanced Features

Unit-V

Ms – PowerPoint- Introduction - Creating, Editing and Formatting Presentation – Applying Transition and Animation Effects - Applying Design Templates - Viewing and Setting up a Slide Show - Navigating among Different Views - Ms Outlook: Introduction to Folder List – Address Book.

Paper-V

RDBMS & Internet Concepts:

Unit – I

Introduction to DBMS – Basic terminologies - Data Base – File – Table – Table Structure – Record (Tuples) – Attributes / Elements

Unit – II

Primary Key – Foreign Key – Candidate Key – Query – Forms – Macros – Reports.

Unit III

Various Packages & Softwares for DBMS – Difference Between DBMS & RDBMS

Unit – IV

Introduction to SQL- Internet Concepts : Introduction – Browser – ISP – World Wide Web – Types of Internet Connection – URL – Protocols: HTTP, FTP, TCP/IP, SMTP- Search Engines – Downloading – Uploading

Unit V

Email – Web Applications – Messenger & Chatting – Scripting Languages – HTML

PAPER – VI

HTML & JAVA SCRIPTING

Unit-I

Introduction to HTML – HTML Elements – Creating a HTML Page and running it -
HTML tags – Heading – paragraph – line break – HTML tag Attributes.

Unit – II

Text Formatting – Text formatting tags – Font tags – HTML Links.

Unit – III

HTML Frames – Frameset tags - HTML Tables – HTML Lists – Applying images
and Background

Unit – IV

HTML Forms – Text fields – Radio buttons – Check boxes – Submit buttons –
Action attributes – Method attributes – Getting input from user forms. Using HTML
Editors – FrontPage

Unit – V

Introduction to JavaScript – JavaScript elements: Data types and variables –
function- Applying Form validation.

REFEENCES

- David Rivers, Word 2003, 2004, Essential Training [MOV], Lynda.com, Inc Publications.
- Ellen Finkelstein, 2003, How to Do Everything with Microsoft Office PowerPoint
- 2003 (How to Do Everything) Published by McGraw-Hill Osborne Media.
- Jill Murphy, 2003, Microsoft Office Word- Comprehensive Course - Labyrinth Publications.
- McGraw-Hill/Irwin - Deborah Hinkle, 2003, Microsoft Office Word 2003: A Professional Approach, Comprehensive Student Edition Specialist Student Edition.
- McGraw-Hill/Irwin - Deborah Hinkle, 2003, Microsoft Office 2003 PowerPoint : A Professional Approach, Comprehensive w/ Student CD.
- Nellai Kannan. C (2002), MS-Office, Nels Publications, Tamil Nadu.
- Sundararajan.K, 2005, Internet, Netcape Communicator 4.7, Kannahasan Pathipagam, Chennai.
- Walkenbach, John, 2003, Excel 2003 Formulas, John Wiley & Sons.