



**GANDHI MEMORIAL NATIONAL COLLEGE  
AMBALA CANTT.**

**(Affiliated to Kurukshetra University, Kurukshetra)**

**Add-on/Certificate Courses**



## **Add-On/Certificate Courses**

Keeping in view the market demand for skilled graduates in various fields, Gandhi Memorial National College, Ambala Cantt. introduces several Add-on/Certificate Courses for providing the students participative as well as skill-based education for increasing their employability prospects and preparing them to face the cutthroat competition in the outside world. Based on the analysis of students' feedback, IQAC of the college after detailed discussion with the Principal and Heads of the Departments proposes various Add-on/Certificate courses which are introduced in the college every year for the benefit of the students. The curriculum of these courses is designed in such a way that it provides the students detailed knowledge and skills required to perform real-world job responsibilities and further helps them perform confidently and efficiently at workplace.

# COURSES OFFERED

2016-17

Sr. No.	Name of Course	Course Code	Year of Offering
1.	Diploma in Software Management	DISM-01	2016
2.	Higher Diploma in Software Engineering	HDSE-01	2016
3.	Advance Diploma in Software Engineering	ADSE-01	2016
4.	Certificate Course in Soft Skill Management	SSM/CC-01	2016
5.	Diploma Course in Soft Skill Management	SSM/DC-01	2016
6.	Advance Diploma Course in Soft Skill Management	SSM/ADC-01	2016
7.	Certificate Course in Pharmaceutical Chemistry based on Ayurveda	PCA/CC-01	2016
8.	Diploma Course in Pharmaceutical Chemistry based on Ayurveda	PCA/DC-01	2016
9.	Advance Diploma Course in Pharmaceutical Chemistry based on Ayurveda	PCA/ADC-01	2016
10.	Certificate Course in Electronic Hardware Maintenance	EHM/CC-01	2016
11.	Diploma Course in Electronic Hardware Maintenance	EHM/DC-01	2016
12.	Advance Diploma Course in Electronic Hardware Maintenance	EHM/ADC-01	2016
13.	Certificate Course in Business Skill Development	BSD/CC-01	2016
14.	Diploma Course in Business Skill Development	BSD/DC-01	2016
15.	Advance Diploma Course in Business Skill Development	BSD/ADC-01	2016
16.	Course in Business Ethics	WM/CC-01	2016
17.	Course in Human Values	BE/CC-01	2016
18.	Course in Personality Development	HV/CC-01	2016
19.	Course in Women Empowerment	PD/CC-01	2016
20.	Course in Social Responsibility	SE/CC-01	2016
21.	Course in Environment and Sustainability	ES/CC-01	2016

**2017-18**

<b>Sr. No.</b>	<b>Name of Course</b>	<b>Course Code</b>	<b>Year of offering</b>
1.	Course in Environment & Sustainability	ES/CC-01	2017
2.	Certificate Course in Business Skill	BSD/CC-01	2017
3.	Diploma Course in Business Skill	BSD/DC-01	2017
4.	Advance Diploma Course in Business Skill	BSD/ADC-01	2017
5.	Certificate Course in Business Ethics	BE/CC-01	2017
6.	Certificate Course in Corporate Social Responsibility	CSR/CC-01	2017
7.	Diploma in Software Management	DISM-01	2017
8.	Advance Diploma in Software Engineering	ADSE-01	2017
9.	Course in Skill Development	SD/CC-01	2017
10.	Certificate Course in Pharmaceutical Chemistry based on Ayurveda	PCA/CC-01	2017
11.	Diploma Course in Pharmaceutical Chemistry based on Ayurveda	PCA/DC-01	2017
12.	Advance Diploma Course in Pharmaceutical Chemistry based on Ayurveda	PCA/ADC-01	2017
13.	Certificate Course in Word Processing	WP/CC-01	2017
14.	Certificate Course in Office Automation Tools	OA/CC-01	2017
15.	Certificate Course in Light Music	LM/CC-01	2017
16.	Certificate Course in Harmonium	HM/CC-01	2017
17.	Certificate Course in Soft Skill Management	SSM/CC-01	2017
18.	Diploma Course in Soft Skill Management	SSM/DC-01	2017
19.	Advance Diploma Course in Soft Skill Management	SSM/ADC-01	2017

## 2018-19

<b>Sr. no.</b>	<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of Offering</b>
1.	Certificate Course in Web Designing	WD/CC-01	2018
2.	Certificate Course in Communication Skills	CS/CC-01	2018
3.	Certificate Course in Hindi Vyakaran Ka Prayogik Gyan	HI/CC-01	2018
4.	Certificate Course in Indian Musical Instruments	IMI/CC-01	2018
5.	Certificate Course in Yoga & Meditation	YMT/CC-01	2018
6.	Certificate Course in Understanding Political System	UPS/CC-01	2018
7.	Certificate Course in Cybercrime: Safety and Security	CSS/CC-01	2018
8.	Certificate Course in Personality Development	PD/CC-01	2018
9.	Certificate Course in Bio Techniques	BT/CC-01	2018
10.	Certificate Course in Economic Botany	EB/CC-01	2018
11.	Certificate Course in Women Empowerment	WE/CC-01	2018
12.	Certificate Course in Human Values	HV/CC-01	2018
13.	Certificate Course in Social Responsibility	SR/CC-01	2018
14.	Certificate Course in Business Ethics	BE/CC-01	2018
15.	Certificate Course in Economic Zoology	VM/CC-01	2018
16.	Certificate Course in Detection of Adulterants in Common Food Items	DAF/CC-01	2018
17.	Certificate Course in Entrepreneurship Development	ED/CC-01	2018
18.	Certificate Course in French Language	CFL/CC-01	2018
19.	Certificate Course in Electronic Hardware Maintenance	EHM/CC-01	2018
20.	Certificate Course in Soft Skills Management	SSM/CC-01	2018
21.	Certificate Course in Pharmaceutical Chemistry based on Ayurveda	PCA/CC-01	2018
22.	Diploma Course in Pharmaceutical Chemistry based on Ayurveda	PCA/DC-01	2018

23	Advance Diploma Course in Pharmaceutical Chemistry based on Ayurveda	PCA/ADC-01	2018
24	Certificate Course in Software Management	CSM/CC-01	2018
25	Certificate Course in Business Skill Development	BSD/CC-01	2018
26	Diploma Course in Business Skill Development	BSD/DC-01	2018
27	Advance Diploma Course in Business Skill Development	BSD/ADC-01	2018
28	Certificate Course in Tally ERP and Business Accounting	TBA/CC-01	2018
29	Certificate Course in Spoken English and Communication Skills	SECS/CC-01	2018
30	Certificate Course in Vedic Maths	VM/CC-01	2018
31	Certificate Course in Plant Tissue Culture	PTC/CC-01	2018
32	Diploma Course in Indian Musicology	IM/DC-01	2018
33	Diploma Course in Cybercrime: Technical and Behavioural Education	CTBE/DC-01	2018
34	Diploma Course in Advanced Mathematics	AM/DC-01	2018

## 2019-20

<b>Sr. No.</b>	<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of Offering</b>
1	Certificate Course in Advertising and Sales Management	ASM/CC-01	2019
2	Certificate Course in Rural Marketing	RM/CC-01	2019
3	Certificate Course in Inter Personal Relationship	IPR/CC-01	2019
4	Certificate Course in Community Welfare Schemes	CWS/CC-01	2019
5	Certificate Course in Defence Studies	DS/CC-01	2019
6	Certificate in Software Engineering	CSE/CC-01	2019
7	Certificate Course in NET-Banking	NTB/CC-01	2019
8	MOOC	MOC/CC-01	2019
9	Certificate Course in Income Tax Calculation	ITC/CC-01	2019
10	Certificate Course in Case Study and Interview	CSI/CC-01	2019
11	Certificate Course in Stress Management	SM/CC-01	2019
12	Certificate Course in Awareness of Consumer Rights in Sanskrit Shastras	ACRSS/CC-01	2019
13	Certificate Course in Mushroom Cultivation	MC/CC-01	2019
14	Certificate Course in Stress Management Through Ragas	SMR/CC-01	2019
15	Certificate Course in Designing of Working Model	DWM/CC-01	2019
16	Certificate Course in Self Safety in Using Electronic Appliances	SSE/CC-01	2019
17	Certificate Course in History for Services and Other Competitive Examination	HSC/CC-01	2019
18	Certificate Course in Photoshop	PS/CC-01	2019
19	Certificate Course in Disaster Management	DM/CC-01	2019
20	Certificate Course in First and Training Course	FAT/CC-01	2019
21	Certificate Course in Self Defence Strategies	SDS/CC-01	2019
22	Certificate Course in Man and Environment	MAE/CC-01	2019
23	Certificate Course in French Language	CFL/CC-01	2019
24	Certificate Course in Pharmaceutical Chemistry based on Ayurveda	PCA/CC-01	2019
25	Diploma Course in Pharmaceutical Chemistry based on Ayurveda	PCA/DC-01	2019
26	Advance Diploma Course in Pharmaceutical Chemistry based on Ayurveda	PCA/ADC-01	2019
27	Certificate Course in Yoga and Meditation	YM/CC-01	2019

## 2020-21

<b>Sr. No.</b>	<b>Name of the Certificate Course</b>	<b>Course Code</b>	<b>Year of Offering</b>
1	Certificate Course in Analysing Financial Statements	AFS/CC-01	2020
2	Certificate Course in Basics of Biochemistry	BB/CC-01	2020
3	Certificate Course in Cosmic Rays	CR/CC-01	2020
4	Certificate Course in Electronics Board Design	EBD/CC-01	2020
5	Certificate Course in First Aid and Home Nursing	FAHN/CC-01	2020
6	Certificate Course in Gandhian Peace Studies	GPS/CC-01	2020
7	Certificate Course in Health and Hygiene	HH/CC-01	2020
8	Certificate Course in Interview Skills	IS/CC-01	2020
9	Certificate Course in Literary Ages and Major Works	LAMW/CC-01	2020
10	Certificate Course in Employability Skills	EMS/CC-01	2020
11	Certificate Course in Marketing Management	MKTM/CC-01	2020
12	Certificate Course in Right to Information in Context to Business	RTIB/CC-01	2020
13	Certificate Course in Computer and Hindi Language	CHL/CC-01	2020
14	Certificate Course in Introducing Start-up	ISU/CC-01	2020
15	Certificate Course in Statistical Methods	SM/CC-01	2020
16	Certificate Course in Women and Development	WD/CC-01	2020
17	Certificate Course in Yoga and Naturopathy	YN/CC-01	2020
18	Certificate Course in Google AdSense	GA/CC-01	2020
19	Certificate Course in Multimedia	MM/CC-01	2020



# **COURSE CONTENTS**

## **DIPLOMA IN SOFTWARE MANAGEMENT**

### **UNIT-I**

Computer Fundamentals: Definition, Block Diagram along with its components, characteristics & classification of computers, Applications of computers in various fields. Memory: Concept of primary & secondary memory, RAM, ROM, types of ROM, flash memory, Secondary storage devices: Sequential & direct access devices viz. magnetic tape, magnetic disk, CD, DVD.

### **UNIT-II**

Computer hardware & software: I/O devices, relationship between hardware and software, types of software, Operating system: Definition, functions of operating system, concept of multiprogramming, multitasking, multithreading, multiprocessing, time-sharing, real time, single-user & multi-user operating system.

### **UNIT-III**

Planning the Computer Program: Concept of problem solving, Problem definition, Program design, Debugging, Types of errors in programming, Documentation, Techniques of Problem Solving: Flowcharting, algorithms, pseudo code, decision table

### **UNIT-IV**

Searching, Sorting, and Merging: Linear & Binary Searching, Bubble, Selection, and Insertion Sorting, Merging, Design of algorithms for searching, sorting and merging. Computer Languages: Analogy with natural language, machine language, assembly language, high-level language, language translators, characteristics of a good programming language.

### **TEXT BOOKS**

1. Sinha, P.K. & Sinha, Priti, Computer Fundamentals, BPB
2. Dromey, R.G., How to Solve it By Computer, PHI REFERENCE BOOKS
3. Balagurusamy E, Computing Fundamentals and C Programming, Tata McGraw Hill.
4. Norton, Peter, Introduction to Computer, McGraw-Hill

# **HIGHER DIPLOMA IN SOFTWARE ENGINEERING**

## **UNIT – I**

Introduction: Program vs. Software, Software Engineering, Programming paradigms, Software Crisis – problem and causes, Phases in Software development: Requirement Analysis, Software Design, Coding, Testing, Maintenance, Software Development Process Models: Waterfall, Prototype, Evolutionary and Spiral models, Role of Metrics.

## **UNIT – II**

Feasibility Study, Software Requirement Analysis and Specifications: SRS, Need for SRS, Characteristics of an SRS, Components of an SRS, Problem Analysis, Information gathering tools, Organizing and structuring information, Requirement specification, validation and Verification. SCM

## **UNIT – III**

Structured Analysis and Tools: Data Flow Diagram, Data Dictionary, Decision table, Decision tree, Structured English, Entity-Relationship diagrams, Cohesion and Coupling. Gantt chart, PERT Chart, Software Maintenance: Type of maintenance, Management of Maintenance, Maintenance Process, maintenance characteristics. .

## **UNIT – IV**

Software Project Planning: Cost estimation: COCOMO model, Project scheduling, Staffing and personnel planning, team structure, Software configuration management, Quality assurance plans, Project monitoring plans, Risk Management. Software testing strategies: unit testing, integration testing, Validation testing, System testing, Alpha and Beta testing.

### **TEXT BOOKS:**

1. Pressman R. S., “Software Engineering – A Practitioner’s Approach”, Tata McGraw Hill.
2. Jalote P., “An Integrated approach to Software Engineering”, Narosa.

### **REFERENCE BOOKS:**

Sommerville, “Software Engineering”, Addison Wesley.

# **ADVANCED DIPLOMA IN SOFTWARE ENGINEERING**

## **UNIT – I**

Artificial Intelligence: Intelligence, AI Concepts, Various definitions of AI, Knowledge, Knowledge Pyramid, People and Computers: What computers can do better than people, what people can do better than computers; Characteristics of AI Problems, Problem Representation in AI, Components of AI, AI Evolution, Application Areas of AI, History of AI, The Turing Test, The Revised Turing Test

## **UNIT – II**

Expert System: Components of Expert System: Knowledge Base, Inference Engine, User Interface, Features of Expert System, Expert System Life Cycle, Categories of Expert System, Rule Based vs. Model Based Expert Systems, Advantages/Limitations of Expert System, Developing an Expert System: Identification, Conceptualization, Formalization, Implementation, Testing, Using an Expert System, Application Areas of Expert System

## **UNIT – III**

Introduction to VB: Visual & Non-Visual programming, Procedural, Object-Oriented, Object-Based and Event-Driven Programming Languages, VB as Event-Driven and Object-Based Language, VB Environment: Menu bar, Toolbar, Project explorer, Toolbox, Properties Window, Form Designer, Form Layout, Immediate window, Default Controls in Tool Box Visual Development and Event Driven programming

## **UNIT – IV**

Basics of Programming: Variables: Declaring Variables, Types of variables, Converting Variables Types, User Defined Data Types, Forcing Variable Declaration, Scope & Lifetime of Variables. Constants: Named & Intrinsic, Operators: Arithmetic, Relational & Logical operators, Input/output in VB: Various Controls for I/O, Message box, Input Box, Print statement.

### **TEXT BOOKS:**

- Henry C.Mishkoff, “Understanding Artificial Intelligence” □ V S Janakiraman, “Foundation of Artificial Intelligence and Expert Systems”

### **REFERENCE BOOKS:**

1. Dan W. Patterson, “Introduction to Artificial Intelligence and Expert Systems”
2. Michael Halvorson, “Step by Step Microsoft Visual Basic 6.0 Professional”, PHI □ “Visual basic 6 Complete”, BPB Publications.

# **CERTIFICATE COURSE ON SOFT SKILL MANAGEMENT**

## **Paper A: Communication Skills**

### **Module I:**

- Importance and benefits of effective communication
- Meaning and Concept of Communication Skills
- Components of Communication
- Problems of Communication
- Non-Verbal Communication
- Communicating Ideas
- Factors Affecting Communication Skills

### **Module II:**

- Paper Reading
- Lecurette
- Extempore
- Just a Minute

## **Paper B: Information Management**

### **Module I:**

#### MS Word

- Use MS Word/Open Office Word for letter writing
- Use MS Word/Open Office Word for Mail Merge
- Use MS Word/Open Office Word for project documentation, inserting indexes, and tables of content

### **Module II:**

#### MS Excel

- Use MS Excel/Open Office Spreadsheet for preparing tables and charts
- Use MS Excel/Open Office Spreadsheet for graphs

## **Paper C: Personal Skills**

### **Module I:**

- Personality Assessment of Self before and after training on personal skills
- Intelligence Assessment of Self before and after training on personal skills

### **Module II:**

- Training of the students for personality/intelligence change

# **DIPLOMA COURSE ON SOFT SKILL MANAGEMENT**

## **Paper A: Communication Skills**

### **Module I:**

- Communication: Concept & Significance
- Language and Communication
- Psychological Barriers of Communication
- Handling the Barriers of Communication
- Other Factors Affecting proper/smooth Communication
- Business Communication

### **Module II:**

- Symposium
- Seminar
- Group Discussion
- Just a Minute

## **Paper B: Information Management**

### **Module I:**

PM

- Use PM for letter writing
- Use PM for Mail Merge
- Use PM for project documentation, inserting indexes, and tables of content

### **Module II:**

Corel

- Use Corel for preparing tables and charts
- Use Corel for graphs

## **Paper C: Personal Skills**

### **Module I:**

- Emotional Assessment of Self before and after training on personal skills
- Interest Assessment of Self before and after training on personal skills
- Aptitude Assessment of Self before and after training

### **Module II:**

- Training of the students for emotional/interest change

# **ADVANCE DIPLOMA COURSE ON SOFT SKILL MANAGEMENT**

## **Paper A: Communication Skills**

### **Module I:**

- Introduction to Business Writing
- Types of Business Writing
- Steps in writing business correspondence
- Style, Tone of Communication
- Choice of Words
- Grammar and Vocabulary for content writing
- Business Letter Writing
- American Spellings: commonly listed phrases/slangs
- Proof Reading

### **Module II:**

- Seminar
- Public Speaking
- Mock Interview

## **Paper B: Information Management**

### **Module I:**

- MS Power-Point

### **Module II:**

- E-mail

## **Paper C: Personal Skills**

### **Module I:**

- |  |                               |
|--|-------------------------------|
| • Confidence Building  | • Understanding Stress        |
| • Team Building  | • Recognizing Behaviour Types |
| • Positive Attitude  | • Good/Bad Stress             |
| • Time Management  | • Handling Stress Positively  |
| • Stress Management  | • Positive Mindset            |
| • Interest Assessment of Self before and after training on personal skills |                               |

### **Module II:**

- Training of the students for emotional/interest change

**CERTIFICATE COURSE IN**  
**PHARMACEUTICAL CHEMISTRY BASED ON AYURVEDA**

**Theory**

**UNIT 1**

Pharmaceutical Chemistry- An introduction

Ayurveda – A Fundamental Base of Pharmaceutical Chemistry

Charaka Samhita

General Description of Medicines

Three Doshas- Vata, Pitta, Kapha

**UNIT 2**

Dravya- Guna Vigyan

Description of Rasashala (Pharmacy), Division of Pharmacy

Instruments and equipments of Pharmacy,

Characteristics features of Pharmacy and Pharmacy workers

Preparation of Ayurvedic Medicines according to ancient methods

**Practical**

1. Ancient & Indian Methods of Preparation of Perfumery
2. Preparation of Cosmetics- Oil, Paste, Lipsticks, etc.

**DIPLOMA COURSE IN**  
**PHARMACEUTICAL CHEMISTRY BASED ON AYURVEDA**

**Theory**

**UNIT 1**

Brief treatment of uses Diseases- Based on Sutra and Chikitsa Sthanam

Panch- Karma

History of General Principles, Important of Prevention

**UNIT 2**

25 Ras Siddhas

19 Yantras required during processing of various formulation

Preparation of Cosmetics

**Practical**

1. Equipments used in preparation of Pharmaceutical material
2. Methods of manufacturing the medicines

**ADVANCE DIPLOMA IN**  
**PHARMACEUTICAL CHEMISTRY BASED ON AYURVEDA**

**Theory**

**UNIT 1**

Technical aspects of methods

Ayurvedic compound formulation based on plant drugs

Ayurvedic compound formulation based on metals and minerals

**UNIT 2**

Methods of preparation of some Rasas

Various processes involving Parada (Mercury)

Medicinal properties and techniques

**Practical**

1. Ancient & Indian Methods of Preparation of Perfumery
2. Preparation of Cosmetics- Oil, Paste, Lipsticks, etc.

**CERTIFICATE COURSE IN**  
**ELECTRONICS HARDWARE MAINTENANCE**

**Theory**

**UNIT I**

**Basic Electronics:** Concept of electronics, application of electronics in various fields, modern trends, Advantages, analog and digital electronic, manufacturing methods using PCB and SMD technologies.

**Hardware Maintenance Concepts:** Identification, Specification and uses of hand tools, Soldering techniques, electrical and electronic symbols, safety features of electrical appliances and equipment, Danger of shock and fire.

**Elementary Concepts:** Conductor, Insulator and semiconductor classification, Voltage, current, resistance, power, energy. Voltage source, Dry cells, battery, Fuses-types & ratings, MCB

**UNIT-II**

**Alternating Current:** Explanation of A.C, Comparison with D.C. Instantaneous values, R.M.S. values, phase cycle, Time period, frequency. Domestic power supply, single phase and three phase.



**Resistors:** Classification of resistors with specifications and use, Constructions of resistors, Colour code; Resistors series & parallel combinations, Explanation and use of analog and digital Multimeter; Testing different types of heaters and electric irons.

**Inductance, Transformer:** Define Inductance types, specification, Behavior with A.C., impedance, and coil concept, Explanation of transformer, types, turn ratio, uses, loss, efficiency, and type of cores.

**Capacitance:** Explanation of capacitance, Classification of capacitors with specification, dielectric constants, material used, Series and parallel connection, Colour codes, stored energy, RC circuits, Time constant.

**Measuring Instruments:** Classification of meters, Need of calibration, Resolution, accuracy, Use of Multimeter, CRO, insulation tester, Type of bridge circuits and their use in measurement.

### UNIT-III

**Introduction to Semiconductors:** Types of Semiconductor, intrinsic and extrinsic semiconductors. Temperature coefficients, Definition of P and N types of Semiconductor, How to make N type and P type, Silicon and Germanium material, majority and minority carriers, Biasing of P type and N type semiconductors.

**Semiconductor Diode:** Explanation of Diode, Classification, characteristics, application of diodes, diode functioning and applications, Diode as rectifier, Half wave, full wave rectifier, testing of diodes.

**Bipolar Junction Transistors:** Bi- Polar junction transistor, Principle of operation, types of transistor, Symbol, application circuits as an amplifier and a switch, thermal run-away.

**Sensors and Transducers:** Basic working principle, use & specifications of: LED's, photo diodes, photo transistors, thermistors, LDR, microphone & loud speakers.

### UNIT-IV

**Digital Electronics:** Explanation of Digital System, comparison with analogue, advantages, applications, Number systems- Binary, Hexadecimal, Octal conversions, BCD, Basic logic gates, NAND, NOR, Ex-OR, Ex-NOR, Buffer, Encoder, Decoder, Seven segments Decoder, Multiplexer, De-multiplexer, FLIP-FLOP's. Digital IC's

**Power Supply:** Explanation of Power supply , types, unregulated and regulated power supply, Surge Protection. Introduction to Inverter circuits, Emergency lights, SMPS, Voltage Stabilizers, CVTs and UPS.

**Maintenance of electronic and electrical gadgets:** Working and testing of dc adaptors for various electronic gadgets, Voltage stabilizers of Air conditioner, refrigerator and television,

working of florescent tube light, Fan regulator, Doorbell, fancy lights. Working of heating element based gadgets like electric Iron, Oven, room heater, blower, immersion rod, Geyser, Toaster. Principle of thermostat

**BOOKS RECOMMENDED:**

1. Principle of Electronics by V.K. Mehta, S.Chand and Company, 2004.
2. Foundations of Electronics by D.Chatupadhayay, New Age Publishers, 2003.
3. Electronics Principles, Malvino, 6th Edition, Tata McGraw Hill.
4. Basic Electronics Solid state by B.L.Theraja, S.Chand and Company, 2003.
5. Electrical Appliances Theory and Repair by Anwany, R.B.Publications,2003
6. Study of electrical Appliances and Devices by Bhatia, Khanna, Publishers,2003.
7. Service Manual Electrical Home Appliances by S.K.Gupta, G.T.Publishers.

**Practical**

1. Demonstration of assembled printed circuit board and components.
2. Demonstration and uses of hand tools, screw driver, pliers, threading tools, drilling machine, soldering and de-soldering practice.
3. Identification of conductors and insulators.
4. Practice of simple series and parallel circuits to measure current, voltage, energy, Battery/cell series and parallel connections.
5. Testing of MCB.
6. Demonstration of A.C. & D.C., instantaneous and RMS values, phase, time period, frequency and measurement of A.C. voltages.
7. Use of Multimeter for the measurement of voltage, current and resistance.
8. Identification of resistors using color code. Classification of resistors, Carbon, metal film and wire wound resistors (various Wattages), presets, Potentiometers, Study of resistor network.
9. Identification of inductors. Transformer testing of various specifications
10. Identification and testing of different types capacitors. Colour code practice. Behaviors of capacitor at different frequencies. Measurement of capacitance.
11. Demonstration of LCR Bridge for the measurement of resistance, voltage, current, capacitance, frequency and inductance.
12. Testing and behaviour of diode, zener diode, construction of half wave, full wave and bridge rectifier.

13. Lead identification and testing of a transistor. To study the function of a transistor as a switch and amplifier.
14. Demonstration and testing of LED circuits, microphones and servicing of loud speakers.
15. Study of Digital IC's, Verification of the truth tables of Logic gates. Use of NAND, NOR gates to build basic gates.
16. Verification of the truth tables Encoder, Decoder , Multiplexer, Demultiplexer, Flip-Flops.
17. Demonstration of various types of power supplies. Assembly and testing of an unregulated power supply, testing of a voltage stabilizer as per specifications to be used for domestic applications. Demonstration of UPS and SMPS.
18. Testing and repair of dc adaptors, Voltage stabilizers, florescent tube light, fan regulator, door bell, fancy lights, etc. Repairing of electric Iron, Oven, room heater, blower, immersion rod, Geysor, Toaster.

## **DIPLOMA COURSE IN ELECTRONICS HARDWARE**

### **MAINTENANCE**

#### **UNIT-I**

**Personal Computers & Peripherals** The central processing unit, CPU speeds, word size, data path, cache memory, memory types, system clock, power supply, keyboard, mouse, video adaptors, SCSI, Floppy disk controller and Disc drives, CDROM Drives, Hard disk, interfaces, Modems and Communication Ports, LAN Adapters, sound cards.

**Preventive Maintenance of PC:** Heat and thermal shock, safe temperature range for PCs, Removing heat, Good and bad box designs, Dealing with dust, Magnetism, stray electromagnetic interference, power noise, avoiding exposure to water and liquids, making environment PC-friendly.

**Power supplies and Power Protections:** Components of SMPS, power supply connections, upgrading power supply, troubleshooting the power supply, replacing the power supply, checking outlet wiring, solutions to power problems.

#### **UNIT-II**

**Installing and maintaining storage Devices:** Steps in hard drive installation, System's CMOS configuration, Hard disk software installation, partitioning, DOS formatting, Backing up hard disk drives, computer virus, and detection & clearing virus, suggestions for keeping virus away,

keeping up-to-date with new virus. Floppy drives, removing, configuring and installing floppy drives, pen drive.

**Installing and Troubleshooting printers:** Parallel, serial & USB ports, Laser, inkjet, dot matrix, daisy wheel, thermal printers, cables, port problems, software problems, printer driver.

### UNIT-III

**Peripherals installation & Troubleshooting printers:** Keyboard components, connectors, cable continuity, disassembling keyboard, Mouse types, mouse cleaning & maintenance, Modems & serial interfaces, video card characteristics, video troubleshooting, sound cards, CD-ROM installation, Physical installation, CD-ROM software installation.

**Internet and Software Installation:** World wide web, using and installing software for internet, configuring internet for dial-up and LAN access, installing operating systems and application software, like windows, LINUX, Office, Antivirus, TELLY etc.

#### **Recommended Books**

1. The complete PC upgrade and maintenance guide, Mark Minasi, BPB Publications, 2001.
2. Upgrading and repairing PCs, Scott Mueller, Prentice Hall of India.

#### **Practical**

1. Identification of computer peripherals and motherboards
2. Familiarization with peripheral cards and communication ports.
3. Demonstration of pre-installation: PC-friendly-environment planning
4. Installation of SMPS and identification of power supply connectors using colour code.
5. Estimating the SMPS power requirement for the PC. Replacing or upgrading the SMPS.
6. Installation of hard disk, floppy disk and CD drives.
7. Formatting and logical partitioning of hard disk drives.
8. Backing up data from Hard disk drive to Floppy/CD disk drive.
9. Familiarization with anti-virus software, detecting and cleaning virus.
10. Installing a printer and printer driver.
11. Installing an internal or external modem.
12. Familiarization with basic and advance key board functions.
13. Installing windows operating system.
14. Installing LINUX operating system.
15. Installing windows/LINUX operating system based application software.
16. Putting together the PC: the motherboard, the essential drives, monitor, mouse and key board etc. and test run the PC.

**ADVANCED DIPLOMA COURSE IN**  
**ELECTRONICS HARDWARE MAINTENANCE**

**UNIT-I**

**LAN Networking:** Networks in the workplace, Network topologies, Peer to peer Network, switches, Routers and Gateways, cabling in network hardware.

**Network Management:** Planning the network, managing the system-day to day, Connecting Network to the Internet, maintenance and security of Network.

**UNIT-II**

**UPS and Inverter Maintenance:** Theory and operation of offline UPS, Line interactive UPS, ON Line UPS and InverterS, Preventive maintenance of UPS, Maintenance of Battery.

**Maintenance of STD consoles and Land Line Equipment:** Study of STD/ISD PCO:- Monitor Power Supply section, line interface section, Main control section, Display and printer interface section. Introduction to landline telephone system set, working of phone set, local exchange, pulse dialing, tone dialing, hook switch, transmitter and receiver set.

**Public Address System:** Installing and correcting audio problems in public address system. Handling and studying the audio power amplifier, microphones and speakers.

**UNIT-III**

**Digital photography Interface with Computer:** Installation of Digital camera driver on computer. Interface of digital camera with computer using USB card reader. Study the use of adobe photoshop software, overhead projector maintenance.

**Mobile Connectivity:** Introduction to mobile telephone, setup procedure, preventive maintenance of mobile sets, mobile phone servicing and related technical information, mobile interfacing connector using Bluetooth interface, USB message interface, camera interface.

**Recommended Books:**

1. Local Area Networks by Robert M. Thomas, BPB publications.
2. UPS, 12V by Er, M.L. Chandna, Gurukul Technicals Institutes (English Medium)
3. MOSFET Inverter by K.C. Agarwal, Micropublications, Aligarh (English Medium)
4. Electronics projects 21 by EFY, ISO 9001-2000 certified.
5. Modern STD-PCO Monitor servicing by Manohar Lotia, BPB Publications.
6. Mobile phone compiled by S.K Gupta.
7. Modern Mobile phone Repair by Manohar Lotia, Pradeep Nair, Shailesh Tank..
8. Audio Troubleshooting and repair, BPB Publications.
9. User Manual of Adobe Photoshop Software.

## **Practical**

1. Learning various LAN network topologies.
2. Installing switches, hubs in LAN networking and understanding types of cables used in networks.
3. Use of firewall in connecting network.
4. Development of automatic battery charger circuit.
5. Fabrication of MOSFET based 50Hz UPS circuit.
6. Development of Inverter overload protector circuit with delayed auto reset.
7. Troubleshooting of Power supply section of STD/ISD PCO.
8. Fabrication of telephone amplifier circuit used in landline equipment.
9. Development of low cost PCO billing meter.
10. Installation and handling of public address system and correcting audio problems in the system.
11. Fabrication of 2- line intercom-cum-telephone line change over circuit.
12. Interfacing digital camera with personal computer.
13. Application of Photoshop software using digital camera.
14. Preventive maintenance of overhead projector.
15. Fabricating simple telephone recording/ answering machine.
16. Troubleshooting mobile phones.
17. Learning mobile interface techniques using mobile Bluetooth interface and USB message interface with computer.

# **CERTIFICATE COURSE IN BUSINESS SKILL DEVELOPMENT**

## **Theory**

### **Unit-I**

#### **COMMUNICATIVE GRAMMAR**

##### **A. Lexis: -**

Idioms & Phrases, one word substitute, Spotting errors, Para jumbles, confused words, comprehensives.

##### **B. Communication: -**

Introduction to verbal and nonverbal communication

Principles of effective communication-Effective listening

### **UNIT-II**

#### **WRITTEN COMMUNICATION**

A. Writing skills, Dialogue writing, Interpreting Pictures.

B. Technical writing

Business Letters

E-mail Writing.

### **Practical**

Developing Speaking & Listening Skills Through

1. Role Play Activities
2. Practicing Short Dialogues
3. Group Discussions
4. Debates
5. Speeches/Extempore
6. Listening to News Bulletin
7. Viewing & Reviewing TV Programmes.

## **DIPLOMA COURSE IN BUSINESS SKILL DEVELOPMENT**

**Theory: 40 marks**

**Practical: 40 Marks**

### **Theory**

- A. Business Communication – Its Forms, Practices
- B. Self-Development & Communication
- C. Effective Presentation Skills – Verbal & Non – Verbal

### **Practical**

Developing speaking & listening skills through

- 1) Group Discussion
- 2) Debate
- 3) Extempore
- 4) PPT Presentation
- 5) Interview
- 6) Management Games

## **ADVANCED DIPLOMA IN BUSINESS SKILL DEVELOPMENT**

**Theory: 40 marks**

**Practical: 40 Marks**

### **Theory**

- A. Writing Skills: Paragraph Writing, Report Writing, Letter Writing, E-Mail Writing
- B. Listening Skills: Emphasis will be placed on Effective Listening Skills.
- C. Interview Skills: Emphasis shall be laid on facing the interview

### **Practical**

Developing speaking & listening skills through

- 1. Role Playing Activities
- 2. Group Discussions
- 3. Debates
- 4. Speeches / Extempore
- 5. Interview
- 6. Interpreting news reports



## **CERTIFICATE COURSE ON WOMEN EMPOWERMENT**

### **UNIT - I**

Conceptualizing Women's health, Health as a Gender Issue, Status of Women's health in India, Maternal Morbidity, Maternal Mortality, Infant Mortality, Life Expectancy, Fertility. Definition and Explanation of the terms Feminism and Feminist.

### **UNIT - II**

Access to Health Care Services: Maternal and Child Health Services in India and Haryana, Food and Nutrition, Anemia, Pre-natal Care, Factors Influencing Women's Health. Women's reproductive rights and population control, National Population Policy, National Health Policy, HIV and AIDS Control Programme.

### **UNIT- III**

Constitutional and other legal provisions for women empowerment: Legal rights of women, Convention on Elimination of All From Discrimination against Women (CEDAW), Equal Remuneration Act - 1976 (ERA).

#### **Reference:**

1. Reina Lewis, Sara Mills (Ed.), 2003, Feminist Postcolonial Theory – A Reader, Edinburgh University Press, Edinburgh
2. Leela Kasthuri, 1995, Development, Patriarchy, and Politics: Indian Women in the Political Process 1947-1992, Occasional Paper NO 25, Centre for Women's Development Studies, New Delhi
3. Agnes, Flavia. (2003). "Feminist Jurisprudence: Contemporary Concerns". Majlis, Mumbai
4. M.S.Swaminathan. (1998). "Gender Dimensions in Biodiversity Management". Konarkpublisherspvt ltd, New Delhi.

## **CERTIFICATE COURSE ON** **ENVIRONMENT AND SUSTAINABILITY**

### **UNIT-I**

The Environment: Physical environment, biotic environment, biotic and abiotic interactions; Habitat and niche: Concept of habitat and niche; Population ecology: Concept, characteristics, population growth and regulation, species interactions—mutualism, competition, allelopathy, predation, parasitism;

## **UNIT-II**

Community structure and organization; Ecological Succession; Ecosystem organization: structure and functions; energy dynamics—trophic levels, energy flow pathways;

## **UNIT-III**

Global biogeochemical cycles; Global atmosphere changes: Environmental pollution, global environmental change and its consequences (CO<sub>2</sub> fertilization, global warming sea level rise and UV radiation);

## **UNIT-IV**

Biodiversity: status, monitoring and documentation; major drivers of biodiversity change; biodiversity management approaches.

### **Suggested Readings :**

1. Odum, E.P. (1983), Basic Ecology, Sanders, Philadelphia.
2. Singh, J.S., Singh, S.P. and Gupta, S.R. 2006. Ecology, Environment and Resource Conservation, Anamaya Publishers, New Delhi.
3. Smith, R.L. (1996), Ecology and Field Biology, Harper Collins, New York.

## **CERTIFICATE COURSE ON BUSINESS ETHICS**

### **UNIT 1: Business Ethics**

Introduction; Meaning; Scope; Types of Ethics; Characteristics; Factors Affecting Business Ethics; Importance of Business Ethics; Arguments against and in favour of Business ethics.

### **UNIT2: Personal Ethics**

Introduction; Meaning; Emotional Honesty; Virtue of Humility; Promote Happiness.

### **UNIT3: Ethics in Management**

Ethics in Management; Marketing Ethics; Ethics in Financial Management; Technological and Professional Ethics; Role Of Corporate Culture in Business: Meaning, Function, Impact Of Corporate Culture, Cross Cultural Issues In Ethics.

**CERTIFICATE COURSE ON**  
**CORPORATE SOCIAL RESPONSIBILITY**

**Unit 1**

Social Responsibility: Meaning of CSR, Evolution of CSR, CSR and Social Legitimacy, Importance of CSR

**Unit 2**

Fundamentals of Corporate Social Responsibility

**Unit 3**

Stakeholders Approach and Philanthropy: Stakeholder advocacy, Consumer Awareness, Role of business in society, Stages of Organizational Approach with CSR

**Unit 4**

CSR and Corporate Strategy

**Suggested Reading:**

- Werther, W. B. & Chandler. (2011). Strategic Corporate Social Responsibility. Thousand Oaks, CA: Sage

**CERTIFICATE COURSE ON SKILL DEVELOPMENT**

**Theory**

- A. Writing Skills: Paragraph Writing, Report Writing, Letter Writing, E-Mail Writing
- B. Listening Skills: Emphasis will be placed on Effective Listening Skills.
- C. Interview Skills: Emphasis shall be laid on facing the interview

**Practical**

Developing speaking & listening skills through

1. Role Playing Activities
2. Group Discussions
3. Debates
4. Speeches / Extempore
5. Interview
6. Interpreting news reports

## **CERTIFICATE COURSE IN WORD PROCESSING**

### **UNIT-I**

WINDOWS: Introduction to Windows and its Features, Hardware Requirements of Windows. Windows Concepts, Windows Structure, Desktop, Taskbar, Start Menu, My Pictures, My Music, My Documents, Recycle Bin. Managing Files, Folders and Disk. My Computer, Windows Explorer and its Facilities, Using CD, DVD, Pen Drive, Burning CD. Windows Accessories. Entertainment- Media Players, Sound Recorder, Volume Control.

### **UNIT-II**

ADVANCED FEATURES OF WINDOWS: Managing Hardware & Software - Installation of Hardware & Software, Using Scanner, Web Camera, Printers. System Tools - Backup, Character Map, Clipboard Viewer, Disk Defragmenter, Drive Space, Scandisk, System Information, System Monitor, Disk Cleanup, Using Windows Update. Browsing the Web with Internet Explorer, Multiple User Features of Windows, Creating and Deleting User, Changing User Password, etc. Accessibility Features of Windows - Sharing Folders and Drives, Browsing the Entire Network, Using Shared Printers. Control Panel & its components

### **UNIT - III**

Word Processing: Introduction to Office Automation, Creating & Editing Document, Formatting Document, Auto-text, Autocorrect, Spelling and Grammar Tool, Document Dictionary, Page Formatting, Bookmark, Advance Features of Word-Mail Merge, Macros, Tables, File Management, Printing, Styles, linking and embedding object

### **TEXT BOOKS**

1. Microsoft Office – Complete Reference – BPB Publication
2. Learn Microsoft Office – Russell A. Stultz – BPB Publication

### **REFERENCES BOOKS**

1. Courter, G Marquis. Microsoft Office 2000: Professional Edition. BPB.
2. Koers, D. Microsoft Office XP Fast and Easy. PHI.
3. Nelson, S L and Kelly, J Office XP: The Complete Reference. Tata McGraw-Hill

## **CERTIFICATE COURSE IN OFFICE AUTOMATION TOOLS**

### **UNIT – I**

Desktop Publishing: Concept, Need and Applications; Hardware and Software requirements for DTP, An Overview and comparison between DTP packages, Common features of DTP. Introduction to Page Maker: Features, System Requirements, Components of Page Maker Window, Introduction to Menu and Toolbars, PageMaker Preferences

### **UNIT – II**

Creating of Publications: Starting PageMaker, Setting Page size, Placing the text Formatting the text: Character Specification Paragraph setting: Paragraph Specification, Paragraph Rules, Spacing, Indents/Tabs, Define Styles, Hyphenation, Header & Footer, Page Numbering, Saving and Closing publication. Editing Publication: Open a publication, Story editor.

### **UNIT – III**

Word Processing: Introduction to Office Automation, Creating & Editing Document, Formatting Document, Auto-text, Advance Features of Word-Mail Merge, Macros, Tables, File Management, Printing, Styles, linking and embedding object.

### **UNIT – IV**

Presentation using PowerPoint: Presentations, Creating, Manipulating & Enhancing Slides, Organizational Charts, Excel Charts, Word Art, Animations and Sounds, Inserting Animated Pictures or Accessing through Object, Inserting Recorded Sound Effect or In-Built Sound Effect.

### **TEXT BOOKS:**

1. PageMaker-Complete by R. Shamms, Mortier & Rick Wallacl ,Techmedia
2. Learning PageMaker 7 by Ramesh Bangia of Khanna Book Publishing Co Pvt Ltd.

## **CERTIFICATE COURSE IN LIGHT MUSIC**

### **Theory**

#### **Unit-I**

1. Brief Study of the following:  
Sangeet, Naad, Shruti, Swar, Saptak, Alankar, Aaroh, Avroh, Pakad, Aalap and Taan
2. General Introduction of Song Forms: Geeta and Bhajan
3. Study of the following Taals with Notation: Tritaal, Kehrawa and Daadra (Thah Only)

#### **Unit-II**

1. Description of Bhatkhande Notation System
2. General study of Ghazal song Form

3. Performance Study of the following Taals with notations along with dugun: Tritaal, Daadra, Kehrawa, Roopak and Ektaal

### **Unit-III**

1. Brief Description of classical Music, Semi-classical Music, Light Music with their characteristics
2. Study of Light Music, Folk Music and Film Music with their characteristics
3. General Introduction of Harmony and Melody

### **Practical**

1. Performance study of two compositions each of Geet, Ghazal and Bhajan
2. Alankar in following thatas – Bilawal and Yaman
3. One Folk Song from any region of India
4. Practice of National Anthem and National Song
5. Any composition of Light Music
6. Any Filmy Song based on any Ragas
7. Practice of the Taalas from prescribed syllabus. (with Taali-Khali showing hand gestures)

## **CERTIFICATE COURSE IN HARMONIUM**

### **THEORY**

#### **UNIT-I**

1. Brief history of Harmonium.
2. Structural knowledge of Harmonium
3. Description of different Types of Harmonium

#### **UNIT-II**

1. Definition of following terms: Sangeet, Naad, Swara, Saptak, Alankar
2. Importance of Harmonium (as Solo Instrument & as accompanist).
3. Elementary knowledge of Teen Taal, Keherwa

#### **UNIT-III**

1. Playing techniques of Harmonium.
2. Biographies and contribution of Ustad Mahomad Dhaulpuri.
3. Biographies and contribution of Pt. Dinkar Sharma

### **Practical**

1. Playing of 5 Alankars in any Form
2. Playing of Shuddha and Vikrit Swara on Harmonium
3. Playing of Swara in all three Saptak

4. Knowledge of Playing Aroh, Avaroh in all ten That (shuddha and Vikrit Swara)
5. Any composition of Light Music
6. Any Filmy Song based on any Ragas

## **CERTIFICATE COURSE IN WEB DESIGNING**

### **UNIT – I**

Introduction to Internet and World Wide Web; Evolution and History of World Wide Web; Basic Features; Web Browsers; Web Servers; Hypertext Transfer Protocol; URLs; Searching and Web- Casting Techniques; Search Engines and Search Tools

### **UNIT – II**

Steps for Developing Website; Choosing the Contents; Home Page; Domain Names; Internet Service Provider; Planning and Designing Web Site; Creating a Website; Web Publishing; Hosting Site;

### **UNIT-III**

Introduction to HTML; Hypertext and HTML; HTML Document Features; HTML Tags; Header, Title, Body, Paragraph, Ordered/Unordered Line, Creating Links; Headers; Text Styles; Text Structuring; Text Colors and Background; Formatting Text; Page layouts; Insertion of Text, Movement of Text

### **UNIT – IV**

Images: Types of Images, Insertion of Image, Movement of Image, Ordered and Unordered lists; Inserting Graphics; Table Handling Functions like Columns, Rows, Width, Colours; Frame Creation and Layouts; Working with Forms and Menus; Working with Buttons like Radio, Check Box;

#### **TEXT BOOKS:**

- Bayross Ivan, “Web Enabled Commercial Applications Development using HTML, JavaScript, DHTML & PHP”, BPB Publication, 2005
- Powell Thomas, “The Complete Reference HTML & CSS”, Tat Mc-Graw Hill, 2010

#### **REFERENCE BOOKS:**

- Wendy Willard, “HTML Beginners Guide”, Tata McGraw-Hill □ Deitel and Goldberg, “Internet and World Wide Web, How to Program”, PHI.

# **CERTIFICATE COURSE IN WEB DESIGN**

## **UNIT-I**

Introduction: introduction to HTML, Basic principles involved in developing a web site, Planning process, Five Golden rules of web designing, Designing navigation bar, Page design, Home Page Layout, Design Concept. HTML Documents, Basic structure of an HTML document, Creating an HTML document, Mark up Tags, Heading-Paragraphs, Line Breaks, HTML Tags. Introduction to elements of HTML, Working with Text, Working with Lists (ordered list & unordered list), Tables and Frames, Working with Hyperlinks, Images and Multimedia, Working with Forms and controls.

## **UNIT- II**

Introduction to Cascading Style Sheets: Concept of CSS, Creating Style Sheet, CSS Properties, CSS Styling(Background, Text Format, Controlling Fonts), Working with block elements and objects, Working with Lists and Tables, CSS Id and Class, Box Model(Introduction, Border properties, Padding Properties, Margin properties), CSS Advanced(Grouping, Dimension, Display, Positioning, Floating, Align,Pseudo class, Navigation Bar, Image Sprites, Attribute sector), CSS Color, Creating page Layout and Site Designs.

## **UNIT-III**

Introduction to Internet: Brief History of Internet, World Wide Web, difference between WWW and Internet, Why create a web site, Web Standards, Audience requirement.

Introduction to Web Publishing or Hosting: Creating the Web Site, Saving the site, Working on the web site, Creating web site structure, Creating Titles for web pages, Themes-Publishing web sites.



## **CERTIFICATE COURSE ON COMMUNICATION SKILLS**

### **Unit-I**

**Communication:** Introduction, Definition, Nature and Scope of Communication, Process of Communication.

**Non-Verbal Communication:** Personal Appearance, Gestures, Postures, Facial Expression, Eye Contacts, Body Language, Time language, Silence, Tips for Improving Non-Verbal Communication, Essentials of Effective Communication, Communication Techniques, Barriers to Communication

**Personality Development:** Personality Analysis, Personality Traits, Career Planning (Benefits, Motivation and Achieving goals)

**Classroom Practice:** Greeting and introducing, Team Building and Team work **(10 Hrs.)**

### **Unit-II**

**Listening Skills:** Purpose of Listening, Listening to Conversation (Formal and Informal), Active Listening- an Effective Listening Skill, Benefits of Effective Listening, Barriers to Listening, Listening to Announcements- (railway/ bus stations/ airport /sports announcement/ commentaries etc.), Academic Listening (Listening to Lectures)

**Classroom Practice:** Listening to Talks and Presentations, Note Taking Tips **(05 Hrs.)**

### **Unit-III**

**Speaking Skills:** Spoken English in India, Spelling and Pronunciation, International Phonetic Alphabet Transcription of Received Pronunciation of Words as per the Oxford Advanced Learners Dictionary, Asking questions and responding politely, Apologizing and forgiving, Giving instructions, Seeking and giving permission, Expressing opinions(likes and dislikes), Agreeing and disagreeing, Demanding explanations, Asking for and giving advice and suggestions, Expressing sympathy.

**Classroom Practice:** Presentation Skills; Interview Skills- Preparing for an Interview, Interview Techniques, Public Speaking, Preparing the Speech, Organizing the Speech, Delivering the Speech. **(10 Hrs.)**

### **Unit-IV**

**Reading Skills:** Purpose, Process, Methodologies, Skimming and Scanning, Levels of Reading, Reading Comprehension, Academic Reading Tips

**Understanding and Applying Vocabulary:** Words Often Confused-Pairs of words, One Word Substitutes.

**Classroom Practice:** Group Discussion, Practicing Short Dialogues.

**(05 Hrs.)**

### **Unit-V**

**Writing Skills:** Meaning, Elements of Effective Writing, The Sentence, Paragraph Writing (Linkage and Cohesion), Letter Writing (formal and informal), Essay writing, Notices, Summarizing, Note-making, Report Writing, Idioms and Phrases, Words Often Confused Prefixes, Bases and Suffixes (Derivational & Inflectional), Idioms and Phrases, Phrases and Clauses.

**Classroom Practice:** Writing of CV, Memo, Drafting an E-mail, Press Release, Dialogue writing.

**(10 Hrs.)**

### **Suggested Readings:**

1. Sen, Leena. Communication Skills, Prentice Hall of India, New Delhi.
2. Prasad, P., Communication Skills, S. K. Kataria and Sons.
3. Prasad, P., The Functional Aspects of Communication Skills, Delhi.
4. Mitra, Barun K., Personality Development and Soft Skills, Oxford University Press.
5. Rajinder Pal and Prem Lata. English Grammar and Composition, Sultan Chand Publication.

## **हिन्दी व्याकरण का प्रायोगिक ज्ञान**

### **सहटिफ़िकेट कोसि पाठ्यक्रम**

#### **व्याकरण-खण्ड**

1. भाषा-विचार: भाषा, भाषा के रूप, भाषा और बोली, भाषा और ललपप, भाषा और व्याकरण ।
2. िणि-विचार: वणण ,वणणमाला ,सन्धि ।
3. शब्द-विचार: शब्द (अनेकार्थी, पयाणयवाची, पवलोम, वाक्यांश के ललए एक शब्द, शुद्ि- अशुद्ि) उपसर्ण, प्रत्यय, समास।
4. पद-विचार: सांज्ञा, सांज्ञा के पवकार-तत्व, ललारं, वचन, कारक, सवणनाम, पवशेषण, क्रिया ।
5. िाक्य-विचार: वाक्य के भेद और प्रभेद ।
6. मुििरे ँ लोकोक्कियाँ।

#### **रचना-खण्ड**

7. मौखखक-अभभव्यक्कि: भाषण, वाद-पववाद, पररचचाण, काव्य-पाठ, कर्था-कहानी ।

8. भलखखि-अभभव्यक्किः सार-लेखन, पत्र-लेखन, ननबांि-लेखन ।

संदभि-पुस्कि सूची

1. हहधदी व्याकरण - कामता प्रसाद रुरु ।
2. अद्यतन हहधदी- व्याकरण- डा०बी०एन० पाण्डेय ।
3. भाषा-पवज्ञान- भोलानार्थ नतवारी

## **CERTIFICATE COURSE ON INDIAN MUSICAL INSTRUMENTS**

**Theory**

**UNIT-I**

General Discussion of the following:

Nad, Swara, Saptak, Major tone, Minor tone, Semi tone, Thata, Saptak, Raga, Jati, Taan, Tode, Alankar, Abadha and Nibadha Gana, Taal.

**UNIT-II**

Classification of Instruments

Description of the Sitar and Method of Tuning

Description of the Tabla and Method of Tuning

Description of the Tanpura and Method of Tuning

**Practical**

Alankars on Sitar and Harmonium

Yaman, Bhupali, Vrindavani Sarang, Alhaya Bilawal Vilambit and Madhyalaya Khayal or Maseetkhani and Razakhani Gats with elaboration in any one of the above mentioned Ragas.

Ability to demonstrate Teental, Dadra by hand.

## **DIPLOMA COURSE ON INDIAN MUSICOLOGY**

**PART-I**

**Theory**

**UNIT-I**

General discussion of the following:

- (1) Sangeet (2) Saptak (3) Shruti (4) Thaata (5) Raag (6) Naad (7) Gamak

History of Indian Music during Vedic Period.

History of Indian Music during Medieval Period.

Lalit Kalaon Mein Sangeet ka Sthan.

**UNIT-II**

Origin and development of Indian Orchestra.

Merit and demerits of Notation System

Principles of Good Aalap and Taan.

Role of Science in promoting educational and cultural aspect of music during modern period.

### **UNIT-III**

Stress Management, Definition of Stress, Moods of Ragas and Their application to different stress related problems.

Bhajan, Geet, Ghazal, Kathak Dance, Manipuri Dance

Contribution towards music by the following: Bade Gulam Ali Khan & Pt.

Ravi Shankar

### **Practical**

Alankars for Vocal and Sitar

Kafi, Des, Bhairav, Bhairvi Raag Vilambit and Madhyalaya Khayal or Mascetkhani and Razakhani Gats with elaboration in any one of the above-mentioned Ragas.

Ability to demonstrate Rupak and Deepchandi by hand and one taal on Tabla.

One Geet or Bhajan

One Dhun on Sitar or Harmonium

### **PAPER – II**

#### **Theory**

#### **UNIT-I**

History of Indian Music during Modern Period.

General discussion of the following:

(1) Taan (2) Swar (3) Vadi (4) Samvadi (5) Anuvadi (6) Vivadi (7) Varjit-Swar.

Origin and Development of Indian Music.

#### **UNIT-II**

Relationship of Folk and Classical Music.

Role of Music in National integration

Comparison between the Ancient and Modern system of music education.

#### **UNIT-III**

Music and Psychology.

Music & Spirituality.

Voice-Culture

Baowl, Bhatiyali, Dadra, Kawali

Contribution towards music by the following:

Ustad Amir Khan Sahab & Ustad Vilayat Khan

### **Practical**

Alankars for Vocal and Sitar

Miyan Malhar, Bhing, Shudh-Kalyan, Klamaj Rang Vilambit and Madhyalnya Khayal or Maseetkhani and Razakhani Gats with elaboration in any one of the above mentioned Ragas.

Ability to demonstrate Jhaptal and Tivra by hand and one taal on Tabla.

One Geet or Bhajan

One Dhun on Sitar or Harmonium

### **CERTIFICATE COURSE IN YOGA AND MEDITATION**

#### **Theory:**

1. योग परिचय, अर्थ परिभाषा व महत्त्व
2. अष्टांग योग महर्षि पतंजलि के अनुसार
  - I. यम
  - II. नियम
  - III. आसन
  - IV. प्राणायाम
  - V. प्रत्याहार
  - VI. धारणा
  - VII. ध्यान
  - VIII. समाधि

#### **Practical:**

1. ओउम् का उच्चारण
  2. आसन  
48 आसन जिसमें सभी आसनों के लाभ मिल जाते हैं।
  3. प्राणायाम
    - I. भस्त्रिका
    - II. अनुलोम-विलोम
    - III. कपालभाती
  4. षट्कर्म
    - I. नेति
    - II. घौति
    - III. कुञ्जल (गजकर्म)
- 48 आसनों की सूची निम्न प्रकार से है:-
1. सिद्धासन
  2. पदमासन
  3. भद्रासन
  4. मुक्तासन
  5. स्वास्तिकासन

**CERTIFICATE COURSE ON**  
**UNDERSTANDING INDIAN POLITICAL SYSTEM**

**Semester 1**

**Unit I**

Indian Constitution Feature, Preamble, Fundamental Rights Fundamental Duties and Directive Principles of State Policy.

**Unit II**

Constitutionalism: Difference between Constitution & Constitutionalism; Concepts, problems and Limitations.

**Unit III**

Union and State Executive: President, Prime Minister, Council of Ministers; State Executive: Governor, Chief Minister and Council of Ministers.

**Unit IV**

Union and State Legislature: Parliament-Composition and Functions; State Legislature: Vidhan Sabha; Panchayati Raj, Bureaucracy role and importance.

**Semester 2**

**Unit I**

Federalism and its Working with reference to Centre-State Relations, Demand for state Autonomy; Emerging Trends in Indian Federalism.

**Unit II**

Election Commission, Electoral Process and its Defects and Voting Behavior, Electoral Reforms, Problem of Defection.

**Unit III**

Role of Caste, Religion, Language, Regionalism in India, Emerging Trends and Challenges in Indian Political System.

**Unit IV**

Political Parties, Interest groups, pressure group and political Elite.

**CERTIFICATE COURSE ON**  
**CYBER CRIME: SAFETY AND SECURITY**

**UNIT-I**

**Cyber Crime:** Meaning and concept, Cybercrime technology, Cyber Safety

**UNIT-II**

**Categories of Cybercrime:** Individual, Property and Government.

**UNIT-III**

**Types of Cybercrime:** Identity theft, Internet fraud, Invasion of Privacy, Cyberbullying.

**UNIT-IV**

**Protecting against Cybercrime:** Internet security, strong and unique password, software updates.

**DIPLOMA COURSE ON**  
**CYBERCRIME: TECHNICAL AND BEHAVIORAL EDUCATION**

**UNIT-I**

**Technological aspects of Cybercrime:** DDos attack, Botnets, Identity theft, cyber stalking, social engineering, PUPs, Phishing, Prohibited or Illegal content, online scams, Ransomware, Use of Antivirus, ATM fraud.

**UNIT-II**

**Social Media:** Cyber breach, Cyber Criminals, Managing settings, Protecting Password, Multifactor authentication, file sharing, Privacy.

**UNIT-III**

**Impact of cybercrime on society:** Cyberbullying, online Money-theft, spam calls, faking an identity online, online threats, excessive mobile usage, Disturbed sleep patterns, Health issues, Pornography addiction, Depression and other mental disorders, Isolation, emotional distress, suicidal attempts.

**UNIT-IV**

**Fighting with Cybercrime:** Vigilant browsing, reporting suspicious emails, Use of VPN, preventing cyberbullying, OPT Sharing, suspicious links, reporting online theft, cybercells, device lock.

## **CERTIFICATE COURSE ON PERSONALITY DEVELOPMENT**

### **UNIT-I**

Attitude: Concept, Importance and Types

### **UNIT-II**

Body Language: Importance, Gestures, Eye Contact, Body Postures

### **UNIT-III**

Personal Abilities: Ability to assess potential, Personal Skills, Self-Awareness

### **UNIT-IV**

Confidence Building: Meaning, Importance, Self-esteem, Confident behaviour

## **CERTIFICATE COURSE ON BIOTECHNIQUES**

### **UNIT-I**

Chemical and Biological assays (in vitro and in vivo assays)

Principles and uses of analytical instruments: Spectrophotometers, ultra-centrifuge, Microscopes.

Cryotechniques : Cryopreservation for cells, tissue, organisms, Cryotechniques for microscopy.

### **UNIT-II**

Separation techniques in biology: Molecular separations by chromatography, electrophoresis, precipitation etc., Cell separation by flow cytometry, density gradient centrifugation, and affinity adsorption, Biosensors.

## **CERTIFICATE COURSE ON ECONOMIC BOTANY**

### **UNIT-I**

Cereals and Legumes: General Account, Importance to Man and ecosystem

Morphology and processing of sugarcane, Products and by-products of Sugarcane Industry

Listing of Important spices (fennel, saffron, clove and black pepper) and their economic importance

### **UNIT-II**

Beverages: Tea, Coffee (Morphology, Processing and Uses)

Oils and Fats: General description, extraction, their uses and health implications

Medicinal Plants: with special reference to Cinchona, Digitalis, Papaver and Cannabis



**CERTIFICATE COURSE ON**  
**PLANT TISSUE CULTURE AND NURSERY**

**UNIT-I**

Introduction to Plant Tissue Culture  
Laboratory Design and Sterilization Technique  
Tissue Culture Media and Preparation

**UNIT-II**

Concepts of Tissue culture  
Initiation of Plant Tissue  
Techniques in Plant Tissue Culture

**CERTIFICATE COURSE ON HUMAN VALUES**

**UNIT - I**

Understanding the need, basic guidelines, content and process for Value Education  
Continuous Happiness and Prosperity- A look at basic Human Aspirations  
Right understanding, Relationship and Physical Facilities  
Understanding Happiness and Prosperity correctly- A critical appraisal of the current scenario  
Method to fulfill the above human aspirations: understanding and living in harmony at various levels.

**UNIT -II**

Harmony and Integrity  
Fundamental Duties: Duty to Conserve Environment, Duty to protect National Heritage, Duty to respect Elders, Duty to honor National Song/ Anthem/ Flag  
Understanding the Body as an instrument of 'I' (I being the doer, seer and enjoyer)  
Understanding the characteristics and activities of 'I' and harmony in 'I'

**UNIT - III**

Understanding Harmony in the family – the basic unit of human interaction  
Understanding values in human-human relationship; meaning of *Nyaya* and program for its fulfillment to ensure; *Ubhay-tript*; Trust (*Vishwas*) and Respect (*Samman*) as the foundational values of relationship

**UNIT - IV**

Understanding the harmony in the Nature  
Interconnectedness and mutual fulfillment among the four orders of nature- recyclability

and self-regulation in nature

## UNIT - V

Natural acceptance of human values

Definitiveness of Ethical Human Conduct

Basis for Humanistic Education, Humanistic Constitution and Humanistic Universal Order

Competence in professional ethics:

- Ability to utilize the professional competence for augmenting universal human order
- Ability to identify the scope and characteristics of people-friendly and eco-friendly production systems,
- Ability to identify and develop appropriate technologies and management patterns for above production systems.

### Reference Material

1. A.N. Tripathy, 2003, *Human Values*, New Age International Publishers.
2. R.R Gaur, R Sangal, G P Bagaria, A foundation course in Human Values and professional Ethics, Excel books, New Delhi, 2010, ISBN 978-8-174-46781-2
3. The teacher's manual, R.R Gaur, R Sangal, G P Bagaria, A foundation course in Human Values and professional Ethics – Teachers Manual, Excel books, New Delhi, 2010
4. B L Bajpai, 2004, *Indian Ethos and Modern Management*, New Royal Book Co., Luck now. Reprinted 2008.
5. PL Dhar, RR Gaur, 1990, *Science and Humanism*, Commonwealth Publishers.
6. Sussan George, 1976, *How the Other Half Dies*, Penguin Press. Reprinted 1986, 1991
7. Ivan Illich, 1974, *Energy & Equity*, The Trinity Press, Worcester, and HarperCollins, USA
8. Donella H. Meadows, Dennis L. Meadows, Jorgen Randers, William W. Behrens III, 1972, limits to Growth, Club of Rome's Report, Universe Books

# **CERTIFICATE COURSE ON VEDIC MATHEMATICS**

## **UNIT I**

Introduction, historical and cultural aspects, vertically and crosswise sutra, algebraic products, addition and subtraction using the vinculum, multiplying with group of figures, decimal numbers, agrumental division, reciprocals, squaring and square roots, combined arithmetic operations, sum of squares, combined addition and division

Evaluation of determinants, reducing the order of determinant, evaluation of determinant by row operations, evaluation of determinant by column operations, the solution of simultaneous linear equations, elimination of one and two variables.

## **UNIT II**

Inversion of matrices, minors and co-factors, method to calculate inverse of matrices, curve fitting, exact curve fitting, regression, least squares quadratic regression of  $y$  on  $x$ , regression line of third degree, evaluation of logarithms ad exponentials

Transformations of equations, change of roots of equations, to obtain an equation with roots opposite in sign from given equation, equation with reciprocal roots, multiple roots, equation with increased roots by some value, equation with reduced roots.

## **UNIT III**

Evaluation of sine and cosine functions for any angle, inverse sine, inverse cosine, inverse tangent function, hyperbolic functions, polynomial equations, equation with roots between 1 and -1, sine and cosine expansion series

Introduction to transcendental equations, solution of transcendental equations, cube roots, solution of cubic equations, solution of higher order equations.

## **UNIT IV**

Introduction to functions, functions of polynomials, division of two polynomial functions, reciprocal of function, square root of function, cube root and fifth root, powers of function, natural logarithms and exponentials of polynomial, cosine and sine of polynomial, Function with two variables, square and square roots of bipolynomials, division, powers of  $P(x,y)$ , natural logarithms and exponentials of  $P(x.,y)$ , sine and cosine of bipolynomial.

Introduction to differential equations, linear and nonlinear differential equations, degree and order of differential equations, solutions of linear and nonlinear differential equations, integro-differential equations, solution of integro-differential equations, Introduction to partial differential equations, solution of partial differential equations.

**Reference Books:**

1. A.P Nicholas, K.R. Williams and J. Pickles; Vertically and Crosswise applications of the Vedic Mathematics Sutra, Inspiration Books Publiucation,1984.
2. Swami Bharati krsna Tirthaji; Vedic Mathematics.

**DIPLOMA COURSE IN ADVANCED MATHEMATICS****UNIT-I**

Introduction to statistics: Measures of central tendency, Measures of dispersion, Measures of skewness, Index numbers, Analysis of time series, Correlation Analysis, Regression analysis, Interpolation and Extrapolation.

**UNIT-II**

Introduction to probability: Theory of probability, probability distributions, binomial distribution, poisson distribution, normal distribution, Sampling techniques, Applications of operational research techniques, Theory and association of attributes, Consistency of data, Business forecasting.

**UNIT-III**

Variational problems with fixed and moving boundaries: Functionals, Euler's equation, Necessary and sufficient conditions of extremum, Isoperimetric problems, Lagrange's equation, generalized boundary and transversality conditions for the variable end points, one sided variation.

**UNIT-IV**

Applications of derivatives: Extreme values of functions, The mean value theorem, Monotonic functions and the first derivative test, concavity and curve sketching, applied optimization problems, Newton's method, antiderivatives.

Applications of definite integral: Volume by slicing and rotation about axis, volumes by cylindrical shells, Lengths of plane curves, moments and center of mass, areas of surfaces of revolution and Theorems of Pappus.

**References:**

- Gupta, S. P. "Statistical Method. Sultan Chand & Sons Publisher, New Delhi,2004.
- Kapoor, V. K., and S. C. Gupta. Fundamentals of Mathematical Statistics. Sultan Chand, 1980.
- Elsgolc, Lev D. Calculus of variations. Courier Corporation, 2012.

- Kot, Mark. A first course in the calculus of variations. Vol. 72. American Mathematical Society, 2014.
- Larson, Ron, and Bruce H. Edwards. Calculus of a single variable. Cengage Learning, 2013.
- Bittinger, Marvin L., David J. Ellenbogen, and Scott J. Surgent. Calculus and its applications. Pearson Higher Ed, 2015.

## **CERTIFICATE COURSE ON SOCIAL RESPONSIBILITY**

### **UNIT-I**

Social Responsibility: Meaning, Definition, Nature and Scope, Basis and Steps of Development

### **UNIT-II**

Social Responsibility and Humanity: Ethics, Morality, Values, Culture, Community and Organization

### **UNIT-III**

Structure of Responsibility: Family, Community, Caste, Peer Groups and Institutions  
Kinds of Social Responsibility: Legal, Ethical and Economic

### **UNIT-IV**

Social Responsibility and Social Change: Society and Process, Concept and conditions of Social Change, determinants of Social Change

### **UNIT-V**

Social Responsibility and Environment: Population, Custom Process, Social Order and Social Evaluation

### **Suggested Readings**

- Cynthia Jones. A Future for Everyone: Innovative Social Responsibility, Social Responsibility and Community Partnership, New York, 2003, Routledge Publications.
- Ann Elizabeth. Responsibility: The Many Faces of a Social Phenomenon, London and New York, 2001, Routledge Publications.
- William Sweet. The Basis of Ethics, Marquette University Press, Milwaukee, 2001.
- John Alessio. Social Problems and Inequality. Routledge Publications, London, 2011.
- Nathaniel Branden. Taking Responsibility: Self-Reliance and the Accountable Life. Touchstone Publications. 1997.

## **CERTIFICATE COURSE ON ECONOMIC ZOOLOGY**

### **UNIT-I**

Sericulture: Types of silk, species of silk moth (scientific names), Silkworms and their host plants, mulberry silk worm culture, natural enemies and diseases of silkworm and their control.

### **UNIT-II**

Apiculture: Species of honey bees in India, life history of *Apis cerana indica*, agriculture techniques, bee products and their uses, natural enemies and diseases of honey bee and their control; Wool and fur industry; Leather industry; Pharmaceuticals from animals: animal oriented medicines

## **CERTIFICATE COURSE IN DETECTION OF ADULTERANTS IN COMMON FOOD ITEMS**

### **UNIT-I**

Definition of adulteration and its types

Past history of adulteration in India

### **UNIT-II**

Methods for detection of common adulterants in the following food items:

- Milk and Milk products
- Oil and Fats
- Sweetening agents
- Food Grains
- Spices

### **Practical**

Practical demonstration of some common tests

**CERTIFICATE COURSE ON**  
**ENTREPRENEURSHIP DEVELOPMENT & MANAGEMENT**

**UNIT-I**

Entrepreneurship Management; Entrepreneurship Development; Basic Concepts; Business Planning

**UNIT-II**

Entrepreneur and the Environment; Incentives and Assurances to Entrepreneur; Problems and Difficulties of Entrepreneur; Successful Entrepreneurs; Women Entrepreneurs

**UNIT-III**

Project Management; Estimating and Financing of Funds; District Industries Centre and EDP; Training and Development; Case Studies

**CERTIFICATE COURSE IN FRENCH LANGUAGE**

**UNIT I**

- A) Introduction to French language, civilization & culture.
- B) Tenses, Alphabets, Numerals.

**UNIT II**

- A) Ten general questions pertaining to the prescribed textbook.
- B) Ten questions on French civilization in the form of fill in the blanks/short answers/multiple choice.
- C) Making five sentences with idioms and expressions based on the textbook.
- D) Questions on applied grammar from the textbook.

**UNIT III**

- A) Comprehension of an unseen text.
- B) Dialogue/Composition/Letter of about 100 words

**UNIT IV**

- A) Reading.
- B) Brief conversation in French.

**Suggested Reading:**

Campus-I, Jacky Giradet, Jacques Pécheur

## CERTIFICATE IN SOFTWARE MANAGEMENT

<b>Paper Code</b>	<b>Nomenclature of the paper</b>	<b>Marks</b>
CISM-CSF-151	Introduction to Computers	100 Marks
CISM-CSF-152	Logic Building with HTML & JavaScript	
CISM-CSF-153	Visual Programming	
CISM-CSF-154	Networking Concepts	
CISM-CSF-155	Working with Access, Oracle, XML Databases	
CISM-CSF-156	Practical	100 Marks
CISM-CSF-157	Project Work	100 Marks
	Total	300 Marks



**CERTIFICATE COURSE ON**  
**TALLY, ERP AND BUSINESS ACCOUNTING**

**UNIT 1**

Basic accounting -: introduction to tally, types of accounts, accounting principles of concept, modes of accounting, rules of accounting, double entry system of book keeping.

Fundamentals of tally ERP9: introduction to tally, history of tally ERP9, company features, configuration, getting functions with ERP 9, Creation and setting up of a company under Tally.ERP9, tally vault, password setting, split up data

**UNIT 2**

Accounting masters in Tally.ERP9: charts of group, groups, multiple groups, ledgers, multiple ledgers.

Inventory masters in Tally.ERP9: stock groups, multiple stock groups, stock categories, multiple stock categories, units of measure, godowns and stock items

Voucher entries in Tally.ERP9: introduction, types of vouchers, charts of vouchers, inventory voucher and invoicing.

**UNIT 3**

Advance accounting in Tally.ERP9: bill wise details, cost center and cost categories, multiple currency, interest calculations, budget and control, bank reconciliation.

Advance inventory in Tally.ERP9: order processing, re order levels, batch wise details, bills of material, price lists, zero value entries, additional costs details, POS

**UNIT 4**

Payroll accounting in Tally.ERP9: introduction to payroll, payroll masters, payroll vouchers, employee groups, employee categories, overtime payments, gratuity, bonus, loans, ESI, provident fund, pension, commission.

**UNIT 5**

Report generation in Tally.ERP9: financial statements - trading account, profit and loss account and balance sheets, inventory books and reports, exceptions reports, statutory reports, payroll reports, list of accounts, stock summary.

**REFERENCES:**

- Manoj bansal and ajay sharma, computerized accounting system , sahitya bhavan publications.
- Asok k nadhani , Tally.ERP9 , BPB publications

- Sushil goel, computerized accounting system ( using Tally.ERP9 ) , Natraj publication house.

**CERTIFICATE COURSE ON**  
**SPOKEN ENGLISH AND COMMUNICATION SKILLS**

**UNIT-I**

Phonetics: Introduction to English Phonetics symbols, Consonants and Vowels, Stress and Intonation

**UNIT-II**

Vocabulary and Word Formation: Learning Vocabulary with the help of root words, Formation of new words by adding Prefixes and Suffixes.

**UNIT-III**

Basic Grammar: Part of speech and their function in spoken and written language, Tenses, Article

**UNIT-IV**

Speaking Skills: Practical English Conversations – Introducing Yourself, Introducing Another Person, Meeting a person first time, Asking a way and giving directions, Giving a message on Phone, Apologizing, Making a Request, Accepting an Invitation, Declining an Invitation, Appreciating Something, Ordering a Meal at a Hotel, Attending an Interview for Job

**UNIT-V**

Essentials of Spoken English: Idiomatic Expression, Words often Mispronounced, Examples of Problem Words with their Correct and Incorrect Usage.

**UNIV-VI**

Communication Skills: Writing Application, Notice, E-mails and CV Writing

**CERTIFICATE COURSE ON**  
**ADVERTISING AND SALES MANAGEMENT**

**UNIT-I**

Fundamentals of Advertising  
Media selection,  
Media Planning,  
Media Scheduling and Strategy

## **UNIT-II**

Advertisement Copy for Print Media

Copywriting for Radio, T.V. and Outdoor Media

## **UNIT-III**

Advertising Art: Preparation of Layout

Selling Strategies

## **UNIT-IV**

Designing Advertisements

Case Studies

Project Work

## **CERTIFICATE COURSE ON RURAL MARKETING**

### **UNIT I**

Rural marketing: meaning, features and significance of Rural Marketing in India, Rural marketing environment, distinction between rural and urban market; Rural market opportunities and challenges; Understanding rural consumer behaviour: buying decision process, factors influencing decision making process, buying characteristics of rural consumers.

### **UNIT II**

Rural Marketing Mix: Product innovations and modifications for Rural Markets, challenges in rural marketing. Branding strategies for rural markets, challenges in branding; challenges in pricing for rural market; problems and solutions in distribution for rural market.

### **UNIT III**

Agriculture Marketing: definition, scope and objectives, role of agriculture in Indian economy; role of government in agriculture marketing, constraints in agriculture marketing

### **UNIT-IV**

Agribusiness: challenges and scope; Marketing of agriculture inputs and outputs; Role of government in pricing of Agri-products; Supply chain management in Agri business: cold chains, organised procurement and warehousing.

#### **Practical work:**

1. Case discussion is compulsory at the end of every unit.
2. Survey related problems in selling agricultural produced.
3. Research on buying behaviour of farmers concerning agricultural implements.
4. Group discussion

### **Suggested Readings:**

1. Y. Ramkishen (2005), *New Perspectives in Rural & Agricultural Marketing*, Jaico Publishing House.
2. Dogra, Balram & Ghuman, K (2007) *Rural Marketing: Concept and Practices*, Tata McGraw Hill, New Delhi.
3. Badi, V. Ravindranath & Badi, V. Naranyansa (2011), *Rural Marketing* (2nd ed.), Himalaya Publishing House, New Delhi.
4. Gopaldaswamy, T P (2009) *Rural Marketing-Environment, Problems and Strategies*, Vikash Publications, New Delhi.
5. Habeeb & Rehman, *Rural Marketing in India*, Himalaya Publishing House, New Delhi.

## **CERTIFICATE COURSE ON INTERPERSONAL RELATIONSHIP**

### **Theory**

#### **UNIT I**

**Social Psychology:** Interpersonal interaction; Man as social animal; social agencies

#### **UNIT II**

**Interpersonal relationship:** Meaning of interpersonal relationship ; need of interpersonal interactions, types of interpersonal relationships

#### **UNIT III**

**Team Building:** role of interpersonal relationship in team building; leadership qualities; good listener

#### **UNIT IV**

**Issues and conflicts in interpersonal relationships:** types of conflicts; overcoming or resolving conflicts

### **Practical**

1. Group Discussion
2. Stage fright
3. Writing and responding to mail
4. Sociometry

## Reference Material

1. Rutherford, Andrea J. Basic Communication Skills for Technology: Second Edition. Delhi: Pearson Education, 2007.
2. Seely, John. Writing Reports. New York: Oxford University Press, 2002.
3. Sharma, R. C. & Krishna Mohan. Business Correspondence and Report Writing: Third Edition. New Delhi: Tata McGraw-Hill Publishing company Limited, 2007.
4. Thill, John V. & Courtland L. Bovée, Excellence in Business Communication, 10th edition. Boston : Pearson, 2013.
5. Thorpe, Edgar & Showick Thorpe. Winning at Interviews. 2nd Edition. Delhi: Dorling Kindersley, 2006.
6. Turton, N. D. & J. B. Heaton. Longman Dictionary of Common Errors. Essex: Longman, 1987. First Indian Edn. 1998.

## **DIPLOMA COURSE ON INTERPERSONAL RELATIONSHIP**

### **Theory**

#### **UNIT I**

**Behaviour types:** types of personality; recognizing behaviour types; ego management in relationship

#### **UNIT II**

**Confidence building:** role of mentor; role models-teachers, parents and significant others

#### **UNIT III**

**Social support:** need of belongingness; role of empathy, loneliness, and rejection in social settings

#### **UNIT IV**

**Ethics in interpersonal relationship:** concept of social norm; following ethical boundaries in interpersonal relationships

### **Practical**

1. Choice of words
2. Tone of communication
3. Public speaking
4. Facing Interview

## **Reference Material**

1. Rutherford, Andrea J. Basic Communication Skills for Technology: Second Edition. Delhi: Pearson Education, 2007.
2. Seely, John. Writing Reports. New York: Oxford University Press, 2002.
3. Sharma, R. C. & Krishna Mohan. Business Correspondence and Report Writing: Third Edition. New Delhi: Tata McGraw-Hill Publishing company Limited, 2007.
4. Thill, John V. & Courtland L. Bovée, Excellence in Business Communication, 10th edition. Boston : Pearson, 2013.
5. Thorpe, Edgar & Showick Thorpe. Winning at Interviews. 2nd Edition. Delhi: Dorling Kindersley, 2006.
6. Turton, N. D. & J. B. Heaton. Longman Dictionary of Common Errors. Essex: Longman, 1987. First Indian Edn. 1998.

## **CERTIFICATE COURSE ON COMMUNITY WELFARE SCHEMES**

### **UNIT 1- WOMEN**

Beti Bachao, Beti Padhao Scheme

SABLA Scheme

Ujawala Scheme

Swadhan Greh Yojana

The Protection of Children from Sexual Offences (POCSO) Act, 2012

### **UNIT 2- HEALTH & FAMILY WELFARE**

ASHA Incentive Scheme

Janani Suraksha Yojana

Evam Parivar Kalyan Yojana

Ayushman Bharat (2018)

Pradhan Mantri Jan Dhan Yojana

### **UNIT 3- EDUCATION**

Stipend Schemes for Schedule Caste Students Pursuing Higher Education in Government Colleges

Sukanya Samridhi Yojana

Juvenile Justice (Care and Protection of Children) Act, 2015

Pradhan Mantri Kaushal Vikas Yojana

## **UNIT 4- OLD AGE**

Old Age Sammaan Allowance Scheme

Legal Aid to Senior Citizens

Schemes Related to Establishment of Senior Citizens Clubs (Haryana)

### **References:**

1. M.S. Sreerekha, State Without Honour: Women Workers in India's Anganwadis, Hardcover, 2016
2. Rakesh Saxena, Government Schemes, Missions, Campaigns And Programmes In India, Paperback, 2018
3. Government Welfare Schemes & Policies in India for Competitive Exams. Front Cover · Disha Experts. Disha Publications, 2019
4. Empowerment of Women: A Sociological Analysis of Tribal Welfare Schemes in Kargil, Asifa Munjkhal, Jaykay Books, 2010

## **CERTIFICATE COURSE ON DEFENCE STUDIES**

### **UNIT 1**

Key concepts of security, National Security, Regional Security, Comprehensive Security, common Security, Equal Security

### **UNIT 2**

National Security Objective: Core values, National Interests

### **UNIT 3**

Challenges to Security; Individual, Sub-National, National, Regional and International Levels

### **References:**

1. Dolly Arora, Internal Security in India.
2. Major R.C. Misra, A Hand Book of NCC (Kanti Prakashini, U.P).
3. C. Northcote Parkinson & MK. Rustogi, Understanding Management (New Delhi: Vision Books, New Delhi).

## **CERTIFICATE COURSE ON NET BANKING**

### **UNIT-1**

Electronic funds transfer systems – NEFT, RTGS Information Technology, Internet, E-mail.

### **UNIT-2**

Electronic Banking- Core Banking, Banking Technology, Teller Machines at the Bank Counters, ATMs – Anywhere Anytime Banking, Electronic Payment systems, Online enquiry and update facilities

### **UNIT-3**

Principles of lending – various credit Products/ Facilities, working capital and term loans

### **UNIT-4**

Opening of accounts for various types of customers - Minors, Joint account holders, HUF, Firms, Companies

#### **Suggested Readings:**

1. Bhushan Y.K “Indian Economy”, Sultan Chand, New Delhi (2010) (Text Book)
2. Kuchhal S.C. “Industrial Economy of India”, Sultan Chand, 2007
3. Dutt&Sundaram “Indian Economy”, Sultan Chand & Co., New Delhi 2010
4. Maheswari S.N. “Indian Banking Law & Practice”, Kalyani, Ludiyana

## **MOOC**

### **UNIT-I**

#### **Blender**

1. Hardware requirement to install Blender
2. Installation process for Windows
3. 3D Cursor
4. Moving in 3D space
5. Camera view settings
6. The Blender Interface
7. How to change Window types in Blender
8. Types of Windows file Browser info Panel
9. Types of Windows User Preference
10. Types of Windows Outliner
11. Types of Windows Properties



## **Drupal**

1. Overview of Drupal
2. Content Management in Admin Interface
3. Configuration Management in Admin Interface
4. Creating Basic content
5. Editing Existing content
6. Creating New Content types
7. User group and Entity Reference
8. Managing content
9. Creating Dummy content
10. Modifying the display of content
11. Displaying contents using views
12. Table of Fields with Views
13. Controlling display of images
14. Adding Functionalities using Modules
15. Finding and evaluating modules
16. Modifying the page layout
17. Menu and end points
18. Styling a page using themes

## **UNIT-II**

### **Introduction to Computers**

1. Getting to know Computers
2. Printer Connection
3. Introduction to Gmail
4. Compose options for Email
5. Google Drive Options

### **KTurtle**

1. Introduction to KTurtle
2. Grammar of TurtleScript
3. Special Commands in KTurtle
4. Programming Concepts
5. Control Execution

6. Question Glues
7. Common Errors in KTurtle

### **UNIT-III**

#### **LibreOffice Suite Calc**

1. Introduction to LibreOffice Calc
2. Working with Cells
3. Working with sheets
4. Formatting Data
5. Basic data manipulation
6. Working with data
7. Using charts and graphs
8. Images and graphics
9. Advanced formatting and protection
10. Formulas and functions
11. Linking Calc data

#### **LibreOffice Suite Base**

1. Introduction
2. Tables and Relationships
3. Create a simple form
4. Modify a simple form
5. Build a Complex form with form controls
6. Add list box form control of a form
7. Add push button to a form
8. Enter and update data in a form
9. Create queries using design
10. Create reports
11. Modify a report
12. Create tables
13. Create subforms
14. Create simple queries in SQL view
15. Access data sources
16. Database maintenance

17. Indexes table filter SQL command window
18. Database design purpose organize tables

### **LibreOffice Suite Draw**

1. Introduction
2. Create simple drawings
3. Basics of working with objects
4. Fill objects with color
5. Insert text in drawings
6. Common editing and print functions
7. Polygons and curves
8. Edit curves and polygons
9. Flow chart connectors glue points
10. Working with objects
11. Import and export images
12. Working with 3D objects

### **LibreOffice Suite Impress**

1. Introduction
2. Creating a presentation document
3. Viewing a presentation document
4. Inserting pictures and objects
5. Printing a presentation document
6. Slide master slide design
7. Custom animation
8. Slide creation
9. Presentation notes

### **LibreOffice Suite Writer**

1. Introduction
2. Typing text and basic formatting
3. Inserting pictures and objects
4. Viewing and printing a text document
5. Using search replace auto correct
6. Typing in local languages

7. Using track changes
8. Headers ,footers and notes
9. Creating newsletter

#### **UNIT-IV**

#### **Linux**

1. Ubuntu Desktop 16.04
2. Desktop customization 16.04
3. Installing software 16.04
4. Basic commands
5. General purpose utilities in Linux
6. File system
7. Working with regular files
8. File attributes
9. Redirection pipes
10. Working with Linux process
11. The Linux environment
12. Basics of system administration
13. Simple filters
14. The grep command
15. The sed command

### **CERTIFICATE COURSE ON INCOME TAX CALCULATIONS**

#### **UNIT-1**

Basic Concepts, Agriculture Income, Assessment Year, Previous Year, Gross Total Income, Total Income

#### **UNIT-2**

Heads of Income: Salaries, Income from house property, Profits and gains of Business or Profession, Capitals Gains & Income from Other Sources

#### **UNIT-3**

Deduction under section 80C to 80U in computing Total Income, Computation of Total Income of an Individual & HUF

## UNIT-4

Computation of Total Income of a Firm and Companies, Deduction of tax at source, Advance payment of tax

### **Suggested Readings:**

1. Singhania V.K.: Student's Guide to Income Tax.
2. Prasad, Bhagwati: Income Tax Law & Practice.
3. Mehrotra H.C.: Income Tax Law & Account.
4. Dinker Pagare: Income Tax Law and Practice. 5. Girish Ahuja and Ravi Gupta: Systematic Approach. 6. Chandra Mahesh and Shukla D.C.: Income Tax.

## **CERTIFICATE COURSE ON CASE STUDY AND INTERVIEW**

### UNIT-1

**Case Study:** Meaning and Introduction to case, Problem Identification, analysis and solution of case, Understanding the role of instructor in case, How to develop and brought up your own case.

### UNIT-2

**Interview-** Meaning, types, importance and process of Interview, Techniques of facing the interview, Interview preparations, Communication skills, better usage of English language. Public Speaking, Preparing the Speech, Organising the Speech, Special Occasion Speeches.

### UNIT-3

**Self-Management-** Identifying one's strengths and weaknesses • Planning & Goal setting • Managing self – emotions, ego, pride, Creative thinking, problem solving and decision-making, Leadership, Personality development, Ability to bear stress and Negotiation, Presentation ,Negotiation and listening skills.

### UNIT-4

#### **Practical sessions:**

Resume Preparation, GD participation/facing techniques, Mock Interviews, Conduction of role play sessions.

#### **References:**

1. Sethi, J & et al. A Practice Course in English Pronunciation, Prentice Hall of India, New Delhi
2. Soft skills Training – A workbook to develop skills for employment by Fredrick H. Wentz
3. Sen, Leena. Ps, Prentice Hall of India, New Delhi.
4. Business Communication, P.D. Chaturvedi, Pearson Education

## **CERTIFICATE COURSE ON STRESS MANAGEMENT**

## **UNIT-I**

**Stress:** Meaning and definition of stress; concept of stress and stressors; types of stress

## **UNIT-II**

**Symptoms and causes of stress:** physical, cognitive and behavioral symptoms of stress; work life balance; work stress; family stress

## **UNIT-III**

**Effects of stress:** physical, psychological, emotional, and behavioral effects of stress

## **UNIT-IV**

**Stress management:** concept of coping with stress; stages of stress management; lifestyle management

### **Reference Material:**

1. Bond M. (1988) Stress and Self Awareness: a Guide for Nurses, Heinemann
2. Bradley D. (2000) Hyperventilation Syndrome, Kyle Cathie Ltd.
3. Brookes D. (1997) Breathe Stress Away, Hollenden Publishing.
4. Chaitow L., Bradley D., Gilbert C. (2002) Multidisciplinary Approaches to Breathing Pattern Disorders, Churchill Livingstone.
5. Cooper C.L., Cooper R.D., Eaker L.H. (1987) Living with Stress, Penguin.
6. Cooper C.L. (1995) Handbook of Stress Medicine and Health, CRC Press.

## **CERTIFICATE COURSE ON**

### **AWARENESS OF CONSUMER'S RIGHTS IN SANSKRIT SHASTRAS**

#### **UNIT-I**

Sanskrit Shastras: A General Introduction

#### **Unit-II**

Consumer Rights: A Brief Description

#### **UNIT-III**

Consumer Rights in Present Political System

#### **UNIT-IV**

Description of Consumer Rights as mentioned in Sanskrit Shastras (with Special reference to *Manusmriti*, *Kautilya Arthshastra* and *Mahabharata*)

#### **UNIT-V**

Consumer Rights mentioned in Sanskrit Shastras and in Indian constitution: A Comparative View

## **CERTIFICATE COURSE ON MUSHROOM CULTIVATION**

### **UNIT I**

- Introduction, nutritional value, medicinal value and advantages of mushrooms
- Systematic position, morphology, distribution, structure and life cycle of Agaricus.
- Cultivation: Paddy straw mushroom – substrate, spawn making.

### **UNIT II**

- Maintenance, processing and storage of mushroom.
- Diseases- Common pests, disease prevention and control measures.

### **REFERENCES**

1. Pandey B P 1996. A textbook of fungi. Chand and company N Delhi.
2. Kaul T N 2001. Biology and conservation of mushrooms. Oxford and IBH publishing company N.Delhi

### **STRESS MANAGEMENT THROUGH RAGAS**

#### **PART - 1**

1. संगीत के विषय में जानकारी
2. संगीत में थाट-राग पद्धति
3. थाटों से उत्पन्न विभिन्न राग
4. मनोवृत्तियों पर रागों का प्रभाव

#### **PART - 2**

5. तनाव के क्षणों में संगीत की भूमिका
6. रे ध कोमल स्वरो वाले राग

#### **PART - 3**

7. ग नी कोमल स्वरो वाले राग
8. रे ध शुद्ध स्वरो वाले राग

#### **PART - 4**

9. तीव्र मध्यम का मनोवृत्ति पर प्रभाव
10. मन को शांत एवं एकाग्र करने वाले राग

## **CERTIFICATE COURSE ON DESIGNING OF WORKING MODEL**

### **UNIT 1**

Basic concepts and definition of working models, Difference between working and non-working models and their significance, steps to effective model design, Types of Models , Significance of working models in daily life

### **UNIT 2**

Basic Principle, Construction and working of motor, Different parts of electric motor and their function. Basic principles of electromagnetism.

Basic Principle, Construction and working of Electromagnet, Applications of electromagnet

### **UNIT 3**

Conventional and non-conventional energy sources, Definition and difference between them, Advantages and disadvantages of using conventional and non-conventional energy sources, working models Based on non-conventional Energy sources e.g. Solar cooker, solar Panel, Wind mills etc.

### **UNIT 4**

Basic Principle, Construction and working of Telescope

Basic Principle, Construction and working of transformer (Step-up and Step-down), Efficiency of a transformer, one phase transformer, three phase transformer and their comparison.

#### **References:**

1. "Electronic Devices and Circuit Theory" by Robert L. Boylestad
2. "Microelectronic Circuits" by Sedra and Smith.
3. "Integrated Electronics" by Millman and Halkias

## **CERTIFICATE COURSE IN**

## **SELF SAFETY IN USING ELECTRICAL APPLIANCES**

### **UNIT 1**

Electrical elements and measurement: Basic knowledge of electrical circuit elements and parameters, measurement methods and measuring instruments used for electrical parameters i.e. current, voltage, power in DC networks; active power, reactive power, energy, frequency, power factor in single and three phase AC networks, power factor correction, Reactive power compensation.

### **UNIT 2**



Transformer: Basic Principle, types, construction, equivalent circuit, Voltage regulation, Parallel operation, knowledge of erection and commissioning, pre-commissioning tests and test equipments used, transformer oil test and analysis, various transformer protections and relays used, knowledge of fire safety of transformer, preventive maintenance of transformer.

### **UNIT 3**

Earthing: Types of system earthing, fault level calculations, type of earthing – rod/ plate, earth conductor sizes, earth resistance measurement and test equipment used, earthing of substation apparatus, transmission and distribution lines/towers, earthing at consumer premises, earthing of industrial and domestic equipment.

### **UNIT 4**

Safety from electricity and fire: Personal Protective equipments (PPE's) used in connection with safe use of electricity like Hand Gloves, Rubber Shoes, Waist belt, , earthing rod, Goggles etc., Safe working clearances for different voltage levels, fire extinguishers used for different applications, knowledge of Static electricity, Lightning protection, Electrical Safety Audit, elementary knowledge of first aid

## **CERTIFICATE COURSE ON** **HISTORY FOR CIVIL SERVICES AND OTHER COMPARATIVE** **EXAMINATIONS**

### **UNIT- 1**

Harappan Civilization; Vedic Culture: Polity, Society, Religion and literature;Mouryan Empire.

### **UNIT -2**

Gupta Period;Delhi Sultanate: Rise and fall; Mughal Period:Administration; social and economic life. Art and Architecture.

### **UNIT -3**

Uprising of 1857: Causes, Nature and Results; Rise of National Conciseness in India;Drain of Wealth

### **UNIT -4**

Indian National Movement: Gandhian Movements; Subhas Chandra Bose; Bhagat Singh; Partition of India and Independence.

#### **Suggested Readings:**

- Bipan Chandra, India's struggle for Independence.
- Satish Chandra, Medieval India (vol.-1-2).

- Upinder Singh, Ancient and pre-Medieval Indian History.
- Sumit Sarkar, Modern India.
- Romila Thapar, Ancient India.
- Harish Chander Verma, Medieval India (Vol, -1-2).

## **CERTIFICATE COURSE ON PHOTOSHOP**

### **UNIT – I**

- Introduction to Photoshop
- Changing the image size
- Working with Layers
- Adjusting the image quality
- Making selections
- Retouching images
- Using colors and adding text & shapes

### **UNIT – II**

- Combining images
- Applying filters
- Cropping & straightening a photo to improve composition
- Correcting an unwanted color cast
- Improving contrast and brightness in a photo with levels
- Adjusting the intensity of colors in a photo
- Sharpening a photo to bring out detail
- Selections & its need

### **UNIT – III**

- Simple selection tools
- Combining selections
- Select & change part of an image
- Saving photos in the best format
- Selecting subject
- Cleaning up a selection in the select and mask workspace
- Save & re-use a selection
- Making layer mask & using it to combine images

## UNIT – IV

- Using layer mask with selections
- Use of layer masks to adjust parts of a photo
- Fine tune layer masks
- Adding photos into a composite & building a composite with layer masks
- Combining images with a smooth transition
- Creating composite with blend modes
- Matching color in a composite

## **CERTIFICATE COURSE ON DISASTER MANAGEMENT**

### UNIT-I

**Natural Disasters-** Meaning and nature of natural disasters, their types and effects

Hydrological Disasters - Flood, Flash flood, Drought, cloud burst

Geological Disasters- Earthquakes, Tsunamis, Landslides, Avalanches, Volcanic eruptions, Mudflow

### UNIT-II

#### **Types of Natural Disasters**

Wind related- Cyclone, Storm, Storm surge, Tidal waves, Heat and cold Waves, Climatic Change

Global warming, Sea Level rise , Ozone Depletion

### UNIT-III

#### **Man – made Disasters**

CBRN – Chemical disasters, biological disasters, radiological disasters, nuclear disasters

Fire – building fire, coal fire, forest fire, Oil fire

### UNIT-IV

#### **Types of Man – made Disasters**

Accidents- road accidents, rail accidents, air accidents, sea accidents

Pollution - air pollution, water pollution

Deforestation, Industrial waste

#### **Suggested Readings:**

- Dr. Mrinalini Pandey Disaster Management Wiley India Pvt. Ltd.
- Tushar Bhattacharya Disaster Science and Management McGraw Hill Education (India) Pvt. Ltd.

- Jagbir Singh Disaster Management : Future Challenges and Opportunities K W Publishers Pvt. Ltd.

## **CERTIFICATE COURSE ON FIRST AID TRAINING**

### **UNIT-1**

Action taken to assist in situations requiring first aid

Emergency first aid

1. Basic resuscitation: adult, child and infant, also includes early defibrillation of an adult
2. First aid of an unconscious casualty
3. Other emergency first aid situations

### **UNIT-2**

Relevance of the mechanism of injury to the injury sustained

1. Examining a casualty for first aid
2. Chest, abdominal and pelvis injuries, internal bleeding
3. Spinal and limb injuries
4. Head and facial injuries

### **UNIT-3**

Observing and monitoring a casualty's condition

1. First aid positions, protecting a casualty, and moves and transport
2. First aid and prevention
3. of injuries caused by cold
4. of conditions caused by heat

### **UNIT-4**

Group-specific special topics (selection)

1. Accumulating first aid and health knowledge
2. Promoting one's own health and safety
3. Optional topics according to the needs of the target group

## References:

- Markenson D, Ferguson JD, Chameides L, Cassan P, Chung KL, Epstein J, et al. Part 17: First aid: 2010 American Heart Association and American Red Cross Guidelines for First Aid. *Circulation*.
- Mejia CR, Quezada-Osoria C, Moras-Ventocilla C, Quinto-Porras K, Ascencios-Oyarce C. Level of knowledge in medical emergencies among medical students of Peruvian universities. *Rev Peru Med Exp Salud Publica*.
- Chandrasekaran S, Kumar S, Bhat SA, Saravanakumar, Shabbir PM, Chandrasekaran V. Awareness of basic life support among medical, dental, nursing students and doctors. *Indian J Anaesth*.

## **CERTIFICATE COURSE ON SELF DEFENCE STRATEGIES**

### UNIT-1

#### Introduction

- Introduction to self defence
- Develop skills in situational awareness
- Acquire skills attack response
- Close range and far range

### UNIT-1I

#### Techniques of self defence

- Techniques for eliminating dangers
- Escape techniques and safe training practices
- Skills and strategies for physical defence

#### References

1. Vyas, R.S. (2013): *Self Defence Education for Women A Practical Guide*. Shree Niwas Publication, Jaipur
2. [www.egmed.uni-goettingen.de/index.php](http://www.egmed.uni-goettingen.de/index.php)
3. [en.wikipedia.org/wiki/Self-defense](http://en.wikipedia.org/wiki/Self-defense)
4. [karvamagatoronto.com/womens-self-defense/-canada](http://karvamagatoronto.com/womens-self-defense/-canada)
5. Denise and Groves, Gail. (1987). *Her Wits About Her—Self-Defense Success Stories by Women.*, New York: NY Harper & Row.

#### Additional activity

Training session of self-defence like karate, judo, taekwondo

## **CERTIFICATE COURSE ON MAN AND ENVIRONMENT**

### **Unit I**

Ecology: Definition, principle and scope of ecology, aquatic and terrestrial ecology, freshwater ecology, marine ecology, Community concept, types of community and population growth.

### **Unit II**

Ecosystem components: Producers, consumers and decomposer,  
Food chains, food web and ecological pyramids, Biotic and abiotic components,  
Bioaccumulation and biomagnifications, mass and energy transfer.

### **Unit III**

Ecological pyramids, Hydrological cycles, carbon cycle, oxygen cycle, nitrogen cycle, sulfur cycle, phosphorus cycle, succession process.

#### **Texts/References:**

1. Chapman, J.L. and Reiss M.J. (2005) Ecology Principles and Applications, Cambridge University Press, London.
2. E.P. Odum and G. W. Barrett (2005) Fundamentals of Ecology, Thomson Asia Pvt. Ltd., Singapore.

## **CERTIFICATE COURSE ON GANDHIAN PEACE STUDIES**

### **UNIT I**

Mahatma Gandhi's Life: Family background, Early life and Education in India and England, Impact of various religions.

### **UNIT-II**

Gandhi in South Africa: The origin of Satyagraha, Struggle against Racial discrimination, Injustice and Exploitation.

### **UNIT-III**

Impact on Gandhi: Leo Talstory, John Ruski, Henry David Thorean, Vinobhaa Bhave, Gopal Krishna Gokhle, Aurobindo Ghosh.

### **UNIT-IV**

Main Principles of Gandhi: Truth, Non-Violence, Satyagraha, Swarajya, Religion, Means and Ends.

Internal Assessment Procedure: Viva-Voce, Group Discussion

## **CERTIFICATE COURSE ON WOMEN & DEVELOPMENT**

### **UNIT-I**

Introduction of the concept of Gender, socialization, Empowerment, Equality, Inequality

Concept of Development (Perspectives), dimensions

### **UNIT-II**

Human Development Index (Report) HDI, GDI

Gender Main streaming: issues & Challenges in Indian context

### **UNIT-III**

Gender Development Policies: The United Nations -2030 Agenda-SDG5.

## **CERTIFICATE COURSE IN LITERARY AGES AND MAJOR WORKS**

### **UNIT - 1**

The Age of Chaucer, Chaucer as a Representative Poet, The Canterbury Tales, The Early Renaissance

### **UNIT - 2**

Age of Shakespeare, Historical Plays, Poetry and Essay, Milton, Metaphysical Poets and The Age of Pope

### **UNIT - 3**

Revival of Romanticism, French Revolution, The Victorian Age and its Qualities

### **UNIT - 4**

The Pre-Raphaelite movement, The Oxford Movement, The Modern Age

## **CERTIFICATE COURSE ON ELECTRONICS BOARD DESIGN**

### **UNIT I**

#### **Electronics Board Design Basics**

Evolution and Classification of Printed Circuit Boards, Challenges in Modern PCB, Design and Manufacturing, PCB fabrication, methodologies (SSB, DSB and multilayer board), PCB design considerations/ design rules for analog, digital and power applications, Electromagnetic interference in electronic systems and its impact Analysis of electronic circuit from noise emission point of view (both conducted and radiated emission) cross talk and reflection behaviour of the circuit in time domain, Thermal management of electronic devices and systems.

## **UNIT II**

### **Multilayer PCB Design and High Speed Signaling**

Multilayer PCB design guidelines, Design of Multilayer PCB Stack up, Differential pair routing, Length matching, Generation of different types of reports. Introduction to high speed PCB design, Signal Integrity, Power Integrity and Thermal Analysis, Power distribution and noise, Signaling convention, termination

## **UNIT III**

### **Semiconductor Packages**

Single chip packages or modules. (SCM) Commonly used packages and advanced packages; Materials in packages, Current trends in Packaging, Multichip modules (MCM) - types; System-in package (SIP); Packaging roadmaps; Hybrid

## **CERTIFICATE COURSE ON EMPLOYABILITY SKILLS**

### **UNIT 1**

**Behavioural Skills:** Creating a focused and responsible learning environment; dealing with barriers to employment; Positive body language: adopt and use it appropriately to build a positive impression; Time Management Skills; Stress management techniques; patience; Balance Between Professional & Personal Life

### **UNIT 2**

**Ethics, Values & Social Etiquette:** Increased social initiatives, relationships and networks; value clarification and matching assessment skills into employment; factors that contribute to self-esteem; appropriate clothing choices for interviews and the work site; Acceptance of peers from different cultures and social groups and work with them;

### **UNIT 3**

**Communication Skills:** communicating effectively with employers, supervisors, and co-workers; factors that contribute to confidence; Interview Skills/Confidence Building; Maintaining appropriate eye-contact in building trust and confidence; Role of tone in any communication;

### **UNIT 4**

**Decision Making and Team Building skills:** Decision-making strategies; setting priorities in work and personal life; Collaboration with team to prioritize the common goal; teamwork approach to completing tasks



## **Suggested Readings**

- Brilliant Employability Skills: How to Stand Out from the Crowd in the Graduate Job Market; Book by Frances Trought, Prentice Hall; 1st edition (20 September 2011)
- Skills for Success: Personal Development and Employability by Dr Stella Cottrell (Author), Palgrave Macmillan; New edition (19 May 2010)
- Soft Skills, S.Hariharan, N. Sundararajan and S.P. Shanmugapriya, Vedams eBooks (P) Ltd (New Delhi, India)
- Employability Skills Paperback by Vishnu P. Singh C.Subhas, Kapil Dev , Asian; Latest edition (1 January 2014)

## **CERTIFICATE COURSE ON MARKETING MANAGEMENT**

### **UNIT-I**

Introduction: Concept, nature, scope and importance of marketing; Marketing concept and its evolution; Marketing mix; Strategic marketing planning – an overview. Market Analysis and Selection: Marketing environment – macro and micro components and their impact on marketing decisions; Market segmentation and positioning; Buyer behavior; consumer versus organizational buyers; Consumer decision making process.

### **UNIT-II**

Product Decisions: Concept of a product; Classification of products; Major product decisions; Product line and product mix; Branding; Packaging and labeling; Product life cycle – strategic implications; New product development and consumer adoption process. Pricing Decisions: Factors affecting price determination; Pricing policies and strategies; Discounts and rebates.

### **UNIT III**

Distribution Channels and Physical Distribution Decisions: Nature, functions, and types of distribution channels; Distribution channel intermediaries; Channel management decisions; Retailing and wholesaling. Promotion Decisions: Communication Process; Promotion mix – advertising, personal selling, sales promotion, publicity and public relations; Determining advertising budget; Copy designing and testing; Media selection; Advertising effectiveness; Sales promotion – tools and techniques.

### **Suggested Readings:**

1. Kotlar, Philip, Marketing Management, Prentice Hall, New Delhi.
2. Stanton, Etzel, Walker, Fundamentals of Marketing, Tata-McGraw Hill, New Delhi.
3. Saxena, Rajan, Marketing Management, Tata-McGraw Hill, New Delhi.
4. McCarthy, E.J., Basic Marketing: A managerial approach, Irwin, New York.

**CERTIFICATE COURSE ON**  
**ANALYZING FINANCIAL STATEMENTS**

**UNIT-1**

Definition and classification of Financial Statements, Objectives, importance and limitations, Tools and techniques for Financial Statement Analysis: Comparative statements, common size statements, cash flow analysis, ratio analysis. Financial statements of a company: Statement of Profit and Loss and Balance Sheet in the prescribed form.

**UNIT-2**

Ratio Analysis: Objectives, classification and computation, Liquidity Ratios. Solvency Ratios, Activity Ratios, Inventory Turnover Ratio, Profitability Ratios

**UNIT-3**

Cash flow and funds flow statements: Meaning, need and method of preparing statements. Cash flow from Operating activities, Cash flow from Investing activities and Cash flow from Financing activities,

**References:**

1. Khan, M.Y. and Jain, P.K.: Financial Management, Tata McGraw Hill, New Delhi.
2. Lal, Jawahar. Cost Accounting, Tata McGraw Hill Publishing Co., New Delhi.
3. Singh, S. K. and Gupta Lovleen. Management Accounting: Theory and Practice. Pinnacle Publishing House

**CERTIFICATE COURSE ON GOOGLE ADSENSE**

**UNIT-I**

Search Engines, Web browsers, Internet vs. Intranet, Web casting techniques, Web hosting, Domain Name, How to upload the material on the website using FTP

**UNIT-II**

Google Adword, Creation, Google AdSense, Advantage, importance, how to create Google Adsense Account . How to activate.

**UNIT-III**

Connectivity of Google Adsense with website, Blog, YouTube.

# **CERTIFICATE COURSE ON MULTI-MEDIA**

## **UNIT – I**

Multimedia: Basic Concept, Definition, Components & Applications of Multimedia; Hypermedia and Multimedia; Multimedia Hardware and Software; Multimedia Software Tools; Presentation Tools; Multimedia Authoring: Introduction, Features, Types of Authoring Tools: Card or Page-Based, Icon- Based, Time-Based, Object-Oriented; VRML: History, Features

## **UNIT – II**

Images: Graphics/Image Data Types, File Formats; Color Models in Images and Video; Video: Introduction, Types of Video Signals; Analog and Digital Video; Analog Video Standards: NTSC, PAL, SECA; Digital Video Standards: Chroma Subsampling, CCIR Standards, HDTV

## **UNIT – III**

Digital Audio: Basic Concepts, Analog vs. Digital Audio, Digitization of Sound; Digital Audio File Formats, MIDI Quantization and Transmission of Audio: Coding of Audio; Pulse Code Modulation; Differential Coding of Audio; Lossless Predictive Coding; DPCM; DM; ADPCM

## कम्प्यूटर और हिंदी भाषा

### इकाई-1 : कम्प्यूटर का विकास और हिंदी

- कम्प्यूटर का परिचय और विकास
- कम्प्यूटर में हिंदी का आरम्भ एवं विकास
- हिंदी के विविध फॉन्ट
- कम्प्यूटर में हिंदी की चुनौतियाँ और संभावनाएँ

### इकाई-2 : हिंदी भाषा और प्रौद्योगिकी

- इंटरनेट पर हिंदी
- यूनिकोड, देवनागरी लिपि और हिंदी भाषा
- हिंदी और वेब डिजाइनिंग
- हिंदी की वेबसाइट्स

### इकाई-3 : हिंदी भाषा, कम्प्यूटर और गवनेस

- राजभाषा हिंदी के प्रसार में कम्प्यूटर की भूमिका
- ई-गवनेस, इंटरनेट
- हिंदी भाषा शिक्षण और ई-लर्निंग
- सरकारी और गैर-सरकारी संस्थाएँ

### सहायक ग्रंथ

- आधुनिक जनसंचार और हिंदी – हरिमोहन
- कम्प्यूटर के भाषिक अनुप्रयोग – विजय कुमार मल्होत्रा
- कम्प्यूटर और हिंदी –
- हिंदी भाषा और कम्प्यूटर – संतोष गोयल
- कम्प्यूटर के डाटा प्रस्तुतिकरण और भाषा-सिद्धांत – पी.के. शर्मा
- मीडिया : भूमंडलीकरण और समाज – संपा. संजय द्विवेदी
- सोशल नेटवर्किंग : नए समय का संवाद – संपा. संजय द्विवेदी

# **CERTIFICATE COURSE ON INTRODUCING STARTUP**

## **UNIT I**

Start-up: Creating and developing Start-up, Start-up Entrepreneurship, Start-up Registration in India, Procedure to start a new Start-up, Methods and procedures to start and expand one's own business, Idea Validation, Idea Identification and Assessment, Legal Building, Introduction to Business Planning.

## **UNIT II**

Feasibility study: preparation of feasibility reports; economic, technical, financial and managerial feasibility of project; selection of factory location; demand analysis and market potential measurement capital and project costing; working capital requirements; sources of finance, factors affecting success of a new business; reasons for the failure and visible problems for business.

## **UNIT III**

Government support and incentives to new enterprise, Government schemes for Start-up India, Start-up India: Eligibility, Tax Exemptions and incentives, entrepreneurship development programmes, Skill India, Successful Start-ups in India.

### **Practical Work:**

1. Case Study
2. Group Discussion

### **Suggested Readings:**

1. Clifton, Davis S and Fyfe, David E: Project Feasibility Analysis 1977, John Wiley, New York.
2. S.S. Khanka: Entrepreneurial Development, S. Chand & Co. Ltd. Ram Nagar New Delhi.
3. Sathyanarayana V R: 16 Business Secrets Published by Savanna Enterprises.
4. The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses,' by Eric Ries.

**CERTIFICATE COURSE ON**  
**RIGHT TO INFORMATION IN CONTEXT TO BUSINESS**

**UNIT-I**

Right to Information- Introduction, Need of RTI in India-Developments on TRR in India, RTI Act 2005, Basic elements, Objectives.

Right to Information and Public Authorities –Obligations of public Authorities' section-role of Public information, officers Public Information Officers (PIO) and Assistant Public Information Officers (APIO), Process of distortion of request.

**UNIT –II**

Exemption from disclosure of information, partial disclosure and third party information, RTI in banking sector-Reserve Bank of India's obligation under this act-designation of transparency office under RTI act, particular of organisation functions, duties, norms set by banks, significant court of judgment.

**UNIT –III**

Right to information in Insurance Sector-Insurance Regulatory and Development Authority of India (IRDA) obligations under RTI act, Access to information held by IRDA, IRDA website, complains against insurance company, complains against policy holder, designated officers

**CERTIFICATE COURSE ON INTERVIEW SKILLS**

**Theory**

**Unit I**

Introduction to Interviews; Types of Interviews; Staging and conducting an effective interview; Interviewee's preparation before the interview; Interviewee's conduct during the interview; What to bring to an interview; Body language during an interview; Stress before an Interview and how to deal with it

Appraisal Interviews; Stress Interviews; Phone Interviews

**Unit II**

Resume- Layout and content; Types of Resume; Guidelines for writing an effective resume  
Introduction to Group Discussions; Purpose of Group Discussion; Phases of Group Discussion; Preparation before Group Discussion; Skills required for effective Group Discussion; Conduct during a Group Discussion

## **Practical**

### **Unit III**

- Resume Writing
- Mock Interviews
- Group Discussions
- Extempore
- Debates
- Role Play Activities.

#### **Suggested Readings:**

- Group Discussion and Interview Skills by Priyadarshani Pathak
- Mastering Interviews and Group Discussions by Dinesh Mathur
- Interview Skills by DS Paul & Manpreet Kaur

## **CERTIFICATE COURSE IN STATISTICAL METHODS**

### **UNIT-I**

Introduction, definition, scope, functions, importance, limitations and distrust of statistics; types of statistical methods; data collection and analysis; types of data: primary and secondary data; characteristics of a graph: types of graph and their merits and demerits.

### **UNIT-II**

Measures of central tendency: meaning and definition; Types of averages, median, mode, arithmetic mean, geometric mean, harmonic mean, quadratic mean, moving average, progressive average; relation between mean, median and mode. Measures of dispersion and skewness: absolute and relative measures of dispersion range, quartile deviation, mean and standard deviation; difference between skewness and dispersion, empirical relation among various measures of dispersion, moments and kurtosis.

### **UNIT-III**

Sampling: introduction, census versus sample errors in sampling, types of sampling, judging reliability of sample. Business forecasting: meaning, steps in business forecasting and methods of forecasting Index numbers: introduction, types of index numbers, methods of constructing index numbers, uses of index numbers.

### **UNIT-IV**

Distribution Patterns: Types of Theoretical Probability ; Normal, Binomial, Poisson distribution Tests of significance: Z-test, Student T-test, Chi-Square test.

### **Suggested Readings:**

- D.N Elhance Fundamental of statistics Kitab mahal
- R.S Bhardwaj Business statistics Excel Books
- T.N Srivastava Statistics for management McGraw Hill
- S.C Gupta Fundamental of statistics Himalaya publishing house
- B.M Aggarwal Business statistics Sultan chand
- Levine Business statistics- A first course Pearson education
- S.P Gupta Statistics Sultan chand & sons

## **CERTIFICATE COURSE ON FIRST-AID AND HOME NURSING**

### **UNIT I**

Define First Aid & First Aider

Duties & Functions of the First Aiders. Artificial Respiration.

Electric Shock, Burns, Scalds.

Shock, Control of bleeding, unconsciousness.

### **UNIT II**

Bleeding from Nose, Ear Epileptic Fits

Fractures & Injuries, dislocation, high fever Something get struck in the throat.

Drowning

Insect bites, Dog bite, Snake bite Food Poisoning

Chemical Poisoning

### **UNIT III**

Define Nursing Principles of Nursing Etiquette's of Nursing Functions of Nursing

### **UNIT IV**

Qualities of Nursing Ethics of Nursing

Scope and Goal of Nursing Interpersonal Relationship

### **Suggested Reading:**

- Agrawal, K.C. (2001). Environmental biology. Bikaner: Nidhi publishers Ltd.
- Frank, H. & Walter, H., (1976). Turners school health education. Saint Louis: The C.V. Mosby Company.
- Nemir, A. (n.d.). The school health education. New York: Harber and Brothers.
- Odum, E.P. (1971). Fundamental of ecology. U.S.A.: W.B. Saunders Co.



# **CERTIFICATE COURSE ON COSMIC RAYS**

## **UNIT I**

Observational properties of Cosmic Rays: spectral intensity, energy density and composition. Main scientific results observing Cosmic Rays, current experimental activities from the ground and in space. Origin of CR: acceleration processes, galactic and extragalactic astrophysical sources.

## **UNIT 2**

Interaction of Cosmic Rays with interstellar medium and propagation in the Milky Way: diffusive models and confinement processes, energy loss processes and electromagnetic radiation from Cosmic Rays, spallation processes and secondary component production.

## **UNIT 3**

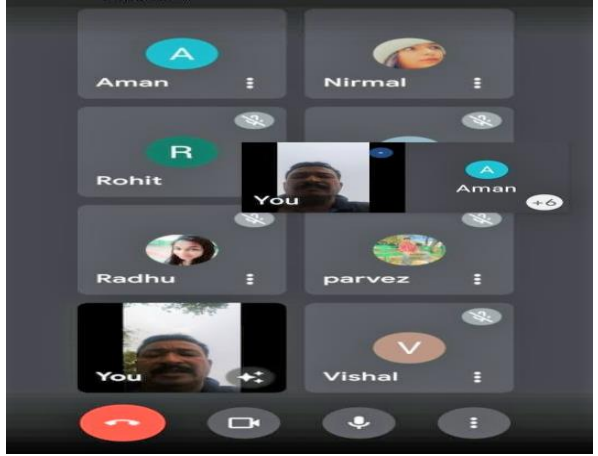
Interaction with solar wind and solar modulation: solar magnetic activity, solar particle emission, heliosphere. Interaction with the Earth magnetic field and atmosphere: radiation belts and geomagnetic cut-off, extensive air showers and observations of highest energy Cosmic Rays.

### **References:**

1. High Energy Astrophysics, M.S. Longair, Cambridge University press, third edition, ISBN 978-0-521-75618-1
2. Space Physics – An introduction, C.T. Russel, J.G. Luhmann, R.J. Strangeway, Cambridge University press, ISBN 978-1-107-09882-4.



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