



MAHATMA GANDHI UNIVERSITY, NALGONDA, T.S. 508-254
UG CBCS III & IV SEM SEC PAPERS

SEMESTER - III		SEMESTER - IV	
SEC - I	1. Communication Skills OR	1. Leadership & Management Skills OR	
	2. Professional Skills	2. Universal Human Values	
SEC - II	All Physical Sciences (including Data Science) Stream	a. Theory of Equations	a. Number Theory
		b. Electrical Circuits & Networking	b. Basic Instrumentation
		c. Remedial methods for pollution, drinking water and Soil fertility	c. Chemistry of Cosmetics and Food Processing
		d. Operating System-1	d. Operating System-2
	All Life Sciences Stream	a. Biofertilizers and Organic Farming	a. Mushroom Culture Technology
		b. Apiculture	b. Vermiculture
		c. Remedial methods for pollution, drinking water and Soil fertility	c. Chemistry of Cosmetics and Food Processing
	All Arts and Social Sciences Stream	a. Basic Computer Applications in Economics	a. Data Analysis
		b. Historical and Cultural Tourism	b. Archives and Museums
	All Commerce (Gen, Comp. & Business Analytics) Stream	a. Principles of Insurance	a. Practice of General Insurance
b. Practice of Life Insurance		b. Regulation of Insurance Business	
c. Foundation of Digital Marketing		c. Social Media Marketing	
BBA	a. Basic Quality Management	a. Start-up Management	

Note: "If a student opt for SEC "a" in III Semester, the student has to opt "a" only in IV semester and so is the case "b" and "c".


REGISTRAR
 MAHATMA GANDHI UNIVERSITY
 NALGONDA - 508 254.

TO
 The Director,
 CDC, MGU, Nalgonda.

Course 1: Communication Skills

Context and Justification :

Communication plays an important role in shaping an individual's life, personal as well as professional. Also it is the backbone of any organisation/institution. Success in life to a considerable extent depends on effective communication skills. In today's world of computers and digital media, a strong communication skill base is essential for learners and for smooth functioning of an organisation.

Objectives :

This course has been developed with the following objectives:

1. Identify common communication problems that may be holding learners back
2. Identify what their non-verbal messages are communicating to others
3. Understand role of communication in teaching-learning process
4. Learning to communicate through the digital media
5. Understand the importance of empathetic listening
6. Explore communication beyond language.

Expected Outcome :

By the end of this program participants should have a clear understanding of what good communication skills are and what they can do to improve their abilities.

Credit: 02

Duration: 30 Hours

Number & Titles of Modules:

Total of 7 Modules

Module 1	Listening	4 Hours
Module 2	Speaking	6 Hours
Module 3	Reading	3 Hours
Module 4	Writing and different modes of writing	4 Hours
Module 5	Digital Literacy	4 Hours
Module 6	Effective use of Social Media	4 Hours
Module 7	Non-verbal communication	5 Hours

Module Outline :

Module 1: Listening

4 Hours

- Techniques of effective listening
- Listening and comprehension
- Probing questions
- Barriers to listening

Module 2: Speaking

6 Hours

- Pronunciation
- Enunciation
- Vocabulary
- Fluency
- Common Errors

Module 3: Reading

3 Hours

- Techniques of effective reading
- Gathering ideas and information from a given text
 - i. Identify the main claim of the text
 - ii. Identify the purpose of the text
 - iii. Identify the context of the text
 - iv. Identify the concepts mentioned
- Evaluating these ideas and information
 - i. Identify the arguments employed in the text
 - ii. Identify the theories employed or assumed in the text
- Interpret the text
 - i. To understand what a text says
 - ii. To understand what a text does
 - iii. To understand what a text means

Module 4: Writing and different modes of writing

4 Hours

- Clearly state the claims
- Avoid ambiguity, vagueness, unwanted generalisations and oversimplification of issues
- Provide background information
- Effectively argue the claim
- Provide evidence for the claims
- Use examples to explain concepts
- Follow convention
- Be properly sequenced
- Use proper signposting techniques
- Be well structured
 - i. Well-knit logical sequence
 - ii. Narrative sequence
 - iii. Category groupings

- Different modes of Writing
 - i. E-mails
 - ii. Proposal writing for Higher Studies
 - iii. Recording the proceedings of meetings
 - iv. Any other mode of writing relevant for learners

4 Hours

Module 5: Digital Literacy

- Role of Digital literacy in professional life
- Trends and opportunities in using digital technology in workplace
- Internet Basics
- Introduction to MS Office tools
 - i. Paint
 - ii. Office
 - iii. Excel
 - iv. Powerpoint

4 Hours

Module 6: Effective use of Social Media

- Introduction to social media websites
- Advantages of social media
- Ethics and etiquettes of social media
- How to use Google search better
- Effective ways of using Social Media
- Introduction to Digital Marketing

5 Hours

Module 7: Non-verbal communication

- Meaning of non-verbal communication
- Introduction to modes of non-verbal communication
- Breaking the misbeliefs
- Open and Closed Body language
- Eye Contact and Facial Expression
- Hand Gestures
- Do's and Don'ts
- Learning from experts
- Activities-Based Learning

Pedagogy : Instructor-Led Training, Supplemented by Online Platform (SWAYAM)

Materials : Teaching & Learning

Assessment : Paper-Based or Online Assessment

Bibliography & Suggested Reading including audio video material :

Books

- Sen Madhuchanda (2010), *An Introduction to Critical Thinking*, Pearson, Delhi
- Silvia P. J. (2007), *How to Read a Lot*, American Psychological Association, Washington DC

Course 2: Professional Skills

Context with Justification :

One of the significant outcomes of Higher Education is to prepare an individual for entering the job/employment market. Besides knowledge and skills required for a particular job/occupation, professional skills are also required for an individual to be gainfully employed for a successful and satisfied life. Professional skills are part of life skills. An individual should be able to demonstrate professional skills involving the use of intuitive, logical and critical thinking, communication and interpersonal skills, not limited to cognitive/creative skills. These skills, behaviour and quality of output enhance employability.

The career skills empower an individual with ability in preparing an appropriate resume, addressing the necessary gaps for facing interviews and actively and effectively participating in group discussion thereof, etc. It is also of significant importance that students /individuals possess the know- how to explore career opportunities for themselves, considering their innate strengths and weaknesses.

It is important that the students/individuals are well prepared to take on new challenges and opportunities. With the increasing use of technology in the way we live, learn and work, it is critical for students/individuals to be able to utilise basic computing concepts and also have and espouse excellent Team Skills. Collaborating and working together can assist in resolving complex problems, which allow/offer individuals an opportunity to articulate new ideas and perspectives. It further allows allow learner / individuals design, develop, problem solve and to adapt to situations based on their experience and skills.

Credit: 02

Duration:30 hours

The Course Professional Skills is divided into two parts:

- a) Career Skills
- b) Team Skills

A. Career Skills

Objectives :

The Objectives of the course are to help students/candidates:

1. Acquire career skills and fully pursue to partake in a successful career path
2. Prepare good resume, prepare for interviews and group discussions
3. Explore desired career opportunities in the employment market in consideration of an individual SWOT.

Expected Outcomes :

At the end of this course the students will be able to:

1. Prepare their resume in an appropriate template without grammatical and other errors and using proper syntax
2. Participate in a simulated interview
3. Actively participate in group discussions towards gainful employment
4. Capture a self - interview simulation video regarding the job role concerned
5. Enlist the common errors generally made by candidates in an interview
6. Perform appropriately and effectively in group discussions
7. Explore sources (online/offline) of career opportunities
8. Identify career opportunities in consideration of their own potential and aspirations
9. Use the necessary components required to prepare for a career in an identified occupation (as a case study).

Duration: 15 Hours

Number & Titles of Modules:

Module 1	Resume Skills	3 Hours
Module 2	Interview Skills	5 Hours
Module 3	Group Discussion Skills	4 Hours
Module 4	Exploring Career Opportunities	3 Hours

Module Outline :

Module 1: Resume Skills

3 Hours

i. Resume Skills : Preparation and Presentation

- Introduction of resume and its importance
- Difference between a CV, Resume and Bio data
- Essential components of a good resume

ii. Resume skills : common errors

- Common errors people generally make in preparing their resume
- Prepare a good resume of her/his considering all essential components

5 Hours

Module 2: Interview Skills

i. Interview Skills : Preparation and Presentation

- Meaning and types of interview (F2F, telephonic, video, etc.)
- Dress Code, Background Research, Do's and Don'ts
- Situation, Task, Approach and Response (STAR Approach) for facing an interview
- Interview procedure (opening, listening skills, closure, etc.)
- Important questions generally asked in a job interview (open and closed ended questions)

- ii. **Interview Skills : Simulation**
 - Observation of exemplary interviews
 - Comment critically on simulated interviews
- iii. **Interview Skills : Common Errors**
 - Discuss the common errors generally candidates make in interview
 - Demonstrate an ideal interview

Module 3: Group Discussion Skills **4 Hours**

- Meaning and methods of Group Discussion
- Procedure of Group Discussion
- Group Discussion- Simulation
- Group Discussion - Common Errors

Module 4: Exploring Career Opportunities **3 Hours**

- Knowing yourself – personal characteristics
- Knowledge about the world of work, requirements of jobs including self-employment.
- Sources of career information
- Preparing for a career based on their potentials and availability of opportunities

Pedagogy : Besides Face to Face lectures (theory would be limited only to 20% of the component and remaining 80% would be practical oriented), the focus would be primarily on blended /hybrid learning. This could include a flipped classroom approach that leverages project-based learning, demonstration, group discussion, simulations etc.

Materials : Audio video materials, Online Platform (SWAYAM), FutureSkills Platform, Used Cases & Case Studies etc.

Assessment: Online evaluation, demonstration, assignments : Some components could be aligned to NOS (SSC/N9005) IT-ITeS Sector . The questions posed to the students would be a mix of MCQs, scenario-based, logical reasoning, comprehension, simulations, etc. Do check the assessment model and sample assessment at (<http://nac.nasscom.in/>)

Bibliography & Suggested Reading including audio video material :

Please check IT-ITeS Sector Skills Council readiness programs namely

- Foundation Skills In IT (FSIT) - Refer the websites like <https://www.sscnasscom.com/ssc-projects/capacity-building-and-development/training/fsit/> and
- Global Business Foundation Skills (GBFS) – Refer websites like <https://www.sscnasscom.com/ssc-projects/capacity-building-and-development/training/gbfs/>

B. Team Skills

Objectives :

The objectives of the course is to make learners:

1. Understand the significance of Team Skills and help them in acquiring them
2. To help them design, develop and adapt to situations as an individual and as a team.

Expected Outcomes :

By the end of this course the learners/candidates will be able to:

1. Use common technology messaging tools that are used in enterprises for flow of information and transition from command and control to informal communication during an online/offline team session
2. Actively use and operate online team communication tools: Webinar, Skype, Zoom, Google hangout etc
3. Appreciate and demonstrate Team Skills
4. Participate in a digital lifestyle conversant with computers, applications, Internet and nuances of cyber security
5. Explore (online) and identify career opportunities in consideration of their own potential and aspirations.
6. Discuss and articulate the key requirements of an entrepreneurial exercise
7. Empathise and trust colleagues for improving interpersonal relations
8. Engage in effective communication by respecting diversity and embracing good listening skills
9. Distinguish the guiding principles for communication in a diverse, smaller internal world
10. Practice interpersonal skills for better relations with seniors, juniors, peers and stakeholders
11. Project a good personal image and social etiquette so as to have a positive impact on building of one's chosen career
12. Generate, share and maximise new ideas with the concept of brainstorming and the documentation of key critical ideas/thoughts articulated and action points to be implemented with timelines in a team discussion (as MOM) in identified applicable templates.

Duration: 15 Hours

Number & Titles of Modules:

Module 1	Presentation Skills	5 Hours
Module 2	Trust and Collaboration	2 Hour
Module 3	Listening as a Team Skill	2 hour
Module 4	Brainstorming	2 Hour
Module 5	Social and Cultural Etiquettes	2 Hour
Module 6	Internal Communication	2 Hour

Module Outline :

Module 1: Presentation Skills

5 Hours

- Types of presentations
- Internal and external presentation
- Knowing the purpose
- Knowing the audience
- Opening and closing a presentation
- Using presentation tools
- Handling questions
- Presentation to heterogenic group
- Ways to improve presentation skills over time

Module 2: Trust and Collaboration

2 Hours

- Explain the importance of trust in creating a collaborative team
- Agree to Disagree and Disagree to Agree – Spirit of Team work
- Understanding fear of being judged and strategies to overcome fear

Module 3: Listening as a Team Skill

2 Hours

- Advantages of Effective Listening
- Listening as a team member and team leader. Use of active listening strategies to encourage sharing of ideas (full and undivided attention, no interruptions, no pre-think, use empathy, listen to tone and voice modulation, recapitulate points, etc.).

Module 4: Brainstorming**2 Hour**

- Use of group and individual brainstorming techniques to promote idea generation.
- Learning and showcasing the principles of documentation of team session outcomes

Module 5: Social and Cultural Etiquette**2 Hour**

- Need for etiquette (impression, image, earn respect, appreciation, etc)
- Aspects of social and cultural/corporate etiquette in promoting teamwork
- Importance of time, place, propriety and adaptability to diverse cultures

Module 6: Internal Communication**2 Hour**

- Use of various channels of transmitting information including digital and physical to team members.

Pedagogy : Besides Face to Face Lectures (as theory would be limited only to 20% of the component and remaining 80% would be practical oriented), the focus would be primarily on blended learning/hybrid learning. This could include a flipped classroom approach that leverage project based learning, demonstration, group discussion, simulation as well as coaching, seminars and tutorials.

Materials : Audio video materials, Online Platform (SWAYAM), Future Skills platform

Assessment: Written evaluation, demonstration, assignments:

Some components aligned to NOS (SSC/N9005) IT-ITeS . The questions posed to the students would be a mix of MCQs, Scenario-based, logical reasoning, comprehension, simulations, etc. Do check the assessment at website like (<http://nac.nasscom.in/>)

Bibliography & Suggested Reading including audio video material :

Please check IT-ITeS Sector Skills Council readiness program namely Global Business Foundation Skills (GBFS) in website (<https://www.sscnasscom.com/ssc-projects/capacity-building-and-development/training/gbfs/>), and Generic and the entrepreneurial NOS at NSQF Level 4 -7.

SEMESTER-III

1.9 Theory of Equations

(w.e.f. academic year 2020-21)

SEC-I

Theory: 2 credits
Theory: 2 hours /week

Objective: Students learn the relation between roots and coefficients of a polynomial equation, Descartes's rule of signs in finding the number of positive and negative roots if any of a polynomial equation besides some other concepts.

Outcome: By using the concepts learnt the students are expected to solve some of the polynomial equations.

Unit- I

Graphic representation of a polynomial-Maxima and minima values of polynomials-Theorems relating to the real roots of equations-Existence of a root in the general equation -Imaginary roots-Theorem determining the number of roots of an equation-Equal roots-Imaginary roots enter equations in pairs-Descartes' rule of signs for positive roots- Descartes' rule of signs for negative roots.

Unit- II

Relations between the roots and coefficients-Theorem-Applications of the theorem-Depression of an equation when a relation exists between two of its roots-The cube roots of unity Symmetric functions of the roots-examples.

Text:

- W.S. Burnside and A.W. Panton, *The Theory of Equations*

References:

- C. C. Mac Duffee, *Theory of Equations*
- Hall and Knight, *Higher Algebra*

physics ^{10 Feb}

ELECTRICAL CIRCUIT NETWORKING

30 Hours

(Credits: 02)

Unit I (15 hours)

Basic Electricity Principles: Voltage, Current, Resistance, and Power. Ohm's law. Series, parallel, and series-parallel combinations. AC Electricity and DC Electricity. Familiarization with multimeter, voltmeter and ammeter.

Understanding Electrical Circuits: Main electric circuit elements and their combination. Rules to analyze DC sourced electrical circuits. Current and voltage drop across the DC circuit elements. Single-phase and three-phase alternating current sources. Rules to analyze AC sourced electrical circuits. Real, imaginary and complex power components of AC source. Power factor. Saving energy and money.

Electrical Drawing and Symbols: Drawing symbols. Blueprints. Reading Schematics. Ladder diagrams. Electrical Schematics. Power circuits. Control circuits. Reading of circuit schematics. Tracking the connections of elements and identify current flow and voltage drop.

Generators and Transformers: DC Power sources. AC/DC generators. Inductance, capacitance, and impedance. Operation of transformers.)

Electric Motors: Single-phase, three-phase & DC motors. Basic design. Interfacing DC or AC sources to control heaters & motors. Speed & power of ac motor.

Solid-State Devices: Resistors, inductors and capacitors. Diode and rectifiers. Components in Series or in shunt. Response of inductors and capacitors with DC or AC sources

Unit II (15 hours)

Electrical Protection: Relays. Fuses and disconnect switches. Circuit breakers. Overload devices. Ground-fault protection. Grounding and isolating. Phase reversal. Surge protection. Interfacing DC or AC sources to control elements (relay protection device)

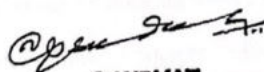
Electrical Wiring: Different types of conductors and cables. Basics of wiring-Star and delta connection. Voltage drop and losses across cables and conductors. Instruments to measure current, voltage, power in DC and AC circuits. Insulation. Solid and stranded cable. Conduit. Cable trays.

Splices: wirenuts, crimps, terminal blocks, split bolts, and solder. Preparation of extension board.


NOTE: Problems should be solved at the end of every chapter of all units.

Reference Books:

- A text book in Electrical Technology - B L Theraja - S Chand & Co.
- A text book of Electrical Technology - A K Theraja
- Performance and design of AC machines - M G Say ELBS Edn..



CHAIRMAN
Board of Studies in Physics
Osmania University, Hyd.



HEAD
Department of Physics
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B.Sc. Chemistry II Year
Semester III
Skill Enhancement Course- II (SEC -II) (2 Credits)
REMEDIAL METHODS FOR POLLUTION, DRINKING WATER AND SOIL
FERTILITY STANDARDS

UNIT I: Remedial Methods for Pollution Prevention and control of air pollution
15 h (1 hr/week)

Ozone hole-causes and harm due to ozone depletion. The effect of CFC's in Ozone depletion and their replacements. Global Warming and Greenhouse Effect Precautions to control global warming. Deleterious effect of pollutants - Endangered Monuments- acid rain. Precautions to protect monuments. Sources of Radiation pollution - Chernobyl accident and its Consequences. Radiation effect by the usage of cell phones and protection tips. Deleterious effects of cell phone towers and health hazards.

Sources of water pollution-(i). Pollution due to pesticides and inorganic chemicals, (ii). Thermal pollution (iii). Ground water pollution (iv). Eutrophication. Methods for control of water pollution and water recycling. Dumping of plastics in rivers & oceans and their effect on aquatic life. Determination of (i) Dissolved Oxygen and (ii) Chemical Oxygen Demand in polluted water - Illustration through charts (or) demonstration of experiments. Sources of soil pollution (i). Plastic bags, (ii). Industrial and (iii). Agricultural sources. Control of soil pollution. Environmental laws in India. Environmental benefits of planting trees.

UNIT II: Drinking Water and Soil Fertility Standards and Analysis
15 h (1 hr/week)

Water Quality and Common Treatments for Private Drinking Water Systems: Drinking Water Standards-Primary Drinking Water Standards : Inorganics, Organics and Volatile Organic Chemicals. Secondary Drinking Water Standards-Inorganics and Physical Problems. Water Testing, Mineral Analysis, Microbiological Tests, Pesticide and Other Organic Chemical Tests. Principle involved in Water Treatment Techniques. (i) Reverse osmosis (ii) Disinfection methods such as chlorination, ultraviolet light, ozonation etc (iii) Chemical oxidation and (iv) Ion exchange (water softeners). Visit to nearby drinking water plants and interaction at sites.

Introduction to Soil Chemistry- Basic Concepts. Effect of pH on nutrient availability. Macronutrients and their effect on plants -Carbon, Hydrogen, Oxygen, Nitrogen and Phosphorus other macronutrients-Calcium, Magnesium and Sulfur. Micronutrients and their effect on plants. Boron (B4 O7 2-), Copper (Cu2+), Iron (Fe2+, Fe3+) Manganese (Mn2+) Molybdenum (MoO4 2-) Zinc (Zn2+) Cobalt (Co2+) Chlorine (Cl-) and Others. Determination of soil nitrogen by Kjeldahl method- Illustration through charts (Or) demonstration of experiment. Visit to nearby agricultural farms and interaction with farmers. Discussion with farmers on the use of Soil Analysis Kits.

References

1. A Text book for 'Remedial methods for pollution, drinking water and soil fertility standards', First Edition, Authors: Dr Mudvath Ravi, Gopu Srinivas, Putta Venkat Reddy, Vuradi Ravi Kumar, Battini Ushaiah, ISBN No. 978-93-5311-183-0.
2. Remedial methods for pollution, drinking water and soil fertility standards, Author: Dr G. Vanjatha.
3. Remedial methods for pollution, drinking water and soil fertility standards, Telugu version, Authors: Dr N. Yogi Babu, Dr. G. Vanajatha, M. Srilatha.
4. Environmental Pollution, download.nos.org/333courseE/10.pdf
5. CFC Replacements, butane.chem.uiuc.edu/pshapley/Environmental/L21/3.html
6. Effects of Acid Rain on Buildings www.air-quality.org.uk/12.php
7. Acid Rain Effects - Buildings - Chemistry chemistry.elmhurst.edu/vchembook/196buildings.html
8. How to protect national heritage - ways to protect monuments www.youthkiawaaz.com/2011/03/how-to-protect-national-heritage/
9. Chernobyl nuclear power plant accident - NRC www.nrc.gov/reading-rm/doc-collections/fact-sheets/chernobyl-bg.pdf
10. Side-effects of harmful radiation from mobile phones and towers pib.nic.in/newsite/printrelease.aspx?relid=116304
11. Cell Phone Radiation Protection - Highly Effective Tips https://www.electricsense.com/775/how-to-protect-yourself-from-cell-phone-radiation/
12. Chemical Waste That Impact on Aquatic Life or Water Quality blog.idrenvironmental.com/chemical-waste-that-impact-on-aquatic-life-or-waterquality
13. Trees and Your Environment - Clean Air Gardening www.cleanairegardening.com/plantingtrees
14. water quality and common treatments for private drinking water . extension.uga.edu/publications/detail.html?number=b939
15. Soil chemistry https://casfs.ucsc.edu/about/publications/Teaching-Organic-Farming/PDFdownloads/2.2-soil-chemistry.pdf
16. Soil Analysis-Determination of Available Nitrogen ... - Amrita Virtual Lab vlab.amrita.edu/?sub=2&brch=294&sim=1551&cnt=1
17. Determination of dissolved oxygen (DO) www.cutm.ac.in/pdf/env%20engg%20lab%20manual.pdf
18. Determination of chemical oxygen demand of wastewater www.pharmaguideline.com > quality control > test

B.Sc. (Computer Science)

Semester -III

OperatingSystems-1

BS302

SEC-2[B]

Theory

2Hours/Week

2 credits

Unit - I

Introduction: Computer-System Architecture, Computing Environments. Operating-System Structures: Operating-System Services, User Interface for Operating-System, System Calls, Types of System Calls, Operating System Structure.

Process Management: Process Concept, Process Scheduling, Operations on Processes, Inter process Communication, Examples-Producer-Consumer Problem.

Process Synchronization: Critical-Section Problem, Peterson's Solution, Synchronization, Semaphores, Monitors.

Unit - II

CPU Scheduling: Concepts, Scheduling Criteria, Scheduling Algorithms.

Deadlocks: System Model, Deadlock Characterization, Methods for Handling Deadlocks, Deadlock Prevention, Deadlock Avoidance, Deadlock Detection, Recovery from Deadlock.

Text AbrahamSilberschatz, PeterBaerGalvin, GregGagne, *OperatingSystemConcepts(9e)*

Reference s NareshChauhan, *Principles of Operating Systems* Thomas W. Doeppner, *Operating Systems in Depth* Andrew S. Tanenbaum, *Modern Operating Systems*
William Stallings, *Operating Systems - Internals and Design Principles* Dhananjay M. Dhandhere, *Operating Systems - A Concept Based Approach*

SEC-2

Biofertilizers and Organic Farming

(30h)

(15h)

UNIT - I:

1. Manures and Biofertilizers: Types of fertilizers, manures. Manure composition. Manures for crop productivity.
2. Differences between fertilizers and biofertilizers: pH changes and water contamination.
3. Bacterial Biofertilizers: General account on the microbes used as biofertilizer.
4. Algal Biofertilizers: Associative effect of different microorganisms. *Azolla* and *Anabaena-azollae* association, nitrogen fixation, factors affecting growth, *Azolla* in rice cultivation.

(15h)

UNIT - II:

5. Fungal Biofertilizers: Mycorrhizal association, types of mycorrhizal association, occurrence and distribution, phosphorus nutrition, growth and yield, colonization of VAM – isolation and inoculum production of VAM, and its influence on growth and yield of crop plants.
6. Organic Farming: Green manuring and organic fertilizers, Recycling of bio-degradable municipal, agricultural and industrial wastes, Biocompost making- types, method of vermicomposting, Panchakavya. Biological pest control (neem).

Suggested Readings

1. Dubey R.C. 2005. A Text book of Biotechnology. S.Chand & Co. New Delhi.
2. Kumaresan V. 2005. Biotechnology. Saras Publications. New Delhi.
3. John Jothi Prakash E. 2004. Outlines of Plant Biotechnology. Emkay Publication. New Delhi.
4. Sathe T.V. 2004. Vermiculture and Organic Farming. Daya Publishers. New Delhi.
5. Subha Rao N.S. 2000. Soil Microbiology, Oxford & IBH Publishers. New Delhi.
6. Vayas S.C, Vayas S. and Modi H.A. 1998. Bio-fertilizers and organic Farming Akta Prakashan. Nadiad.

5/20/2020
M. B. Gupta
H. M. S.
K. M. S.
B. K. S.
J. S.

B.Sc. ZOOLOGY SYLLABUS UNDER CBCS 2019-20

**B.Sc. ZOOLOGY II YEAR
SEMESTER- III
PAPER-III (SEC - I); APICULTURE**

Instructions: 2hr per week
No. of period: 30
No. of credits: 2

UNIT-I:

(15 Periods)

- 1.1 History, classification and present status of apiculture industry in India
- 1.2 Biology of honey bees and bee economy
- 1.3 Social organization of bee colony
- 1.4 Selection of bee species for apiculture
- 1.5 Bee rearing method: artificial Bee rearing (Apiary), Bee hives

UNIT-II:

(15 Periods)

- 2.1 Products of apiculture industry and its use – honey; Bees wax; propolic
- 2.2 Methods of extraction of honey – indigenous and modern
- 2.3 Bee keeping equipment
- 2.4 Colony inspection and maintenance of the equipment
- 2.5 Bee diseases and enemies; control and preventive method

Suggested Reading:

1. Textbook of Applied Zoology, Telugu Academy.
2. Apiculture by Prost P.J. Oxford aro IBH, New Delhi
3. Apiculture by Bisht, ICAR publication

B.A. (ECONOMICS) SYLLABUS
Semester - III
BASICS OF COMPUTER APPLICATIONS IN ECONOMICS
Skill Enhancement Course (SEC)-I - Paper - I

Module-I: Introduction of Computers

Definition - Evolution of Computer - Computer Generations - Micro Computers - Structure of Computer - Uses of Computer - Basic Components of Computer - Central processing Unit (CPU) Operating System – Window Operating System - Salient Features - Merits of Windows Operating System - Accessories - System tools - Scan Disk - Word Pad - Note Pad - Paint - Imagination - Windows Explorer - Ms- Word: Creating, Opening and saving files - editing and formatting text - spell and grammar check - auto correct - creation of tables and volumes.

Module – II Data Analysis using SPSS: Basics of Data Analysis – Data Entry in SPSS – Computing with SPSS – Preparation of Graphs with SPSS – Distribution Functions and Density Functions – Statistical Package handling and command description for SPSS – Reports, Descriptive – Statistics, Compare Means, Time Series Analysis, Correlation and Regression Models.

References

1. Sinha, P.K. : Computer Fundamentals, BPB Publications, New Delhi.
2. Raja Raman.V. : Fundamentals of Computers, PHI, New Delhi.
3. Kerns : Essentials of Microsoft Windows, Word and Excel, PHI.
4. Alexis Leon & Mathews Leon : Introduction to Computers with Ms-Office, TMH.
5. Asthana & Braj Bhushan : Statistics for Social Sciences (with SPSS applications), PHI.

TELANGANA STATE
B.A. (HISTORY) SYLLABUS
Semester - III
Historical and Cultural Tourism
(SEC - Skill Enhancement Course - I)
(2019-2020)

The main objective of this course is to make student understand the relevance of Tourism as history and its relationship with culture. This course not only deals with the various aspects of tourism industry but also deals with the impact of tourism. This course also brings out the growing trends in tourism and the demand it is generating in the present times.

Module-I: Tourism – Concept and Meaning – Nature – Scope - Tourism as an Industry - Socio-Economic Impact of Tourism - History of Tourism Development in India - Promotional Strategies of Tourism - Tools of Publicity, Role of Films, Television, Press, Poster-display, Brochures, Role of Guides - Historical Tourism - Monuments, Religious and Secular - Historical Sites - Historical Events - Impact of Tourism Development on Protection and Conservation of Historical Monuments and Sites and Vice-Versa - Socio-Cultural Tourism: Fairs and Festivals of India - Performing Arts (Dance, Drama and Music) - Museums, Art - Galleries, Yoga and Health Centers - Indian Cuisine.

Module-II: Eco-Tourism - Beaches, Hill-Resorts, Surf-Riding, Ballooning, Rafting, Gliding - Wild-life Sanctuaries - National Parks, Safaris, Mountaineering – Trekking – Skiing - Sports Tourism - Tourism in Telangana – Tourist Places - Tourism Handicrafts: Textiles – Metal Work, Stone and Wood Carvings, Furniture, Jewellery, Toys, Musical Instruments – Terracotta - Display and Sale of Handicrafts - Shops at Heritage Centers – Organizing Exhibitions – Duty Free Shops.

Recommended Books:

- Dallen, J. Timothy, *Cultural Heritage and Tourism: An Introduction (Aspects of Tourism Texts)*, Channel View Publications, 2011.
- INTACH, *Heritage and Development: Recent Perspectives*, Aryan Books International, 2012.
- K.R. Gupta, *Concise Encyclopedia of India: (Places of Historical and Tourist Interest)*, 2010.
- Melanie, K. Smith, *Issues in Cultural Tourism Studies*, Psychology Press, 2003.
- P.N. Girija Prasad, *Eco-Tourism and Its Development*, Adhyayan Publishers, 2012.
- S.P. Gupta & Lal Krishna (eds.), *Cultural Tourism in India: Museums, Monuments and Arts*, 2003.
- V.K. Singh, *Historical and Cultural Tourism in India*, Aadi Publications, 2008.
- Vaibhav Chauhan, *Heritage Tourism: Territory Unexplored*.
- Vanaja Uday, *Cultural Tourism and Performing Arts of Andhra Pradesh: Prospects and Perspectives*, Research India Press, 2012.
- A.K. Bhatia, *Tourism Development – Principles & Practices*, Sterling Publishers, 2016.
- Sampad Kumar, Swain & Jitendra Mohan Mishra, *Principles and Practices in Tourism*, OUP, 2011.
- Indira, *Tourism in Andhra Pradesh: Growth and Developments, 1956-2007*, Research India Press, New Delhi, 2014.
- D. Satyanarayana, *Kotha Paryataka Sthalalu (Telugu)*.

Paper SEC1 (a): PRINCIPLES OF INSURANCE

Objective: To make students to learn the Principles of Insurance.

UNIT I: RISK MANAGEMENT AND INSURANCE & INSURANCE TERMINOLOGY:

Risk Management – Types of Risks – Actual and Consequential Losses – Management of Risks – Different Classes of Insurance – Importance of Insurance – Management of Risk by Individuals and Insurers – Fixing of Premiums – Reinsurance– Role of Insurance in Economic Development and Social Security – Constituents of Insurance Market – Operations of Insurance Companies – Operations of Intermediaries – Specialist Insurance Companies – Role of Regulators – Common and specific terms in Life and Non Life Insurance - Understanding Insurance Customers – Customer Behavior at Purchase Point – Customer Behavior when Claim Occurs – Importance of Ethical Behavior.

UNIT II: INSURANCE CONTRACT AND INSURANCE PRODUCTS:

Insurance Contract Terms – Principles of Insurance: Principle of Insurable Interest, Principle of Indemnity, Principle of Subrogation, Principle of Contribution, Relevant Information Disclosure, Principle of utmost Good Faith, Relevance of Proximate Cause - Life Insurance Products: Risk of Dying Early – Risk of Living too Long – Products offered – Term Plans – Pure Endowment Plans – Combinations of Plans – Traditional Products – Linked Policies – Features of Annuities and Group Policies - General Insurance Products: Risks faced by Owner of Assets – Exposure to Perils – Features of Products Covering Fire and Allied Perils – Products covering Marine and Transit Risks – Products covering Financial Losses due to Accidents – Products covering Financial Losses due to Hospitalization – Products Covering Miscellaneous Risks.

SUGGESTED READINGS:

1. Principles of Insurance : A Publication of the Insurance Institute of India
2. Principles of Insurance : Telugu Academy, Hyderabad
3. Guide to Risk Management : SagarSanyal
4. Principles of Insurance : Dr V Padmavathi, Dr V Jayalakshmi - PBP
5. Insurance and Risk Management : P.K. Gupta
6. Insurance Theory and Practice : Tripathi PHI
7. Principles of Insurance Management: Neelam C Gulati, Excel Books
8. Life and Health Insurance : Black, JR KENNETH & Harold Skipper, Pearson
9. Principles of Risk Management and Insurance: George E Rejda (13th Edition)
10. Risk Management and Insurance : Trieschman ,Gustavson and Hoyt . South Western College Publishing, Cincinnati, Ohio

Suggested Websites:

- 1) www.irda.gov.in 2) www.policyholder.gov.in 3) www.irdaindia.org.in

Paper SEC2 (a): PRACTICE OF LIFE INSURANCE

Objectives: To make students to learn Practice of Life Insurance.

UNIT-I: INTRODUCTION TO LIFE INSURANCE AND TYPES OF LIFE INSURANCE POLICIES AND PREMIUM CALCULATION: Meaning evolution, growth and principles of Life Insurance –Life Insurance Organizations in India – Competition and Regulation of Life Insurance - Types of Life Insurance Policies – Term, Whole Life, Endowment, Unit Linked and with or without Profit Policies – Customer Evaluation – Policy Evaluation – Group and Pension Insurance Policies – Special features of Group Insurance/Super Annuation Schemes – Group Gratuity Schemes. Computation of Premiums - Meaning of Premium, its calculation- Rebates – Mode of Rebates – Large sum assured Rebates – Premium Loading – Rider Premiums – Computation of Benefits – Surrender value – Paid up value.

UNIT-II: SETTLEMENT OF CLAIMS RISK & UNDERWRITINGS AND FINANCIAL PLANNING & TAX SAVING: Settlement of claims: Intimation Procedure, documents and settlement procedures - Underwriting: The need for underwriting – Guiding principles of Underwriting – Factors affecting Insurability – Methods of Life Classification – Laws affecting Underwriting - Financial Planning and taxation: Savings – Insurance vis-à-vis- Investment in the Units Mutual Funds, Capital Markets – Life Insurance in Individual Financial Planning – Implications in IT treatment.

SUGGESTED READINGS:

1. Practice of Life Insurance: Insurance Institute of India, Mumbai.
2. Insurance and Risk Management: P.K.Gupta, Himalaya Publishing House, Mumbai.
3. Fundamentals of Life Insurance Theories and Applications: Kanika Mishra, Prentice Hall
4. Principles of Life Insurance – Dr. V. Padmavathi, Dr. V. Jayalakshmi - PBP
5. Managing Life Insurance: Kutty, S.K., Prentice Hall of India: New Delhi
6. Life and Health Insurance: Black, Jr. Kenneth and Harold Skipper Jr., Prentice Hall, Inc., England.
7. Life Insurance: Principles and Practice: K.C. Mishra and C.S. Kumar, Cengage Learning, New Delhi.
8. Life Insurance in India: Sadhak, Respose Books, New Delhi.

Paper SEC1 (b): FOUNDATION OF DIGITAL MARKETING

Objective: To make students to learn Foundation of digital marketing.

UNIT I: DIGITAL MARKETING FOUNDATIONS:

Digital Marketing Strategy – Exploring Digital Marketing – Starting with the Website – Foundations of Analytics – Search Engine Optimization – Search and Display Marketing – Social Media Marketing – Video Marketing.

UNIT II: OPTIMIZING MARKETING EMAILS, MOBILE MARKETING FOUNDATIONS AND CONTENT MARKETING FOUNDATIONS:

Email marketing tools and setup – Email marketing segmentation, personalization and mobile friendly design – Content marketing foundations – Blogs for content marketing – Content marketing for staying relevant – Newsletters for content marketing – Mobile marketing foundations.

SUGGESTED READINGS:

1. The Art of Digital Marketing: The Definitive Guide to Creating Strategic, Targeted, and Measurable Online Campaigns by Ian Dodson, Wiley
2. Fundamentals of Digital Marketing by Puneet Singh Bhatia, Pearson
3. Foundations of Digital Marketing: Dr. K.V. Nagaraj.KUsha Rani - PBP
4. Digital Marketing by Vandana Ahuja, Oxford
5. Digital Marketing by Seema Gupta, McGraw Hill
6. Digital Marketing For Dummies by Ryan Deiss and Russ Heneberry

BB502: BASIC QUALITY MANAGEMENT - 502

No. of credits: 2

GE-1

COURSE OBJECTIVE :

Quality is the most significant characteristic of product or service in today's world. This course introduces traditional and modern quality perspectives.

UNIT – I : INTRODUCTION :

The concept of Quality. Quality Dimensions. Product and Service Quality. Inspection, Statistical Quality Control, Quality Assurance and Total Quality Management. Conventional Quality Management versus Total Quality Management. Evolution of TQM. Historical perspectives of TQM – Deming, Juran, Crosby and Taguchi's Contributions. Customer and supplier focus in TQM. Benefits and Costs of TQM.

UNIT – II : TOOLS AND TECHNIQUES OF TQM :

Statistical Tools - Check Sheets, Histograms, Scatter Diagrams, Pareto's Chart, Regression Analysis & Control Charts. Cause and Effect Diagrams, The Five Why's, Five S's, Kaizen, JIT, Quality Circles, Gantt Chart and Balanced Score Card. Dimensions of Service Quality. An overview of TQM in Service Organisations.

SUGGESTED BOOKS :

1. Sunil Sharma, "Total Engineering Quality Management", 2003, Macmillan India Ltd.
2. Ron Basu, "Implementing Quality: A Practical Guide to Tools and Techniques", 2016, THOMPSON.
3. Kanishka Bedi, "Quality Management", Oxford University Press.
4. Mujkherjee, PN, "Total Quality Management", 2007, PHI.
5. R. P. Mohanty & R. R. Lakhe, "TQM in the Service Sector", Jaico Books. 2016

Course 3: Leadership and Management Skills

Context with Justification :

Leaders are foundations of the society, who face and win against adversities and odds of life. Through their words and deeds, they show path to others and transform into inspirational role models, affecting social life vividly. In the current times of cut-throat competitions, disbelief in values, techno-centric complex lifestyles, there is a dire need to emphasise the 'human' agency in community living. This can be done by cultivating and nurturing the innate leadership skills of the youth so that they may transform these challenges into opportunities and become torch bearers of the future by developing creative solutions.

Objectives :

The Module is designed to:

- Help students to develop essential skills to influence and motivate others
- Inculcate emotional and social intelligence and integrative thinking for effective leadership
- Create and maintain an effective and motivated team to work for the society
- Nurture a creative and entrepreneurial mindset
- Make students understand the personal values and apply ethical principles in professional and social contexts.

Expected Outcomes :

Upon completion of the course students will be able to:

1. Examine various leadership models and understand/assess their skills, strengths and abilities that affect their own leadership style and can create their leadership vision
2. Learn and demonstrate a set of practical skills such as time management, self management, handling conflicts, team leadership, etc.
3. Understand the basics of entrepreneurship and develop business plans
4. Apply the design thinking approach for leadership
5. Appreciate the importance of ethics and moral values for making of a balanced personality.

Credit: 02

Duration: 30 Hours

Number & Titles of Modules:

Module 1	Leadership Skills	6 Hours
Module 2	Managerial Skills	6 Hours
Module 3	Entrepreneurial Skills	6 Hours
Module 4	Innovative Leadership and Design Thinking	6 Hours
Module 5	Ethics and Integrity	6 Hours

Module Outline :

Module 1- Leadership Skills

6 Hours

a. Understanding Leadership and its Importance

- What is leadership?
- Why Leadership required?
- Whom do you consider as an ideal leader?

b. Traits and Models of Leadership

- Are leaders born or made?
- Key characteristics of an effective leader
- Leadership styles
- Perspectives of different leaders

c. Basic Leadership Skills

- Motivation
- Team work
- Negotiation
- Networking

Module 2 - Managerial Skills

6 Hours

a. Basic Managerial Skills

- Planning for effective management
- How to organise teams?
- Recruiting and retaining talent
- Delegation of tasks
- Learn to coordinate
- Conflict management

b. Self Management Skills

- Understanding self concept
- Developing self-awareness
- Self-examination
- Self-regulation

Module 3 - Entrepreneurial Skills

6 Hours

a. Basics of Entrepreneurship

- Meaning of entrepreneurship
- Classification and types of entrepreneurship
- Traits and competencies of entrepreneur

b. Creating Business Plan

- Problem identification and idea generation
- Idea validation
- Pitch making

Module 4 - Innovative Leadership and Design Thinking

6 Hours

a. Innovative Leadership

- Concept of emotional and social intelligence

- Synthesis of human and artificial intelligence
- Why does culture matter for today's global leaders

b. Design Thinking

- What is design thinking?
- Key elements of design thinking:
 - Discovery
 - Interpretation
 - Ideation
 - Experimentation
 - Evolution.
- How to transform challenges into opportunities?
- How to develop human-centric solutions for creating social good?

6 Hours

Module 5- Ethics and Integrity

a. Learning through Biographies

- What makes an individual great?
- Understanding the persona of a leader for deriving holistic inspiration
- Drawing insights for leadership
- How leaders sail through difficult situations?

b. Ethics and Conduct

- Importance of ethics
- Ethical decision making
- Personal and professional moral codes of conduct
- Creating a harmonious life

Pedagogy : Pedagogy for the modules is as follows:

1. Leadership Skills - Lectures (augmented with videos); role-plays for leadership models; team building games
2. Managerial Skills - Lectures (augmented with videos), case studies (AMUL, TESLA, Toyota, DMRC, Tata Group, Google, The Mumbai Dabbawala), SWOT analysis, Johari window
3. Entrepreneurial Skills - Lectures (augmented with videos), case studies and practicing business plans
4. Innovative Leadership and Design Thinking- Concept discussion through lecture and videos followed by role-plays and exercises for each set of intelligence, activities using 5 steps – discovery, interpretation, ideation, experimentation, and evolution (Ref.: Workbook of Design Thinking by IDEO)
5. Ethics and Integrity- Experiential learning through stories suggested list (Ahilya Bai, Holkar, Abdul Kalam, Raja Harishchandra, Mahatma Gandhi, Abraham Lincoln), audio visual augmented role plays and storytelling (leaders from varied fields like academics, corporate, social, sports, art, etc.)

Assessment : It can be combination of written evaluation and presentations, including simulations, case studies and business plan.

Bibliography and Suggested Readings :

Books

- Ashokan, M. S. (2015). *Karmayogi: A Biography of E. Sreedharan*. Penguin, UK.
- Brown, T. (2012). *Change by Design*. Harper Business
- Elkington, J., & Hartigan, P. (2008). *The Power of Unreasonable People: How Social Entrepreneurs Create Markets that Change the World*. Harvard Business Press.
- Goleman D. (1995). *Emotional Intelligence*. Bloomsbury Publishing India Private Limited
- Kalam A. A. (2003). *Ignited Minds: Unleashing the Power within India*. Penguin Books India
- Kelly T., Kelly D. (2014). *Creative Confidence: Unleashing the Creative Potential Within Us All*. William Collins
- Kurien V., & Salve G. (2012). *I Too Had a Dream*. Roli Books Private Limited
- Livermore D. A. (2010). *Leading with cultural intelligence: The New Secret to Success*. New York: American Management Association
- McCormack M. H. (1986). *What They Don't Teach You at Harvard Business School: Notes From A Street-Smart Executive*. RHUS
- O'Toole J. (2019) *The Enlightened Capitalists: Cautionary Tales of Business Pioneers Who Tried to Do Well by Doing Good*. Harpercollins
- Sinek S. (2009). *Start with Why: How Great Leaders Inspire Everyone to Take Action*. Penguin
- Sternberg R. J., Sternberg R. J., & Baltes P. B. (Eds.). (2004). *International Handbook of Intelligence*. Cambridge University Press.

E-Resources

- Fries, K. (2019). 8 Essential Qualities That Define Great Leadership. *Forbes*. Retrieved 2019-02-15 from <https://www.forbes.com/sites/kimberlyfries/2018/02/08/8-essential-qualities-that-define-great-leadership/#452ecc963b63>.
- How to Build Your Creative Confidence, Ted Talk by David Kelly - https://www.ted.com/talks/david_kelley_how_to_build_your_creative_confidence
- India's Hidden Hot Beds of Invention Ted Talk by Anil Gupta - https://www.ted.com/talks/anil_gupta_india_s_hidden_hotbeds_of_invention
- Knowledge@Wharton Interviews Former Indian President APJ Abdul Kalam - "A Leader Should Know How to Manage Failure" <https://www.youtube.com/watch?v=laGZaS4sdeU>
- Martin, R. (2007). How Successful Leaders Think. *Harvard Business Review*, 85(6): 60.
- NPTEL Course on Leadership - <https://nptel.ac.in/courses/122105021/9>

Course 4: Universal Human Values

Context with Justification :

Human civilisation is known for the values that it cherishes and practices. Across various times and places, sages, saints and seers, drawing on their experience, developed practices that placed central importance on values, though the names used by them differed, as their languages varied but the spirit was same. Universal human values are values that human beings cherish and hold in common consciously and otherwise in most of the places and times and practice them.

Renunciation is the foundational value. Renunciation or greedlessness has two preconditions: love for all living beings and absence of selfishness. Renunciation is not self-directed but other-directed and is for life in all forms and shapes, for welfare of all. Renunciation begins when selfishness ends. Renunciation to run away from the problems of life is cowardice. Renunciation without action means parasitic life. Also, service can be practised only when renunciation with action begins. Unegoistical service is inconceivable without renunciation; and true service is possible only through love and compassion. Life and death are eternal truths, so is the truth as fact and truth as value. Truth exists between the two ends of life and death and is to be pursued.

Truth, Love, Peace, Non-Violence and Righteous Conduct are the Universal Human Values. Renunciation (sacrifice), Compassion and Service are also commonly acceptable human values, which at the operation level have been named differently as sincerity, honesty, righteousness, humility, gratitude, aspiration, prosperity, non-violence, trust, faith, forgiveness, mercy, peace and so on. These are needed for well-being of an individual, society and humanity and ultimately Peace in the world.

This course aims at making learners conscious about universal human values in an integral manner, without ignoring other aspects that are needed for learner's personality development.

Objectives :

The present course deals with meaning, purpose, and relevance of universal human values and how to inculcate and practice them consciously to be a good human being and realise one's potentials.

Learning outcomes :

By the end of the course the learners will be able to:

1. Know about universal human values and understand the importance of values in individual, social circles, career path, and national life.
2. Learn from case studies of lives of great and successful people who followed and practised human values and achieved self-actualisation.
3. Become conscious practitioners of human values.
4. Realise their potential as human beings and conduct themselves properly in the ways of the world.

Credit: 02

Duration: 30 Hours

Number & Titles of Modules:

Module 1: Love & Compassion

5 Hours

Module 2: Truth

5 Hours

29

Module 3: Non-Violence	5 Hours
Module 4: Righteousness	5 Hours
Module 5: Peace	4 Hours
Module 6: Service	3 Hours
Module 7: Renunciation (Sacrifice)	3 Hours

Module Outline :

Module 1: Love & Compassion	5 Hours
<ul style="list-style-type: none"> • Introduction: What is love? Forms of love—for self, parents, family, friend, spouse, community, nation, humanity and other beings, both for living and non-living • Love and compassion and inter-relatedness • Love, compassion, empathy, sympathy and non-violence • Individuals who are remembered in history for practicing compassion and love. • Narratives and anecdotes from history, literature including local folklore • Practicing love and compassion: What will learners learn gain if they practice love and compassion? What will learners lose if they don't practice love and compassion? • Sharing learner's individual and/or group experience(s) • Simulated Situations • Case studies 	
Module 2: Truth	5 Hours
<ul style="list-style-type: none"> • Introduction: What is truth? Universal truth, truth as value, truth as fact (veracity, sincerity, honesty among others) • Individuals who are remembered in history for practicing this value • Narratives and anecdotes from history, literature including local folklore • Practicing Truth: What will learners learn/gain if they practice truth? What will learners lose if they don't practice it? • Learners' individual and/or group experience(s) • Simulated situations • Case studies 	
Module 3: Non-Violence	5 Hours
<ul style="list-style-type: none"> • Introduction: What is non-violence? Its need. Love, compassion, empathy sympathy for others as pre-requisites for non-violence • Ahimsa as non-violence and non-killing • Individuals and organisations that are known for their commitment to non-violence • Narratives and anecdotes about non-violence from history, and literature including local folklore • Practicing non-violence: What will learners learn/gain if they practice non-violence? What will learners lose if they don't practice it? • Sharing learner's individual and/or group experience(s) about non-violence • Simulated situations • Case studies 	

Module 4: Righteousness**5 Hours**

- Introduction: What is righteousness?
- Righteousness and *dharma*, Righteousness and Propriety
- Individuals who are remembered in history for practicing righteousness
- Narratives and anecdotes from history, literature including local folklore
- Practicing righteousness: What will learners learn/gain if they practice righteousness? What will learners lose if they don't practice it?
- Sharing learners' individual and/or group experience(s)
- Simulated situations
- Case studies

Module 5: Peace**4 hours**

- Introduction: What is peace? Its need, relation with harmony and balance
- Individuals and organisations that are known for their commitment to peace
- Narratives and Anecdotes about peace from history, and literature including local folklore
- Practicing peace: What will learners learn/gain if they practice peace? What will learners lose if they don't practice it?
- Sharing learner's individual and/or group experience(s) about peace
- Simulated situations
- Case studies

Module 5: Service**3 Hours**

- Introduction: What is service? Forms of service, for self, parents, family, friend, spouse, community, nation, humanity and other beings—living and non-living, persons in distress or disaster.
- Individuals who are remembered in history for practicing this value.
- Narratives and anecdotes dealing with instances of service from history, literature including local folklore
- Practicing service: What will learners learn/gain gain if they practice service? What will learners lose if they don't practice it?
- Sharing learners' individual and/or group experience(s) regarding service
- Simulated situations
- Case studies

Module 6: Renunciation (Sacrifice)**3 Hours**

- Introduction: What is renunciation? Renunciation and sacrifice. Self-restrain and Ways of overcoming greed. Renunciation with action as true renunciation
- Individuals who are remembered in history for practicing this value.
- Narratives and anecdotes from history and literature, including local folklore about individuals who are remembered for their sacrifice and renunciation.
- Practicing renunciation and sacrifice: What will learners learn/gain if they practice Renunciation and sacrifice? What will learners lose if they don't practice it?
- Sharing learners' individual and/or group experience(s)
- Simulated situations
- Case studies

ADDITIONAL PRACTICAL MODULES or OPERATIVE ELECTIVES:

NOTE: The faculty/institution may choose any/some of the following modules keeping in mind the level and specific needs of learners.

Module Outline :

MODULE A - Integral Human Well-Being

5 Hours

Importance of well-being, inter-relatedness of different kinds of well-being and definition of well-being (state of being comfortable, healthy, happy and equanimity)

Well-being and its Kinds

- (i) Physical (physical strength and endurance)
- (ii) Emotional (ability to respond to emotions and control them)
- (iii) Aesthetic (faculty to see and appreciate beauty in all beings)
- (iv) Intellectual (rational, logical well-being)
- (v) Relational well-being (obligation to self, parents, family society, nation humanity and other beings in the universe; living with others with their acceptance)
- (vi) Moral (difference between good and evil and practicing goodness; righteousness)
- (vii) Spiritual (thinking beyond self and journey from senses to spiritual level)

Establish and recognise various states of well-being, embedded in different creatures, but consciously understood by humans

Identify the most pronounced emotions in the individual through given activities

Anecdotes/video/activity to help identify different well-beings

Discussion of related values to well-beings: Aesthetics, ethics, gratitude, forgiveness, and spiritual health i.e., thinking beyond senses and self and for the welfare of others

Importance and practice of well-being through case study/ activity

Ways to attain different kinds of well-being

Activities

MODULE B - Yoga & Pranayama

5 Hours

Importance of Yoga and Pranayama

- Yoga and pranayama for integral well-being and balance in life
- Yoga & Pranayama: Introduction
- Mind - Body – Intellect
- Difference between Yoga and Pranayama and their inter-relatedness.

- Basic Yogasans and pranayamas for students:
 - a. Every morning
 - b. Before bedtime
 - c. Before a presentation
 - d. Before examination
 - e. To fight stomach cramps
 - f. To fight stress
- Healthy diet
- Healthy mind
- Recommended routine for yoga and pranayama

MODULE C - Gratitude

Outlines:

1. Gratitude, a great embellishment to a person's mental quality
2. Duty versus Rights
 - a. What is duty?
 - b. What is right?
3. Wonderment and simplicity
4. Gratitude to one's family
5. Gratitude to one's teachers
6. Gratitude to one's society
7. Gratitude to one's nation
8. Gratitude to the universe
9. Count your blessings (activity)
10. Live in an attitude of gratitude

Pedagogy :

Learning is a challenging, engaging, and enjoyable activity. Learners should be encouraged to engage in a rigorous process of learning and self-discovery by adopting a highly focused approach to education versus rote learning. In teaching and learning pedagogy of universal human values, there should be a shift from domain or conclusions-based approach to the experiential or process/es based approach.

The faculty should promote learning of values on a proportionate scale of 20:30:50 principle, where lectures constitute 20 percent of the delivery (Hear); visuals 30 percent of the learning methods (See); and experience 50 percent (Do). This ratio is subject to change as per the needs. In order to achieve its objective of focused-based learning and holistic development the faculty/facilitators should use a variety of knowledge delivery methods: interactive lecture so that students

SEMESTER-IV

1.11 Number Theory

(w.e.f. academic year 2020-21)

SEC-III

Theory: 2 credits
Theory: 2 hours /week

Objective: Students will be exposed to some of the jewels like Fermat's theorem, Euler's theorem in the number theory.

Outcome: Student uses the knowledge acquired solving some divisor problems.

Unit- I

The Goldbach conjecture - Basic properties of congruences- Binary and Decimal Representation of Integers - Number Theoretic Functions; The Sum and Number of divisors- The Mobius Inversion Formula- The Greatest integer function.

Unit- II

Euler's generalization of Fermat's Theorem: Euler's Phi function- Euler's theorem Some Properties of the Euler's Phi function.

Text:

- David M Burton, *Elementary Number Theory (7e)*

References:

- Thomas Koshy, *Elementary Number Theory and its Applications*
- Kenneth H Rosen, *Elementary Number Theory*

phys 308

Skill Enhancement course III

BASIC INSTRUMENTATION

(Credits: 02)

30 hours

Unit I (15 hours)

Basics of Measurement: Instruments accuracy, precision, sensitivity, resolution range etc. Errors in measurements and loading effects. Multimeter: Principles of measurement of dc voltage and dc current, ac voltage, ac current and resistance. Specifications of a multimeter and their significance)

Electronic Voltmeter: Advantage over conventional multimeter for voltage measurement with respect to input impedance and sensitivity. Principles of voltage, measurement (block diagram only). Specifications of an electronic Voltmeter/ Multimeter and their significance. AC millivoltmeter: Type of AC millivoltmeters: Amplifier- rectifier, and rectifier- amplifier. Block diagram ac millivoltmeter, specifications and their significance

Cathode Ray Oscilloscope: Block diagram of basic CRO. Construction of CRT, Electron gun, electrostatic focusing and acceleration (Explanation only- no mathematical treatment), brief discussion on screen phosphor, visual persistence & chemical composition. Time base operation, synchronization. Front panel controls. Specifications of a CRO and their significance.

Use of CRO for the measurement of voltage (dc and ac frequency, time period. Special features of dual trace, introduction to digital oscilloscope, probes. Digital storage Oscilloscope: Block diagram and principle of working.

Unit II (15 hours)

Signal Generators and Analysis Instruments: Block diagram, explanation and specifications of low frequency signal generators. pulse generator, and function generator. Brief idea for testing, specifications. Distortion factor meter, wave analysis.

Impedance Bridges & Q-Meters: Block diagram of bridge. working principles of basic (balancing type) RLC bridge. Specifications of RLC bridge. Block diagram & working principles of a Q- Meter. Digital LCR bridges.


Digital Instruments: Principle and working of digital meters. Comparison of analog & digital instruments. Characteristics of a digital meter. Working principles of digital voltmeter.

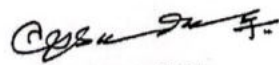
Digital Multimeter: Block diagram and working of a digital multimeter. Working principle of time interval, frequency and period measurement using universal counter/ frequency counter, time- base stability, accuracy and resolution.

NOTE: Problems should be solved at the end of every chapter of all units.

Reference Books:

- A text book in Electrical Technology - B L Theraja - S Chand and Co.
- Performance and design of AC machines - M G Say ELBS Edn.
- Digital Circuits and systems, Venugopal, 2011, Tata McGraw Hill.
- Logic circuit design, Shimon P. Vingron, 2012, Springer.
- Digital Electronics, Subrata Ghoshal, 2012, Cengage Learning.
- Electronic Devices and circuits, S. Salivahanan & N. S.Kumar, 3rd Ed., 2012, Tata Mc-Graw Hill
- Electronic circuits: Handbook of design and applications, U.Tietze, Ch.Schenk, 2008, Springer
- Electronic Devices, 7/e Thomas L. Floyd, 2008, Pearson India


HEAD
 Department of Physics
 University College of Science
 Osmania University, Hyd.


CHAIRMAN
 Board of Studies in Physics
 Osmania University, Hyd.

B.Sc. Chemistry II Year Semester IV
Skill Enhancement Course- IV (SEC - IV) (2 Credits)
Chemistry of Cosmetics and Food Processing

Unit-I: Chemistry of Cosmetics and Perfumes

A general study including preparation and uses of the following: Hair dye, hair spray, shampoo, sunscreen lotions, lipsticks, talcum powder, nail enamel, creams (cold, vanishing and shaving creams), antiperspirants and artificial flavours. Essential oils and their importance in cosmetic industries with reference to eugenol, geraniol, sandalwood oil, eucalyptus, 2-phenyl ethyl alcohol. Demonstration experiments or illustration of experimental procedures through charts for the preparation of talcum powder, shampoo and vanishing cream. Analysis of deodorants and antiperspirant - Aluminum, Zinc, Boric acid, Chloride and Sulphide.

Unit-II: Food Processing and Food Adulteration

Food processing: Introduction, methods for food processing, additives and preservatives. Food processing- impact on nutrition, analysis of calcium in milk by complexometric titration, spectrophotometric analysis of iron in foods, Spectrophotometric identification and determination of caffeine and benzoic acid in soft drinks. Field Work -Visit to Food Industries. Food adulteration: Adulterants in some common food items and their identification: Pulses, chilli powder, turmeric powder, milk, honey, spices, food grains and wheat flour, coffee powder, tea leaves, vegetable oil, ghee, ice creams, tomato sauce. Field Work-Collection of adulterated food samples, demonstration of a minimum of five experiments for testing adulterants in food items.

References

1. E. Stocchi: Industrial Chemistry, Vol -I, Ellis Horwood Ltd. UK.
2. P.C. Jain, M. Jain: Engineering Chemistry, Dhanpat Rai & Sons, Delhi
3. Sharma, B.K. & Gaur, H. Industrial Chemistry, Goel Publishing House, Meerut (1996).
4. Rameen Devi, Food Processing and Impact on Nutrition, Sc J Agric Vet Sci., AugSep 2015; 2(4A):304-311.
5. W.A. Poucher, Perfumes, Cosmetics and Soaps (1993).
6. Srilakshmi, Food Science. Edition: 3rd (2004). 7. Lillian Hoagland Meyer, Food chemistry (2008).
8. Handbook of Analysis and Quality Control for Fruit and Vegetable Products, S. Ranganna, Tata McGraw-Hill Education, 1986 – Food.
9. Fundamental concepts of applied chemistry J.C Ghosh, S. Chand and Co, Ltd, New Delhi.
10. Applied Chemistry K .Bhagavathi Sundhar, MJP publishers.

B.Sc. (Computer Science)

Semester -IV

Operating Systems-2

BS402

SEC-4

Theory

2Hours/Week

2credits

Unit - I

Main Memory: Introduction, Swapping, Contiguous Memory Allocation, Segmentation, Paging.
Virtual Memory: Introduction, Demand Paging, Page Replacement, Allocation of Frames, Thrashing.
Mass-Storage Structure: Overview, Disk Scheduling, RAID Structure.
File Systems: File Concept, Access Methods, Directory and Disk Structure, File-System Mounting, Protection.

Unit - II

File System Implementation, Directory Implementation, Allocation Methods, Free-Space Management.

Recovery, Network File System.

Protection and Security: Goals of Protection, Principles of Protection, Domain of Protection,

Access Matrix, Access Control, Revocation of Access Rights, The Security Problem, Program Threats, System and Network Threats, Cryptography as a Security Tool, User Authentication, Implementing Security Defenses, Firewalling to Protect Systems and Networks, Computer-Security Classifications. Case Study: Windows 7 and Linux System.

Text

AbrahamSilberschatz, PeterBaerGalvin, GregGagne, *OperatingSystem Concepts(9e)*

Reference s

Naresh Chauhan, *Principles of Operating Systems*

Thomas W. Doeppner, *Operating Systems in Depth*

Andrew S. Tanenbaum, *Modern Operating Systems*

William Stallings, *Operating Systems - Internals and Design Principles*

Dhananjay M. Dhandhere, *Operating Systems - A Concept Based Approach*

B.Sc. BOTANY
II Year: Semester-IV
Skill Enhancement Course

SEC-4

(Credits 2)

Mushroom Culture Technology

Lectures: 30

UNIT-I
(15h)

1. Introduction & history. Medicinal value of edible mushrooms; Poisonous mushrooms. Types of edible mushrooms available in India - *Volvariella volvacea*, *Pleurotus citrinopileatus*, *Agaricus bisporus*.
2. Cultivation Technology: Infrastructure; substrates (locally available) Polythene bag, vessels, Inoculation hook, inoculation loop, low cost stove, sieves, culture rack, mushroom unit (Thatched house) water sprayer, tray, small polythene bag.
3. Pure culture: Medium, sterilization, preparation of spawn, multiplication. Mushroom bed preparation - paddy straw, sugarcane trash, maize straw, banana leaves.
4. Factors affecting the mushroom bed preparation - Low cost technology. Composting technology in mushroom production.

UNIT-II
(15h)

5. Storage: Short-term storage (Refrigeration - upto 24 hours) Long term Storage (canning, pickles, papads), drying, storage in salt solutions.
6. Nutritional value of Mushrooms: Proteins - amino acids, mineral elements nutrition - Carbohydrates, Crude fibre content - Vitamins.
7. Food Preparation: Types of foods prepared from mushroom. Research Centres - National level and Regional level. Cost benefit ratio - Marketing in India and abroad, Export Value.

Suggested Readings

1. Marimuthu, T. Krishnamoorthy, A.S. Sivaprakasam, K. and Jayarajan. R (1991) Oyster Mushrooms, Department of Plant Pathology, Tamil Nadu Agricultural University, Coimbatore.
2. Swaminathan, M. (1990) Food and Nutrition. Bappco, The Bangalore Printing and Publishing Co. Ltd., No. 88, Mysore Road, Bangalore - 560018.
3. Tewari, Pankaj Kapoor, S.C., (1988). Mushroom cultivation, Mittal Publications, Delhi.
4. Nita Bahl (1984-1988) Hand book of Mushrooms, II Edition, Vol. I & Vol. II.

Subhama
K. Shaila
M. G. B
B. G. B

revised

B.Sc. ZOOLOGY SYLLABUS UNDER CBCS 2019-20

B.Sc. ZOOLOGY II YEAR
SEMESTER- IV
PAPER-IV(SEC-3): VERMICULTURE

Instructions: 2hr per week
No. of period: 30
No. of credits: 2

UNIT-I: (15 Periods)

- 1.1 Scope of vermi technology- Vermiculture and vermi composting – difference between vermiculture and vermi composting –
- 1.2 Earthworm diversity – Ecological groups of earthworms, biology of composting earthworms – *Eoisena foetida*, *Eudrilus lugeniae*.
- 1.3 Soil – Physical, chemical and biological features
- 1.4 Organic waste sources – problems in traditional composting, vermi composting
- 1.5 Types small and large scale pit method, heap method.

UNIT-II: (15 Periods)

- 2.1. Vermiculture techniques – vermi culture process – site selection - Selection and collection of species mono and poly culture
- 2.2. Essential parameters for vermi culture – bedding. Methods of harvesting worms general manual methods, self harvesting method, mechanical method
- 2.3. Nutritive value of vermi compost, storing and packing of compost
- 2.4. Applications of vermi composting in agricultural and horticultural practices
- 2.5. Economic of vermi culture, nationalized bank, NABARD support for vermi culture.

References:

1. Earthworm ecology by LEE
2. Biology of earthworm by Steven son
3. Vermicomposting tech – soil health to human health by Ranganathan L.S.

B.A. (ECONOMICS) SYLLABUS
Semester - IV
Skill Enhancement Course (SEC)-3 Data Analysis

Module -I: Collection and representation of data

Collection of data (some methodological issues), Census, Sample survey Representation of data the basic of data Management in stata / R / Eviews / SPSS / MS Excel

Module-II: Indian official statistics (Basic concepts)

Central statistical office (CSO) – National Accounts statics (NAS) Industrial statics (ASI, IIP) , National sample survey Office (NSSO) - Household Consumer Expenditure Survey Rounds, Employment and Unemployment Survey Rounds. Census of India – population Census 2011. Reserve Bank of India (RBI) – Handbook of statistics on Indian Economy Selected Parts)

Suggested Readings;

1. Goon A.M, Gupta, M K, and Dasgupta, B. *Fundamentals of Statistics (volume One)*, The World Press private Ltd
2. GOI, *Note sample Design and Estimation procedure of NSS 68th Round, national Sample Press private Ltd*
3. GOI. *SRS statistical Report 2016* office of the Registrar General & Census commissioner of India.

TELANGANA STATE
B.A. (HISTORY) SYLLABUS
Semester - IV
Archives and Museums
(SEC - Skill Enhancement Course – II)
(2019-2020)

This course introduces students to the institutions that house and maintain documentary, visual and material remains of the past. Students will be encouraged to undertake collection, documentation and exhibition of such materials in their localities and colleges. Visit to National Archives and National Museum are an integral part of the course.

Module-I: Definition of Archives – Scope – Types of Archives – Development of Archives – National and State Archives in India - Archives – Understanding the Traditions of Preservation – Collection - Purchase –Documentation: Accessioning – Indexing – Cataloguing – Digital Documentation and De-accessioning - Chemical Preservation and Restoration.

Module-II: Definition of Museum - Introduction – Scope - Types of Museums - Significance of Museums - Museums in India - Museums – Collection – Field Exploration – Excavation – Purchase – Gift and Exchanges – Treasure Trove – Documentation - Indexing – Museum Presentation and Exhibition – Outreach Activities of Museums and Archives.

Recommended Books:

- Saloni Mathur, *India by Design: Colonial History and Cultural Display*, University of California, 2007.
- Sengupta, S., *Experiencing History through Archives*, Munshiram Manoharlal, Delhi, 2004.
- Guha Thakurta, Tapati, *Monuments, Objects, Histories: Institution of Art in Colonial and Post-Colonial India*, New York, 2004.
- Kathpalia, Y.P., *Conservation and Restoration of Archive Materials*, UNESCO, 1973.
- Choudhary, R.D., *Museums of India and Their Maladies*, Agam Kala, Calcutta, 1988.
- Nair, S.M., *Bio-Deterioration of Museum Materials*, Agam Kala Prakashan, 2011.
- Agrawal, O.P., *Essentials of Conservation and Museology*, Sundeep Prakashan, New Delhi, 2007.

Paper SEC3 (a): PRACTICE OF GENERAL INSURANCE

Objective: To make the student understand general policies and accounting.

UNIT I: GENERAL INSURANCE POLICIES:

Introduction to General Insurance-Origin of general insurance—Classification of General Insurance Companies—Indian and International Insurance Market—various roles in Insurance industry—Policy Documents and forms—insurance proposals and forms—General Insurance Products-Fire, Marine, Motor, Liability, Personal Accident and Specialty Insurance, Engineering and other insurance.

UNIT II: UNDERWRITING, PREMIUMS, CLAIMS AND INSURANCE RESERVES AND ACCOUNTING:

Concept of Underwriting—Underwriting Process—Risk sharing and its methods—risk management and steps involved in it—Rating and Premiums—concept of soft and hard markets—Concept of Claim—understanding the process of claim management—claims fraud and fraud prevention—Insurance reserves and accounting—different types of reserves of insurance companies—reserving process followed by insurance companies—Insurance accounting.

SUGGESTED READINGS:

1. Practice of General Insurance – Insurance Institute of India.
2. Practice of General Insurance – D.S. Vittal-HPH.
3. Principles & Practice of Insurance- Dr. P. Periasamy – HPH.
4. Risk Management : A Publication of the Insurance Institute of India.,
5. Practice of General Insurance: Dr. V. Padmavathi, Dr. V. Jayalakshmi, PBP.
6. Insurance Theory and Practice: Tripathi PHI
7. Life and Health Insurance: Black, JR KENNETH & Harold Skipper, Pearson
8. Risk Management and Insurance : Trieschman ,Gustavson and Hoyt
9. South Western College Publishing Cincinnati, Ohio.

Paper SEC4 (a): REGULATION OF INSURANCE BUSINESS

Objective: To equip the students with the knowledge regarding Insurance Business Regulations

UNIT I: INSURANCE LEGISLATION IN INDIA:

History of life and non-life insurance legislation—nationalization—insurance reforms—insurance business Act, 1972—IRDA and its functions including licensing functions—Web aggregators—regulation for intermediaries—CCS-SPV-PoS—insurance repositories-TPAs—Role and duties of surveyors—Origin and development of micro-insurance—regulation of ULIPs—pension schemes—money laundering—KYC—methods of receipt of premium—Exchange control regulations relating to General and Life Insurance—IRDA Health Insurance Regulations, 2016—Health plus life combo products.

UNIT II: POLICY HOLDERS RIGHTS OF ASSAIGNMENT, NOMINATION AND TRANSFER:

Assignment and transfer of insurance policies—provisions related to nomination—repudiation—Fraud—protection of policyholder interest—stages in insurance policy—presale stage—post sale stage—free look period—grievance redressal—claim settlement—key feature document—dispute resolution mechanism—insurance ombudsman—solvency margin and investments—international trends in insurance regulation.

SUGGESTED READINGS:

1. Regulation of Insurance Business – Insurance Institute of India
2. Regulation of Insurance Business – D.S. Vittal, HPH
3. Regulation of Insurance Business: Dr. V. Padmavathi, PBP
4. Risk Management : A Publication of the Insurance Institute of India
5. Insurance Theory and Practice: Tripathi PHI
6. Life and Health Insurance: Black, JR KENNETH & Harold Skipper, Pearson
7. Risk Management and Insurance : Trieschman ,Gustavson and Hoyt
8. South Western College Publishing Cincinnati, Ohio.
9. Insurance Management – S.C. Sahoo& S.C. Das-HPH.

Paper SEC3 (b): SOCIAL MEDIA MARKETING

Objective: To make students to understand the Social Media Marketing.

UNIT I: SOCIAL MEDIA MARKETING:

Building an online community – Understanding Social Media Marketing – Marketing and building presence on Facebook – Marketing and building presence on Twitter – Employer branding on LinkedIn

UNIT II: ONLINE ADVERTISING ON SOCIAL MEDIA:

Facebook advertising overview – How Facebook ads work – How to create Facebook ads – Additional advertising options and best practices for Facebook advertising – Marketing and monetizing on YouTube – Customize your YouTube Channel – Video optimization on YouTube – YouTube Analytics

SUGGESTED READINGS:

1. The Art of Digital Marketing: The Definitive Guide to Creating Strategic, Targeted, and Measurable Online Campaigns by Ian Dodson, Wiley
2. Fundamentals of Digital Marketing by Puneet Singh Bhatia, Pearson
3. Digital Marketing by Vandana Ahuja, Oxford
4. Tuten: Social Media Marketing, sage
5. Digital Marketing by Seema Gupta, McGraw Hill
6. Social Media Marketing All-In-One for Dummies By Jan Zimmerman and Deborah Ng
7. Facebook Growth Hacking: How to Correctly Set Up and Maintain Your Facebook Presence and Gain Massive Amounts of Fans (Social Media Marketing) by Jeff Abston
8. Youtube Influencer: How To Become a Youtube Influencer, Why Influencer Marketing Matters, and How To Monetize Your Channel by Jeff Abston

BB602 -STARTUP MANAGEMENT

GE-2

No.of Credits:2

COURSE OBJECTIVE:

It helps the students to acquaint themselves with the special challenges of starting new ventures and introducing new product and service ideas.

UNIT – I : ENTREPRENEUR AND ENTREPRENEURSHIP :

Evolution of the Concept of Entrepreneur. Characteristics of an Entrepreneur. Distinction Between an entrepreneur and a Manager. Functions of an Entrepreneur. Traits/ Qualities of Entrepreneurs: Types of Entrepreneurs. Role of Entrepreneurship in Economic Development. Growth of Entrepreneurship in India. Problems and Development of Rural Entrepreneurship.

UNIT – II : ROLE OF SUPPORT INSTITUTIONS & MANAGEMENT OF SMALL ENTERPRISES :

Entrepreneurship Development Programmes (EDPs) –Phases of EDP's and Evaluation of EDPs. Institutional Finance to Entrepreneurs like Commercial Banks–Other Major Financial Institutions such as IDBI, IFCI, IIBI, LIC, UTI, NABARD, SFCs, SISI, SIDCs, SIDBI, and EXIM Bank and venture capital firms. Role of Small Enterprises in Economic Development. Ownership Structures, MSME act.

SUGGESTED BOOKS :

1. Vasanth Desai, "Dynamics of Entrepreneurial Development and Management", 2007, HPH, Millenium Edition.
2. S.S. Khanka, "Entrepreneurial Development", 2007, S. Chand & Co. Ltd.
3. Poornima. M Charantimath, "Entrepreneurial Development and Small Business Enterprises" 2006, Pearson Education.
4. David H. Hott, "Entrepreneurship New Venture Creation", 2004, PHI
5. P. Narayana Reddy, "Entrepreneurship – Text and Cases", 2010, 1st Ed. Cengage Learning.
6. Longencker, Morge, Mitchell, "Managing Small Business", Sage South Asia Edition