



S.No/10/Acad/VAC/2021/ 02

Date: 12-08-2021

NOTIFICATION
VALUE ADDED COURSES (VACs)
(With effect from Academic Year 2021-22)

In pursuance of the objectives outlined in the National Education Policy 2020, the Value Added Courses (VACs) seek to fulfil the mandate of providing holistic education to the students. The Value Addition Courses will introduce students to the nation's rich history as well as significant social issues of the present, assisting them in connecting what they study to how they live.

The Value Added courses are designed to ignite the learners' intellectual curiosity and will motivate and direct them on their path to professional and personal growth, resulting in thoughtful, well-rounded, and creative individuals who feel a sense of duty and service to the country. Any student enrolled in an undergraduate degree at the university has the option to choose from a variety of Value Added Courses listed below.

S.No.	Department Name	Course Name	Course Code	Minimum Contact Hours
1	Anthropology	STATISTICAL PACKAGE FOR SOCIAL SCIENCE IN BIO-SOCIAL SCIENCES	LSABU01, LBE01	30
2		STATISTICAL PACKAGE FOR SOCIAL SCIENCE IN SOCIAL SCIENCES	ASUCTL3 & ASUCLL3	30
3	Biotechnology	BIOTECHNOLOGY AND HUMAN WELFARE	BTUATA1	30
4		PLANT TISSUE CULTURE	BTUATL1	30
5		INTELLECTUAL PROPERTY RIGHTS AND ENTREPRENEURSHIP	AEC3	30
6		BIO-MANAGEMENT OF ENVIROMENT	BTUBTA1	30
7	Botany	MUSHROOM CULTURE TECHNOLOGY	BOUATA3	30

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8		BOTANICAL GARDEN AND LANDSCAPING	BOUDTL4	30
9		PLANTS IN TRADITIONAL SYSTEM OF MEDICINE	BOUBTA	30
10	Chemistry	CHEMISTRY IN EVERYDAY LIFE	CYUATA1	30
11		SCIENCE COMMUNICATION AND POPULARIZATION	CYUATL1	30
12		CHEMINFORMATICS	CYUATA2	30
13		FERMENTATION SCIENCE & TECHNOLOGY	CYUATL2	30
14		WATER REMEDIATION AND CONSERVATION	AEC	30
15		IPR AND BUSINESS SKILL FOR CHEMIST	CYUBTL1	30
16		Commerce	CREATIVITY AND ENTREPRENEURSHIP	COUATA1
17	E-COMMERCE		COUATL1	30
18	STOCK MARKET OPERATIONS		COUATL2	30
19	SPIRITUAL MANAGEMENT		COUATA2	30
20	BUSINESS COMMUNICATION		COUBTA1	30
21	NEW VENTURE PLANNING AND DEVELOPMENT		COUBTL1	30
22	PERSONAL TAX PLANNING AND TAX MANAGEMENT		COUBTL2	30
23		TRIBAL ECONOMICS	COUBTA2	30

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24	CSIT	INFORMATION COMMUNICATION TECHNOLOGY	CIUATA1	30
25		HTML AND INTRODUCTION TO JAVA SCRIPT	CIUATL1	30
26		INTRODUCTION TO INTERNET OF THINGS	CIUBTL3	30
27		INTRODUCTION TO JAVA	CIUBTA1	30
28	Economics	NSS AND SOCIAL ECONOMIC DEVELOPMENT	ENUATA1	30
29		MONEY AND FINANCIAL MARKETS	ENUATL1	30
30		ENVIRONMENTAL ECONOMICS	ENUBTL2	30
31	English	ENGLISH COMMUNICATION	ESUATA4	30
32		ENGLISH LANGUAGE	ESUATA5	30
33		SOFT SKILL DEVELOPMENT AND POWERPOINT PRESENTATION	ESUATL6	30
34		SOFT SKILLS	ESUATA1	30
35		LANGUAGE LEARNING THROUGH LITERATURE	ESUBA2	30
36	Forensic Science	HANDWRITING IDENTIFICATION AND RECOGNITION	FSUATL1	30
37		INTRODUCTION TO CRIMINALISTICS	FSUATA1	30
38		FORENSIC RADIOLOGY	FSUBTA2	30
39		INTRODUCTION TO BIOMETRY	FSUBTL1	30

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40	Forestry	ENVIRONMENTAL STUDIES AND DISASTER MANAGEMENT	FOUATA1	30
41		NURSERY TECHNOLOGY	FOUATL1	30
42		MEDICINAL PLANT & AROMATIC PLANT	FOUATA2	30
43	Hindi	रचनात्मक लेखन	HIUATLI	30
44		हिंदी व्याकरण और सम्प्रेषण	HIUATA1	30
45		हिंदी भाषा	HIUATA2	30
46		हिंदी भाषा : एक सामान्य परिचय	HIUBTA2	30
47		साहित्य और हिंदी सिनेमा	HIUBTL1	30
48	History	CULTURAL ECOLOGY: ISSUES AND CONCERN	HSUATA1	30
49		TOURISM: HISTORY AND APPLICATION	HSUATA2	30
50		UNDERSTANDING POPULAR CULTURE	HSUATL1	30
51	Journalism and Mass Communication	RADIO PRODUCTION	JMUATA2	30
52		PHOTOGRAPHY	JMUATA1	30
53		MEDIA, GENDER AND HUMAN RIGHTS	JMUATL2	30
54		DOCUMENTARY PRODUCTION	JMUBTL2	30
55		INTRODUCTION TO FILM STUDIES	JMUBTA1	30

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56	Law	GENERAL & LEGAL ENGLISH- I	LAIATA5	30
57	Library & Information	LIBRARY LITERACY	LIUATA1	30
58	Mathematics	BASICS OF STATISTICS	AMUATA2	30
59		SET THEORY AND LOGIC	AMUATA1	30
60		INTRODUCTION TO CRYPTOGRAPHY	AMUATL1	30
61		GRAPH THEORY	AMUBTL1	30
62		THEORY OF INTERPOLATION	AMUBTA1	30
63	Physics	ANALYTICAL TECHNIQUES IN PHYSICS	PPUATL1	30
64		ELECTRONICS IN DAILY LIFE	AECPL01	30
65		NETWORK CIRCUIT ANALYSIS	PLUATL1	30
66		INDIAN CONTRIBUTION TO PHYSICS	PPUATA1	30
67		PHYSICS FOR SUSTAINABLE FUTURE	AECPP02	30
68		SIMULATION AND DESIGN OF DIGITAL CIRCUIT COMPONENTS	PLUATL2	30
69		RENEWABLE ENERGY AND ENERGY HARVESTING	SECPP02	30
70	Political Science	HUMAN RIGHTS	PSUATA4	30
71		FEMINISM: THEORY AND PRACTICE	PSUATA5	30

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72		LEGISLATIVE PROCEDURES IN INDIA	PSUATL6	30
73		PUBLIC POLICY IN INDIA	SEC2	30
74		MANAGING ELECTION AND ELECTION CAMPAIGN	PSUBTL5	30
75	Rural Technology	ORGANIC FARMING ENGLISH COMMUNICATION / MIL (HINDI COMMUNICATION)	RTUATA1	30
76		HORTICULTURE AND LANDSCAPING	RTUATL1 & RTUALL1	30
77		HERBAL PRODUCTION TECHNIQUES	RTUBTL1	30
78	Social Works	COUNSELING SKILLS FOR SOCIAL WORK PRACTICE	SWUATL70	30
79		NGO MANAGEMENT	SWUATA60	30
80		PROGRAMME MEDIA IN SOCIAL WORK	SWUBTL2	30
81		SOCIAL ACTION AND SOCIAL MOVEMENTS	SWUBTA2	30
82	Zoology	AQUACULTURE	ZOUATL1	30
83		HUMAN HEALTH AND SEX EDUCATION	ZOUATA1	30
84	Physics	ELECTRONICS IN DAILY LIFE	PLUATA1	30
85	Mathematics	SET THEORY AND LOGIC	AMUATA1	30
86	Rural Technology	RURAL HEALTH CARE		30
87	Political Science	PUBLIC ADMINISTRATION	SEC1	30

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88	Physical Education	YOGIC SCIENCE	SW-YCC	30
89	Zoology	VEDIC WISDOM & LIFE SKILLS	YOGA	30
90	Skill Development	BAMBOO WORK ARTISAN	HCS/Q8702	30
91		FITNESS TRAINER	SPF/Q1107	30
92		OCCUPATIONAL STANDARD FOR BEAUTY & WELLNESS PERSONAL TRAINER	BWS/Q3003	30

Registrar,

Guru Ghasidas Vishwavidyalaya,

Bilaspur (C.G.)

(Handwritten Signature)
Registrar (Acting)
Guru Ghasidas Vishwavidyalaya
(A Central University)
Bilaspur (C.G.) 495 009 India

Copy to:

1. The Secretary to the Vice-Chancellor for information to the Hon'ble Vice-Chancellor.
2. The Secretary to the Registrar GGV for kind information.
3. Director, IQAC for kind information.
4. All Deans, SoS for kind information.
5. All Heads, for kind information and necessary action.
6. In charge Website Cell, with a request to upload this notification and the guidelines in the University Website.
7. Office File



Course Contents
of
Value Added Courses



1.

STATISTICAL PACKAGE FOR SOCIAL SCIENCE IN BIO SOCIAL SCIENCES

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
STATISTICAL PACKAGE FOR SOCIAL SCIENCE IN BIO SOCIAL SCIENCES	LSABU01, LBE01	02	02	00	00	Pass in 10+ 2

Course Objectives

- The course is designed to provide the basic concept of SPSS software.
- To study the types of variables, data presentation & summarization.
- To understand descriptive statistics & solving statistical problems.

Syllabus Contents

- Unit I: Descriptive statistics: Types of variables
Unit II: Measures of Central Tendency,
Unit III: Measures of dispersion
Unit IV: Frequency Distribution: Histogram, Bar graph, Pie Chart, Polygraph
Unit V: Test of Inference

Suggested Readings

1. B.L. Agarwal. Basic Statistics. New Age International Publishers. Fourth Edition, 2006.
2. Fox and Alan. Elementary Statistics in Social Research. Gian Publishing House,
3. Sunder Rao, P.S.S. et al. An introduction to Biostatistics & Research Method. New Arrivals-PHI
4. Wackerly Dennis D, Mendelhall III, Wiliam et al. Mathematical Statistics with application Duxbury Press, Pacific Grove.
5. Gaur AS, Gaur SS. Statistical Methods for Practice and Research. A guide to data analysing using SPSS. SAGE Response, New Delhi, India, 2009.
6. Sunder Rao, P.S.S. et al. An introduction to Bio-statistics & Research Method. New Arrivals-PHI.
7. Conover W.J. Practical Nonparametric Statistics. Third Edition. Wiley India (P) Ltd. Ansari Road, Daryaganj, New Delhi. 1999.

Course Outcomes

- Understand different variables, summarization & presentation of data.
- Understand textual, tabular & graphical illustration of data.
- Students will be able to use the knowledge in solving statistical problems
- Meaningful research inferences and conclusion can be drawn by students.

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2.

STATISTICAL PACKAGE FOR SOCIAL SCIENCE (SPSS)

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
Statistical Package for Social Science (SPSS)	LSABU01, LBE01	02	01	00	01	Pass in 10+ 2

Course Outcome

Understand different variables, summarization and presentation of data.

Student will be able to use the knowledge in solving statistical problem

Presentation and summarization of data: Types of variables and Data presentation (tabulation, illustration)

Test of Inference: Chi-Square Test, Students't test, ANOVA, Z score.

Correlation: Coefficient of Co-variation, Coefficient of Correlation

Practical

Descriptive statistics & Solving Statistical problems: Measures of Central Tendency, Frequency Distribution: Histogram, Bar graph, Pie Chart, Polygraph

Suggested Readings

1. B.L. Agarwal. Basic Statistics. New Age International Publishers. Fourth Edition, 2006.
2. Fox and Alan. Elementary Statistics in Social Research. Gian Publishing House,
3. Sunder Rao, P.S.S. et al. An introduction to Biostatistics & Research Method. New Arrivals-PHI
4. Wackerly Dennis D, Mendelhall III, Wiliam et al. Mathematical Statistics with application Duxbury Press, Pacific Grove.
5. Gaur AS, Gaur SS. Statistical Methods for Practice and Research. A guide to data analysing using SPSS. SAGE Response, New Delhi, India, 2009.
6. Sunder Rao, P.S.S. et al. An introduction to Bio-statistics & Research Method. New Arrivals-PHI.
7. Conover W.J. Practical Nonparametric Statistics. Third Edition. Wiley India (P) Ltd. Ansari Road, Daryaganj, New Delhi. 1999.

3.

BIOTECHNOLOGY AND HUMAN WELFARE

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
BIOTECHNOLOGY AND HUMAN WELFARE	BTUATA1	02	02	00	00	Pass in 10+ 2

Course Objective

The objective of this course is to introduce the scope of biotechnology for human welfare.

Course Learning Outcomes

Learning outcomes on completion of this course the students will be able to;

- Understand industrial biotechnology related techniques.
- Understand agriculture and environmental biotechnology related techniques.
- Understand forensic science related technique
- Understand molecular diagnosis techniques.

Course contents

Unit I

Industry: protein engineering; enzyme and polysaccharide synthesis, activity and secretion, Enzyme immobilization: methods and application.

Unit II

Agriculture and Environments: Plant Tissue culture, N₂ fixation, transgenic plants: insect resistance, bacterial/ fungal stress tolerance, drought/salt tolerance, bioremediation, biofertilizers, biopesticides, biofuels and bioleaching.

Unit III

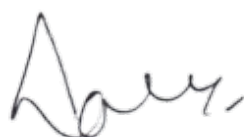
Forensic science: solving violent crimes such as murder and rape; solving claims of paternity and theft etc. using various methods of DNA finger printing, Polymerase chain reaction, Restriction fragment length polymorphism.

Unit IV

Health: development of non- toxic therapeutic agents, recombinant live and DNA vaccines, gene therapy, Molecular diagnosis: (monoclonal antibodies, DNA probes, Microarrays), transgenic animals.

Suggested Reading

1. Sateesh MK Bioethics and Biosafety, I. K. International Pvt Ltd.
2. Sree Krishna V Bioethics and Biosafety in Biotechnology, New age international publishers
3. Gupta, Elements of Biotechnology
4. Dubey, T. B. of Biotechnology
5. Kumar H. Modern Concept of Biotechnology
6. Jogdand, Advances in Biotechnology
7. Chatwal, T. B. of Biotechnology
8. Primrose, Molecular Biotechnology





4.

PLANT TISSUE CULTURE

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
PLANT TISSUE CULTURE	BTUATL1	02	02	00	00	Pass in 10+ 2

Course Objective

The course deals with the Plant tissue culture principles and basic techniques. The objective of the course is to make students well-versed with the methods and techniques of plant tissue culture and its application.

Course Learning Outcomes

- Students will acquire skills related to plant tissue culture
- Students will acquire skills on plant tissue culture techniques
- Students will acquire skills on Micropropagation
- Students will acquire skills related to In-vitro Fertilization

Course contents

Unit-I (Introduction to Plant Tissue culture)

Introduction to Plant Tissue culture, Terms and definitions, Historical background, Laboratory organization, Tools and techniques, methods of sterilization. Laboratory contaminants- it's control and measures.

Unit-II (Media and Culture Preparation)

Role of Micro and macro nutrients, Vitamins and carbon source in tissue culture, Media preparation- pH, Temperature, Solidifying agents, Slant Preparations etc. Maintenance of cultures, Environmental Conditions, explants characteristics.

Unit-III (Culture techniques)

Explants selection, sterilization and inoculation; Various media preparations; MS, B5, SH PC L-2; Callus and cell suspension culture.

Unit-IV (Initiation of Cultures)

Induction and growth parameters; Culture initiation, Callus culture., Micropropagation through various explants

Unit-V (In-vitro Fertilization)

Role of Ovary and ovule in In-vitro Fertilization in production of agricultural and horticultural crops. Techniques and significance of Androgenesis and Gynogenesis (ovary, ovule, egg, synergids culture)

Suggested Reading

1. Bhojwani S.S. And Rajdan M.K. (1983). Plant Tissue Culture : Theory and practice.
2. Reinert J.and Bajaj Y.P.S. (1977). Applied and Fundamental Aspects of Plant Cell, Tissue and Organ Culture, By Springer - Verlag, Berlin
3. Amritrao, P.V.D.A. Evans, W. P. Sharp and Bajaj Y.P.S. (1990) Handbook of Plant Cell Culture volumes I-V, McGraw Hill Publishing Co.,New York.
4. Chawla, H.S. 2000. Introduction to Plant Biotechnology. Oxford & IBH Publishing Co. Pvt. Ltd. New Delhi.
5. Dixon, R.A. and Gonzales, R. A. (Eds.) 1994. Plant Cell Culture - A Practical Approach. Oxford University Press, New York.

5.

INTELLECTUAL PROPERTY RIGHT AND ENTREPRENEURSHIP

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
INTELLECTUAL PROPERTY RIGHT AND ENTREPRENEURSHIP		02	02	00	00	Pass in 10+ 2

Course Objective

The objective of the course is to introduce the students about the basic knowledge on intellectual property rights and their implications in biological research and product development; students become familiar with India's IPR Policy; about concepts of entrepreneurship including identifying a winning business opportunity, gathering funding and launching a business, growing and nurturing the organization and harvesting their wards.

Course Learning Outcomes

Learning outcomes on completion of this course the students will be able to;

- Understand different types of intellectual property rights.
- Understand the protection of products derived from biotechnology research
- Understand Indian patent Act and issues related to application and obtaining patents.
- Understand entrepreneurial skills
- Understand role of entrepreneurship in developing economy

Course contents

Unit I

Introduction to Indian Patent Law, World Trade Organization and its related intellectual property provisions, Intellectual/Industrial property and its legal protection in research, design, development in Biotechnology

Unit II

Essential requirements for patenting, types of patent, things that are patentable and non-patentable, Drug patents in India, various types of patent application in India, patenting of living organism, traditional knowledge, commercial exploitation and protection.

Unit III

Concept of entrepreneur, nature of entrepreneur, entrepreneurial characteristics, functions of an entrepreneur, role of entrepreneurship in developing economy.

Unit IV

Entrepreneurship: Selection of a product, line, design and development processes, economics on material and energy requirement, stock the product and release the same for making etc. The basic regulations of excise: Demand for a given product, feasibility of its production under given constraints of raw material, energy input, financial situations export potential etc.

Suggested Reading

1. Ganguli, P. (2001). Intellectual Property Rights: Unleashing the Knowledge Economy. New Delhi: Tata McGraw-Hill Pub.
2. National IPR Policy, Department of Industrial Policy & Promotion, Ministry of Commerce, GoI
3. Complet eReference to Intellectual Property Rights Laws. (2007).
4. Kuhse, H.(2010).Bioethics: an Anthology. Malden , M A:Blackwell.



6.

BIO-MANAGEMENT OF ENVIROMENT

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
BIO-MANAGEMENT OF ENVIROMENT	BTUBTA1	02	02	00	00	Pass in 10+ 2

Course Objective

The aim of the course is to study the different techniques such as bioremediation (using microorganisms) and phytoremediation (using plants) techniques which is helpful for the degradation of environmental pollutants such as pesticides, heavy metals, radioactive substances etc. present in the soil, water and aquifers.

Course Learning Outcomes

- On the successful completion of the course, students are aware of the bio management of soil.
- Have knowledge about bio management of petroleum contaminant.
- Aware of the bio management of heavy metal.
- Have the knowledge of bioremediation (using microorganisms) and phytoremediation techniques.

Course contents

Unit I

Bio management of soil: An overview of global market and available technologies local gain, global loss: The Environmental cost of action, bioavailability of contaminants in soil, microbial remediation of metals in soils

Unit II

Bio management of Petroleum Contaminants: benzene-contaminated underground aquifers. Biomining, Bioleaching, Enrichment of ores by microorganisms (Gold, Copper and Uranium). Environmental significance of genetically modified microbes, plants and animals, Molecular aspects and applications in biotechnology

Unit III

Biosurfactants, strategies based on the use of fungal enzymes, anaerobic Metabolism and bioremediation of BTEX Hydrocarbons (Benzene, Toluene, Ethylbenzene, and Xylene), Treatment of municipal waste and Industrial effluents, Bio-fertilizers, Role of symbiotic and asymbiotic nitrogen fixing bacteria in the enrichment of soil, Algal and fungal biofertilizers (VAM)

Unit IV

Heavy metal phytoremediation: Microbial indicators of soil health for the assessment of remediation efficiency. Environment and the tools in rhizo- and bioremediation of contaminated soil molecular tools for monitoring and validating bioremediation, genetic engineering of bacteria and their potential for bioremediation

Suggested Reading

1. S.C. Santra, Environmental Science
2. Pradipta Kumar Mohapatra, Environmental Biotechnology
3. Hans-Joachim Jordening and Jesef Winter, Environmental Biotechnology – Concepts and Applications
4. Metcalf and Eddy, Tata McGraw hill, Waste Water Engineering
5. S.S. Purohit, Agricultural Biotechnology
6. Alicia L. Ragout De Spencer, John F.T. Spencer, Environmental Microbiology : Methods and Protocols
7. Milton Wainwright, Introduction to Environmental Biotechnology



7.

MUSHROOM CULTURE TECHNOLOGY

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
MUSHROOM CULTURE TECHNOLOGY	BOUATA3	02	02	00	00	Pass in 10+ 2

Learning outcomes:

On completion of this course, the students will be able to:

- Recall various types and categories of mushrooms.
- Demonstrate various types of mushroom cultivating technologies.
- Examine various types of food technologies associated with mushroom industry.
- Value the economic factors associated with mushroom cultivation
- Devise new methods and strategies to contribute to mushroom production.

Keywords:

Edible mushrooms, Poisonous mushrooms, Cultivation technology, Mushroom bed, Mushroom unit, Storage and Nutrition

Unit I

Introduction, History. Nutritional and medicinal value of edible mushrooms; Poisonous mushrooms. Types of edible mushrooms available in India – *Volvariella volvacea*, *Pleurotus citrinopileatus*, *Agaricus bisporus*.

Unit II

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. Pure culture: Medium, sterilization, preparations of spawn, multiplication. Mushroom bed preparation - paddy straw, sugarcane trash, maize straw, banana leaves. Factors affecting the mushroom bed preparation-Low cost technology; Composting technology in mushroom production.

Unit III

Storage and nutrition: Short-term storage (Refrigeration – up to 24 hours) Long term Storage (canning, pickles, papads), drying, storage in salt solutions. Nutrition- Proteins- amino acids, mineral elements nutrition-Carbohydrates, Crude fibre content-Vitamins.

Unit IV

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.



BOTANICAL GARDEN AND LANDSCAPING

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
BOTANICAL GARDEN AND LANDSCAPING	BOUDTL4	02	02	00	00	Pass in 10+ 2

Learning outcomes:

After the completion of this course the learner will be able to:

- Apply the basic principles and components of gardening
- Conceptualize flower arrangement and bio-aesthetic planning
- Design various types of gardens according to the culture and art of bonsai
- Distinguish between formal, informal and freestyle gardens
- Establish and maintain special types of gardens for out door and indoor landscaping

Keywords:

Gardening, Landscaping, Flower arrangement, Vertical gardens, Roof gardens, Computer aided designing

Unit I

Principles of gardening, garden components, adornments, law making, methods of designing rockery, water garden, etc. Special types of gardens, their walk-paths, bridges, constructed features. Greenhouse. Special types of gardens, trees, their design, values in landscaping, propagation, planting shrubs and herbaceous perennials. Importance, design values, propagation, plating, climbers and creepers, palms, ferns, grasses and cacti succulents.

Unit II

Flower arrangement: importance, production details and cultural operations, constraints, post-harvest practices. Bioaesthetic planning, definition, need, round country planning, urban planning and planting avenues, schools, villages, beautifying railway stations, damsites, hydroelectric stations, colonies, riverbanks, planting material for playgrounds.

Unit III

Vertical gardens, roof gardens. Culture of bonsai, art of making bonsai. Park sand public gardens. Landscape designs, Styles of garden, formal, Informal and free style gardens, types of gardens, Urban landscaping, Landscaping for specific situations, institutions, Industries, residents, hospitals, roadsides, traffic islands, damsites, IT parks, corporate.

Unit IV

Establishment and maintenance, special types of gardens, Bio-aesthetic planning, eco-tourism, theme parks, indoor gardening, therapeutic gardening, non-plant components, water scaping,;Computer Aided Designing (CAD) for outdoor and indoor scaping Exposure to CAD (Computer Aided Designing)



9.

PLANTS IN TRADITIONAL SYSTEM OF MEDICINE

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
PLANTS IN TRADITIONAL SYSTEM OF MEDICINE	BOUBTA	02	01	00	01	Pass in 10+ 2

Learning outcomes:

On completion of this course, the students will be able to:

- 1. Conceptualize ethnobotany as an interdisciplinary science
- 2. Restate the established methodology of ethnobotany studies
- 3. Categories various indigenous ethnic groups and their environmental practices.
- 4. Understand the legalities associated with ethnobotany.

Keywords:

Ethnobotany, Ethnic groups, Ethnobotanical sources, Biopiracy, Endangered taxa

Unit I: Ethnobotany

7 lectures

Introduction, concept, scope and objectives; Ethnobotany as an interdisciplinary science. The relevance of ethnobotany in the present context; Major and minor ethnic groups or Tribals of India, and their life styles. Plants used by the tribals: a) Food plants b) intoxicants and beverages c) Resins and oils and miscellaneous uses.

Unit II: Methodology of Ethnobotanical Studies

7 lectures

a) Field work b) Herbarium c) Ancient Literature d) Archaeological findings e) temples and sacred places.

Unit III: Role of Ethnobotany in Modern Medicine

9 lectures

Medico-ethnobotanical sources in India; Significance of the following plants in ethno botanical practices (along with their habitat and morphology) a) *Azadirachta indica* b) *Ocimum sanctum* c) *Vitex negundo*. d) *Gloriosa superba* e) *Tribulus terrestris* f) *Pongamia pinnata* g) *Cassia auriculata* h) *Indigofera tinctoria*.

Role of ethnobotany in modern medicine with special example *Rauvolfia serpentina*, *Trichopus zeylanicus*, *Artemisia*, *Withania*. Role of ethnic groups in conservation of plant genetic resources. Endangered taxa and forest management (participatory forest management).

Unit IV: Ethnobotany and Legal Aspects

7 lectures

Ethnobotany as a tool to protect interests of ethnic groups. Sharing of wealth concept with few examples from India. Biopiracy, Intellectual Property Rights and Traditional Knowledge.

Practical

1. Visit to the field and botanical garden in the nearby area and attempt to identify the plants
2. Attempt be made to grow the ethnobotanical plants
3. Visit the villages and rural areas to consult some senior people to discuss the traditional medicines being used since ages.



10.

CHEMISTRY IN EVERYDAY LIFE

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
CHEMISTRY IN EVERYDAY LIFE	CYUATA1	02	02	00	00	Pass in 10+ 2

Learning Objective:

On completion of this course, the students will be able to:

1. Understand the chemical processes involved in daily life
2. Know the respiration process in terms of chemistry
3. Understand chemicals hazardous for health
4. Understand chemical structures of various vitamins
5. Understand role of minerals in important biological processes.

Unit I: Respiration and energy production in human body

8 Lectures

Respiration, Respiratory enzymes, brief outline of hemoglobin and myoglobin, oxygen transport mechanism in body, co-operativity, Respiration in lower animals, hemocyanine, hemerythrin. Energy production in body, ATP; enzyme responsible for food digestion, mechanism of food digestion, active site of cytochrome c-oxidase.

Unit II: Chemical aspects of some common health hazards

5 Lectures

Anemia, sickle cell anemia, leukemia, blood pressure irregularity, blood sugar, arthritis, carbonmonoxide poisoning in mines, cyanide poisoning, fluorosis etc.

Unit III: Vitamins and minerals

5 Lectures

Need for vitamin in body, types of vitamins, water soluble and fat-soluble vitamins, Vitamin B- 12, vitamin C (Cyanocobalamin), D, Vitamin K. Role of minerals in body, iodine deficiency and remedy.

Unit IV: Significance of Radical chemistry in living system

10 Lectures

Radical production in environment, superoxide and peroxide, health impact, action of radicals, cell mutation, diseases caused by free radical, cancer, radical quencher, anti-oxidants, natural anti-oxidants like vegetables, beverages like tea and coffee, fruits. Radical destroying enzymes: superoxide dismutase, catalase, peroxidase, mechanism of action.

Unit V: Chemistry of Materials

10 Lectures

Soaps and Detergents – their action, Biofuels – production of biofuels and its utility as alternative fuel source, Fibers: natural fibers, cotton, wool, silk, rayon, artificial fibers, polyamides, acrylic acid, PVC, PVA; Examples of natural biodegradable polymers, cellulose, cellulose acetate, cellophane, soy protein, corn, zein protein, wheat gluten protein, synthetic biodegradable polymers. Use of polymeric materials in daily life.

Suggested Laboratory experiments:

1. Analysis of soaps and detergents.
2. Analysis of Biofuels - flash point, pour point, cloudpoint
3. Preparation of Nylon 6/6,6
4. Testing of adulterant in food, oil and vegetable

SCIENCE COMMUNICATION AND POPULARIZATION

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
SCIENCE COMMUNICATION AND POPULARIZATION	CYUATL1	02	02	00	00	Pass in 10+ 2

Learning outcomes:

After the completion of this course, the learner will be able to:

1. Identify the need and role of science communication in humandevelopment
2. utilize visual media science communication for creating scripts anddocumentaries
3. Contribute in science popularization through internet communication and public sensitization

Keywords:

Print science, Visual media, Internet communication, Blogs, Outreach talks, Public sensitization

Unit I: PrintScienceCommunication

9 lectures

Need for Science Journalism: Science has potential for breaking news, impact on Human life, impact on technology. Role of science and technology in human development.Framing policies at national and international levels. Writing and communicating popular articles effectively, case studies of celebrated works of science communicators including Cosmos by Carl Sagan, works of Bill Bryson, Richard Dawkins, Richard Feynman, Isaac Asimov, Carl Zimmer and Matt Riddley, importance for communication through regionallanguages.

Unit II: Visual MediaScienceCommunication

7 lectures

Science outreach through visual media: Creating science documentaries, creating the outline and expanding, scripts, citing authentic sources, case study: Famous documentaries of Carl Sagan, David Attenborough and Prof. Yashpal

Unit III: InternetScienceCommunication

7 lectures

Science outreach through internet: Social media, Websites, Blogs, Youtube, Podcast etc.

Unit IV: Science Outreach Talks and Public Sensitization

7lectures

Tactics for providing a charismatic and effective public talk, use of metaphors, speaking incontext, Science outreach for biodiversity conservation sensitization of public

Suggested Readings

1. Selected works of Carl Sagan, works of Bill Bryson, Richard Dawkins, Richard Feynman, Isaac Asimov, Carl Zimmer and MattRiddley.
2. Gigante, E. Marie (2018). Introducing Science Through Images: Cases of Visual Popularization (Studies in Rhetoric/Communication), University of South CarolinaPress.

Course Outcome:

Graduate will have understanding of:

1. Identify the need and role of science communication in human development
2. Utilize visual media science communication for creating scripts and documentaries
3. Contribute in science popularization through internet communication and public sensitization



12.

CHEMINFORMATICS

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
CHEMINFORMATICS	CYUATA2	02	02	00	00	Pass in 10+ 2

Learning Objective:

On completion of this course, the students will be able to:

- i. Know about the history and prospects of chemo-informatics
- ii. Represent molecules and chemical reaction using different notations, SMILES and Matrix representation
- iii. Search chemical structure and application of chemo-informatics in various fields

Unit I

5 Lectures

Introduction to Chemo-informatics: History, Prospects of chemoinformatics, Molecular Modelling and Structure elucidation.

Unit II

10 Lectures

Representation of molecules and chemical reactions: Nomenclature, Different types of notations, SMILES coding, Matrix representations, Structure of Molfiles and Sdfiles, Libraries and toolkits, Different electronic effects, Reaction classification.

Unit III

10 Lectures

Searching chemical structures: Full structure search, sub-structure search, basic ideas, similarity search, three dimensional search methods, basics of computation of physical and chemical data and structure descriptors, data visualization.

Unit IV

15 Lectures

Applications: Prediction of Properties of Compounds; Linear Free Energy Relations; Quantitative Structure-Property Relations; Descriptor Analysis; Model Building; Modeling Toxicity; Structure-Spectra correlations; Prediction of NMR, IR and Mass spectra; Computer Assisted Structure elucidations; Computer Assisted Synthesis Design, Introduction to drug design; Target Identification and Validation; Lead Finding and Optimization; Analysis of HTS data; Virtual Screening; Design of Combinatorial Libraries; Ligand and structure based drug design; Applications in Drug Design.

Recommended Books/references:

1. Andrew R. Leach and Valerie, J. Gillet (2007) *An introduction to Chemoinformatics*. Springer: The Netherlands.
2. Gasteiger, J. and Engel, T. (2003) *Chemoinformatics: A text-book*. Wiley-VCH.
3. Gupta, S. P. (2011) *QSAR & Molecular Modeling*. Anamaya Pub.: New Delhi.

Course Outcome:

Graduate will have understanding of:

1. The history and prospects of chemo-informatics.
2. Represent molecules and chemical reaction using different notations, SMILES and Matrix representation.
3. Search chemical structure and application of chemo-informatics in various fields.



13.

FERMENTATION SCIENCE & TECHNOLOGY

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
FERMENTATION SCIENCE & TECHNOLOGY	CYUATL2	02	02	00	00	Pass in 10+ 2

Learning outcomes:

After completing this course, the learner will be able to:

1. Employ the process for maintenance and preservation of microorganisms
2. Analyze the various aspects of the fermentation technology and apply for Fermentative production
3. Demonstrate proficiency in the experimental techniques for microbial production of enzymes: amylase and protease, bio product recover

UnitI

8 Lectures

Preparation of microbial culture, Preparation and sterilization of fermentation media. Isolation and improvement of industrially important microorganisms.

UnitII

8 Lectures

Maintenance and preservation of microorganisms, Metabolic regulations and overproduction of metabolites. Kinetics of microbial growth and product formation.

UnitIII

8 Lectures

Scope and opportunities of fermentation technology. Principles of fermentation: Submerged, solid state, batch, fed-batch and continuous culture. Fermentative production of vinegar, alcohol (ethanol, wine, beer), acids (citric acid and gluconic acid), amino acids (lysine and glutamic acid) and antibiotics (penicillin and streptomycin).

UnitIV

6 Lectures

Microbial production of enzymes: Amylase and Protease. Bioproduct recovery.

Suggested readings

1. Waites M.J. (2008). Industrial Microbiology: An Introduction, 7th Edition, Blackwell Science, London, UK.
2. Prescott S.C., Dunn C.G., Reed G. (1982). Prescott & Dunn's Industrial Microbiology, 4th Edition, AVI Pub. Co., USA.
3. Reed G. (2004). Prescott & Dunn's industrial microbiology, 4th Edition, AVI Pub. Co., USA.
4. JR Casida L.E. (2015). Industrial Microbiology, 3rd Edition, New Age International (P) Limited Publishers, New Delhi, India.
5. Waites M.J., Morgan N.L., Rockey J.S. and Higton G. (2001) Industrial Microbiology: An Introduction. 1st Edition, Blackwell Science, London, UK.
6. Pelczar M.J., Chan E.C.S. and Krieg N.R. (2003) Microbiology. 5th Edition, Tata McGraw-Hill Publishing Company Limited, New Delhi.

Course Outcome:

Graduate will have understanding of:

1. Employ the process for maintenance and preservation of microorganisms
2. Analyze the various aspects of the fermentation technology and apply for Fermentative production
3. Demonstrate proficiency in the experimental techniques for microbial production of enzymes: amylase and protease, bio products recover

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14.

WATER REMEDIATION AND CONSERVATION STUDIES

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
WATER REMEDIATION AND CONSERVATION		02	02	00	00	Pass in 10+ 2

Learning Objective:

On completion of this course, the students will be able to:

- Know about the various sources of water pollution
- Know the normal standard of potable water as per WHO recommendation
- Understand water conservation and erosion of soil
- Develop various water remediation and conservation studies

Unit-I

10 Lectures

Sources of water pollutants, pollutants, Industrial and human contribution, WHO recommendation about potable water, current scenario of drinking water quality, chemistry of toxicants like arsenic, fluoride, chromium, lead and mercury, cause and effects of water pollution, remediation, techniques involved such as adsorption, coagulation-filtration, Nalgonda techniques, reverse osmosis, activated charcoal detoxification, applications of non-toxic oxides and mixed oxides, regeneration and recycling, mechanisms of detoxification, bio-remediation, need of green chemistry, futurescope.

Unit-II

10 Lectures

Introduction to water conservation and erosion of soil, forms of water erosion, factors affecting water erosion, types of water erosion, mechanics of water erosion control, agronomical measures of water erosion control, Terraces for water erosion control:

Modeling of watershed processes, Case study of water-shed modeling for water conservation and water quality.

Recommended Books/references:

1. CITTENDEN J. C. , TRUSSELL J. R., HAND D. W., HOWE K. J., TCHOBANOGLOUS G. , Water treatment: Principles and Design MWHpublication.
2. DE A. K. Environmental Chemistry, WileyEastern
3. CLARSON D., DARA S. S. A text book of Environmental chemistry and pollution control, S Chand Co. Soil and water analyticalmethod
4. EDZWALD J., Water Quality & Treatment: A Handbook on Drinking Water (Water Resources and Environmental EngineeringSeries)

Course Outcome:

Graduate will have understanding of:

1. The various sources of water pollution
2. The normal standard of potable water as per WHO recommendation
3. Water conservation and erosion of soil
4. Develop various water remediation and conservation studies





15.

IPR AND BUSINESS SKILL FOR CHEMIST

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
IPR AND BUSINESS SKILL FOR CHEMIST	CYUBTL1	02	02	00	00	Pass in 10+ 2

Learning outcome

On completion of this course, the students will be able to:

- Know History, types and important of intellectual property.
- Have understanding about different types of trademarks.
- Know about Patent and copyright transfer system
- Learn about registration, Industrial design and trade secrets and different international agreements about IPR

Introduction to Intellectual Property:

Historical Perspective, Different Types of IP, Importance of protecting IP.

Copyrights

Introduction, How to obtain, Differences from Patents.

Trade Marks

Introduction, How to obtain, Different types of marks – Collective marks, certification marks, service marks, Trade names, etc. Differences from Designs.

Patents Historical Perspective, Basic and associated right, WIPO, PCT system, Traditional Knowledge, Patents and Healthcare – balancing promoting innovation with public health, Software patents and their importance for India.

Geographical Indications

Definition, rules for registration, prevention of illegal exploitation, importance to India.

Industrial Designs

Definition, How to obtain, features, International design registration.

Layout design of integrated circuits

Circuit Boards, Integrated Chips, Importance for electronic industry.

Trade Secrets

Introduction, Historical Perspectives, Scope of Protection, Risks involved and legal aspects of Trade Secret Protection.

Different International agreements

(a) World Trade Organization(WTO):

(i) General Agreement on Tariffs & Trade (GATT), Trade Related Intellectual Property Rights (TRIPS) agreement (ii) General Agreement on Trade related Services (GATS) (iii) Madrid Protocol (iv) Berne Convention (v) Budapest Treaty.

(b) ParisConvention

WIPO and TRIPS, IPR and Plant Breeders Rights, IPR and Biodiversity

IP Infringement issue and enforcement – Role of Judiciary, Role of law enforcement agencies – Police, Customs etc. Economic Value of Intellectual Property – Intangible assets and their valuation, Intellectual Property in the Indian Context – Various laws in India Licensing and

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technology transfer.

Business Basics

Key business concepts: Business plans, market need, project management and routes to market.

Chemistry in Industry

Current challenges and opportunities for the chemistry-using industries, role of chemistry in India and globaleconomies.

Financial aspects

Financial aspects of business with case studies.

Recommended Books/References:

1. Acharya, N.K. Textbook on intellectual property rights, Asia Law House(2001).
2. Guru, M. & Rao, M.B. Understanding Trips: Managing Knowledge in Developing Countries, Sage Publications(2003).
3. Ganguli, P. Intellectual Property Rights: Unleashing the Knowledge Economy, Tata McGraw- Hill(2001).
4. Miller, A.R. & Davis, M.H. Intellectual Property: Patents, Trademarks and Copyright in a Nutshell, West Group Publishers(2000).
5. Watal, J. Intellectual property rights in the WTO and developing countries, Oxford University Press, NewDelhi.

Dr. ...



16.

CREATIVITY AND ENTREPRENEURSHIP

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
CREATIVITY AND ENTREPRENEURSHIP	COUATA1	02	02	00	00	Pass in 10+ 2

Objective: The course aims to enable learners to explore approaches used by managers and organizations for creating and sustaining high levels of innovation.

Learning Outcomes: After completion of the course, learners will be able to:

1. Analyze the creative thoughts of renowned personalities in the past and its contribution towards the success and shortcomings of business model;
2. Generate Innovative idea for business and defend/ justify the same;
3. Interpret the Business Competence achieved by various organisations by using the Innovative Business Model;
4. Describe the significance of Innovative Leadership;
5. Analyze patents already granted in their field of interest and make a case with innovative idea for filing a new patent.

COURSE CONTENTS:

Unit	Contents	Weightage of Marks (in %)	C & K	A & A
Unit - 1	Introduction Meaning & Concept of Creativity; Creativity Process; Nature & Characteristics of Creativity and Creative Persons; Factors affecting Creativity; Recognizing and Avoiding Mental Blocks; Thinking Preferences; Risk Taking; Creativity Styles; Creative Thinking Tools; Innovation vs Creativity.	20	✓	
Unit - 2	Idea Generation & Creativity in Problem Solving Ideation; Pattern Breaking Strategies; Mind stimulation: games, brain-twisters and puzzles; Idea-collection processes: Brainstorming/Brain-writing.	20	✓	✓
Unit - 3	Innovation Management Invention and Discovery- Process and Typology; Methods and Techniques; Arenas of Innovative Competence; Categories of Innovation: Product, Process, and Service Finance (Venture Capital, Angel Investors).	20	✓	
Unit - 4	Setting the Right Ecosystem for Innovation The Essence of Right Ecosystem; Intrinsic Motivation & Extrinsic Motivation; Leadership Styles fostering Innovation; Creating Self-Sustaining Culture of Innovation.	20	✓	✓
Unit - 5	Intellectual Property Introduction to intellectual property: Patents (novel, useful, and not obvious), Copyrights, Trademarks.	20	✓	✓

Practical Exercises:

The learners are required to:

1. Identify a creative person to comprehend, study, analyze, and present a report highlighting the contribution of his/her creative work.
2. Generate a creative idea for business and present the same in the class for critical evaluation by other learners regarding its uniqueness and feasibility.
3. Identify an Innovative Business Model (like Amazon, Redubs, Flipkart, Ola, Uber, Big Basket, Zomato, Swiggy, etc.) used by an organisation recently and present a report on Business Competence achieved by it.
4. Analyze the case study on Innovative Leader like Steve Jobs who launched Apple's iPod & iPhone or any other case study on innovation and present a report on the key learnings.
5. Select an aspect (in the field of their interest) on which patent has been granted already and think of an innovative idea so that it makes a case for filing a new patent application.

Suggested Readings:

1. Harvard Business Essentials. (2003). Managing Creativity and Innovation. Boston: Harvard Business School Publishing.
2. Prather, C. (2010). The Manager's Guide to Fostering Innovation and Creativity in Teams. New York: McGraw-Hill Education.

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17. E-COMMERCE

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
E-COMMERCE	COUATL1	02	02	00	00	Pass in 10+ 2

Objective: The course aims to enhance skills for effective and contemporary applications of E-commerce.

Learning Outcomes: After completion of the course, learners will be able to:

1. Describe the challenging needs of the society in the field of E-commerce;
2. Identify various activities and operations in the context of online transactions;
3. Describe various e-payment systems;
4. Analyse security issues in E-commerce and determine various provisions in the IT Act, 2000.

COURSE CONTENTS:

Unit	Contents	Weightage of Marks (In %)	C & K	A & A
Unit - 1	<p>Introduction to E- Commerce Concepts and significance of E-commerce; driving forces of E-commerce; E-commerce business models - Functions of E- Commerce; Types of E-Commerce; E-Commerce Systems and Prerequisites, Scope of E-Commerce, E- Commerce Models.</p> <p>E-Commerce Activities and Operations Various E-Commerce activities; various manpower associated with e-commerce activities; Types of E-Commerce Providers and Vendors; Modes of operations associated with E-Commerce; E-Commerce types. E-commerce applications in various industries (banking, insurance, payment of utility bills and others), e- marketing, e-tailing, online services, e-auctions, online portal, online learning, e-publishing and e-entertainment,online shopping.</p>	50	✓	✓
Unit - 4	<p>E-payment System E-payment Methods- Debit card, Credit card, Smart cards, E-Money, E-Wallets; Digital signatures- procedures and legal position; Payment gateways; Online banking- concepts, importance; Electronic fund transfer; Automated Clearing House. Automated Ledger Posting. Emerging modes and systems of E-payment (M-Palsa, PayPal and other digital currency), UPI Apps, Aadhar Enabled Payment Systems, BHIM App E-payments risks.</p> <p>Security and Legal Aspects of E-commerce E-commerce security – meaning and issues. Security threats in the E-commerce environment- security intrusionsand breaches, attacking methods like hacking, sniffing, cyber-vandalism etc.; Technology solutions- encryption.</p>	50	✓	✓

Practical Exercises:

The learners are required to:

1. Help others to learn the use of e-wallet, e-payment, and digital signatures. Prepare a report on the skills used by them to help others learn.
2. Design their own webpage (Blog), highlighting their strengths, weaknesses, and prepare their CV. Use the link in their CV while applying for the job.
3. Use the internet banking facility to buy a product from any online website.
4. Open internet banking account and operate it.
5. Create their own YouTube channel and post one video on awareness of cyber security and crime.



18.

STOCK MARKET OPERATION

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
STOCK MARKET OPERATIONS	COUATL2	02	02	00	00	Pass in 10+ 2

Objective: The course aims to impart basic knowledge about the structure and functioning of the stock market in India and to learn trading on the stock exchange.

Learning Outcomes: After completion of the course, learners will be able to:

1. Explain the basic concept of securities market;
2. Practice trading on stock market;
3. Explain different segment of Stock Exchange;
4. Perform demat trading.

COURSE CONTENTS:

Unit	Contents	Weightage of Marks (in %)	C & K	A & A
Unit - 1	Introduction: Concept and types of Securities; Concept of return; Concept, types and measurement of risk; Development of Securities market in India.	15	✓	
Unit - 2	Primary Market: Concept, Functions and Importance; Functions of New Issue Market (IPO, FPO & OFS); Methods of Floatation-fix price method and book building method; Pricing of Issues; Offer Documents; Appointment and Role of Merchant Bankers, Underwriters, Lead Managers, Syndicate Members, Brokers, Registrars, Bankers, ASBA and Listing of Securities.	35	✓	✓
Unit - 3	Secondary Market: Concept; Functions and Importance; Mechanics of Stock Market Trading-Different Types of Orders, Screen Based Trading, Internet-Based Trading and Settlement Procedure; Types of Brokers.	35	✓	
Unit - 4	Demat Trading: Concept and Significance; Role of Depositories and Custodian of Securities in Demat Trading.	15	✓	✓

Practical Exercises:

The learners are required to:

1. Prepare the steps involved in pre and post management of hypothetical case of IPO/FPO.
2. Make a comparative analysis of IPOs to identify parameters of success and causes of failure.
3. Equip them to trading screen of National Stock Exchange (www.nseindia.com) and demonstrate Procedure of placing buying /selling order.

Suggested Readings:

1. Gordon E. and Natarajan K. (2019). Financial Markets and Services. New Delhi: Himalaya Publishing House.
2. Benjamin, G. (1949). The Intelligent Investor. New York: Harper Publishing.
3. Dalton, J. M. (2001). How The Stock Market Works? New York: Prentice Hall Press.
4. Machiraju, H. R. (2019). Merchant Banking. New Delhi: New Age Publishers.
5. Gala, Jitendra (2020). Guide to Indian Stock Market. Mumbai, Maharashtra: Buzzingstock Publishing House
6. Kiyosaki, Robert T. (2017). Rich Dad, Poor Dad. USA: Plata Publishing
7. Basu, Debashis & Dalal, Sucheta (2019). The Scam: From Harshad Mehta to Ketan Parekh. Mumbai, Maharashtra: KenSource Information Services Pvt. Ltd.
8. SEBI Regulations from SEBI Website



19. SPIRITUAL MANAGEMENT

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
SPIRITUAL MANAGEMENT	COUATA2	02	02	00	00	Pass in 10+ 2

Objective: This course aims at gaining insight into spirituality. The spiritual process is not logical or linear but associative and re-iterative. Further, we learn spirituality by going more subtly into what we already know. Like the undercurrents of the sea, barely seen but certainly felt, much of spiritual growth goes on subtly underneath the surface and for this reason sometimes it is difficult to describe.

The key purpose of this course is to help the students to develop an awareness of their inner peace, powers, and potentials and a moral compass for living and to teach practical spiritual skills and tools for expressing their potential.

Learning Outcomes: After completion of the course, learners will be able to:

1. Define emotional energy.
2. Describe healing emotional scars.
3. Establish regular meditation. Describe insecurity.
4. Describe self-hypnosis/trance.
5. Describe the astounding effects of visualization.
6. Summarize positive and negative affirmations.
7. Define personal beliefs and values.
8. Describe the conference of the spirits.
9. Describe using fear to your advantage.

COURSE CONTENTS:

Unit	Contents	Weightage of Marks (in %)	C & K	A & A
Unit - 1	<ul style="list-style-type: none"> ✓ Understanding of Origin and Development of Spirituality ✓ Elements of Spirituality: Truthfulness, Integrity, Honesty, Dutifulness, Ethics, Values and their roles in Spirituality ✓ Spiritual values: - Signs of success-Reflection points- Introspection—Peace— Courage— Self-authority— Self Sovereignty—Dedication- Self-actualization ✓ Personality Development: Communication - Proper and adequate communication, Spiritual leadership, considering elements for decision-making. 	50	✓	✓
Unit - 2	<ul style="list-style-type: none"> ✓ Spirituality in Everyday Life - Right Thought, Deed and Practices ✓ Spirituality for Managerial Excellence: Strategies for performance Power of Problem Solving and Analytical Techniques- Brainstorming - Generating Options - ✓ Critical Path Analysis - Planning and Scheduling Complex Tasks-Decision Trees - Powerful Quantitative Analysis of Decision Impact-Force Field Analysis - Analysis of all Pressures For and Against Change ✓ Consciousness – What is consciousness - Religious perspectives - scientific perspectives - Spiritual perspectives-Vies of philosophers, Self Image & Self Motivation. <p>Motivation Effect on thoughts- External influences on thoughts-Roots of low Self esteem-3 steps to a good self Image-Motivating factors- Criticism for motivation-Signs of De motivators-Laws of motivation-Skills for -Wheel of motivation-Principles of Motivational Leader.</p>	50	✓	✓

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20.

BUSINESS COMMUNICATION

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
BUSINESS COMMUNICATION	COUBTA1	02	02	00	00	Pass in 10+ 2

Objective: The course aims to enhance written and verbal communication/ presentation skills amongst the learners and ability to frame effective documentation both in digital and non-digital environment.

Learning Outcomes: After completion of the course, learners will be able to:

1. Realize the significance of effective communication in business;
2. Learn business vocabulary and understand varied ways/methods to present business plans;
3. Gain knowledge on drafting of official letters and documents;
4. Develop appropriate skills for report writing and different ways of documentation;
5. Explain the role of information technology for enabling business communication and documentation.

COURSE CONTENTS:

Unit	Contents	Weightage of Marks (in %)	C & K	A & A
Unit - 1	Introduction Process and Importance of Communication, Types of Communication (verbal & Non Verbal), Different forms of Communication, Barriers to Communication: Linguistic Barriers, Psychological Barriers, Interpersonal Barriers, Cultural Barriers, Physical Barriers, Organizational Barriers, Role, effects and advantages of technology in Business Communication like text messaging, instant messaging and modern techniques like social networking, Strategic importance of e-communication.	20	✓	✓
Unit - 2	Non-Verbal Aspects of Communicating Body Language, Kinesics, Proxemics, Paralanguage, Effective Listening: Principles of Effective listening, Factors affecting listening exercises, Oral, Written and video sessions, Interviewing skills: Appearing in interviews, Writing resume and letter of application, Modern forms of communicating: E-Mail, Video Conferencing etc.	20	✓	✓
Unit - 3	Business Language and Presentation Importance of Business language, Vocabulary, Words often confused, Words often misspelt, Common errors in English, Oral Presentation: Importance, Characteristics, Presentation Plan, Power point presentation, Visual aids.	25	✓	✓
Unit - 4	Business Correspondence and Technology Letter Writing (Official Letter, Semi Official Letter), Report Writing, Apply Citation Rules (APA style documentation) in reports, Inviting quotations, Sending quotations, Placing orders, Inviting tenders, use of social media tools for advertising, buying and selling, publicizing business ideas through blogs, web-pages etc.	35	✓	✓

Practical Exercises:

The learners are required to:

1. Interview employees of some organisation to find out communication issues and challenges;
2. Make a vocabulary of various terms used in business documentation;
3. Collect some samples of business correspondence and documentations and find out their effectiveness;
4. Visit the social media account of any one reputed well-established organisation and another account of a developing organisation. Compare the difference in communication, persuasion, and advertising methods, highlight the ways in which both the organisation can learn from one another.



21. NEW VENTURE PLANNING AND DEVELOPMENT

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
NEW VENTURE PLANNING AND DEVELOPMENT	COUBTL1	02	02	00	00	Pass in 10+ 2

Objective: The course aims to give exposure to learners regarding different aspects of setting up a new business.

Learning Outcomes: After completion of the course, learners will be able to:

1. Generate a business idea using different techniques and describe sources of innovative ideas;
2. Evaluate advantages of acquiring an ongoing venture with a case study;
3. Present a comparative analysis of various government schemes which are suitable for the business idea;
4. Develop a marketing plan for a business idea;
5. Prepare and present a well-conceived Business Plan.

COURSE CONTENTS:

Unit	Contents	Weightage of Marks (in %)	C & K	A & A
Unit - 1	Starting New Ventures New Venture: Meaning and features. The search for new ideas. Source of innovative ideas. Techniques for generating ideas. Entrepreneurial imagination and creativity: The role of creative thinking. Acquiring an established Venture: Advantages of acquiring an ongoing Venture.	20	✓	
Unit - 2	Legal Challenges in Setting up Business Intellectual Property Protection: Patents, Trademarks, and Copyrights. Requirements and Procedure for filing a Patent, Trademark, and Copyright.	20	✓	✓
Unit - 3	Search for Entrepreneurial Capital The Entrepreneur's Search for Capital. The Venture Capital Market. Criteria for evaluating New-Venture Proposals. Evaluating the Venture Capitalist. Financing stages. Alternate Sources of Financing for Indian Entrepreneurs. Bank Funding. Government Policy Packages. Business Incubators and Facilitators. Informal risk capital: AngelInvestors. Government schemes for new ventures like: Startup India, Stand Up India, Make in India, etc.	20	✓	
Unit - 4	Marketing Aspects of New Ventures Developing a Marketing Plan: Customer Analysis, Geographical Analysis, Economical Analysis.	20	✓	✓
Unit - 5	Business Plan Preparation for New Ventures Business Plan: Concept. Pitfalls to Avoid in Business Plan. Benefits of a Business Plan. Developing a Well- Conceived Business Plan. Elements of a Business Plan: Executive Summary.	20	✓	✓

Practical Exercises:

The learners are required to:

1. Generate a business idea using different techniques and describe sources of innovative ideas.
2. Evaluate advantages of acquiring an ongoing venture with a case study.
3. Present an idea which can have IPR like patents along with comparative analysis of patents already granted in similar field.
4. Present a comparative analysis of various government schemes which are suitable for the business idea (developed in exercise 1).
5. Develop a marketing plan for the business idea (developed in exercise 1).
6. Prepare and present a well-conceived Business Plan.

Suggested Readings:

1. Allen, K. R. (2015). Launching New Ventures: An Entrepreneurial Approach. Boston: Cengage Learning.
2. Barringer, B. R., & Ireland, R. D. (2015). Entrepreneurship: Successfully Launching New Ventures. London: Pearson.
3. Kuratko, D. F., & Rao, T. V. (2012). Entrepreneurship: A South-Asian Perspective. Boston: Cengage Learning.

22.

PERSONAL TAX PLANNING AND TAX MANAGEMENT

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
PERSONAL TAX PLANNING AND TAX MANAGEMENT	COUBTL2	02	02	00	00	Pass in 10+ 2

Objective: The course aims to enable learners to understand the importance of tax planning and use various instruments and measures for tax planning. It also aims to explain how systematic investment and selection of investment avenues can help in tax planning. The course provides an insight into tax management by developing an understanding of the provisions relating to deduction and collection of tax at source, advance tax, refund, assessment procedures and provisions relating to income-tax authorities and appeals and revisions.

Learning Outcomes: After completion of the course, learners will be able to:

1. Examine how tax planning is useful and essential for every tax payer and to understand the concept of tax evasion and tax planning from direct taxes point of view;
2. Determine residential status and its relationship with tax planning. Examine how tax planning is permitted under different provisions of the Income Tax Act;
3. Assess the tax liability of individuals and HUFs having income under different heads, by considering tax planning measures providing for optimal tax relief;
4. Choose the avenues of investment with an intent to reduce tax liabilities and identify merits and limitations of different means of investments and examine various provisions relating to deduction and collection of tax at source and advance tax obligations;
5. Examine the provisions relating to survey, search, and seizure and the related powers of various income-tax authorities;
6. Examine the procedure for assessment and recall the time limits for completion of assessments as well as remedies available by way of appeal and revision.

COURSE CONTENTS:

Unit	Contents	Weightage of Marks (in %)	C & K	A & A
Unit - 1	Basic Concepts Meaning, Need of Tax Planning- Principles and objectives of Tax Planning, Obligations of parties to Tax Planning, Tax Avoidance and Tax Evasion- Legal thinking on Tax Planning, Tax Planning-Scope of Tax Planning.	15	✓	
Unit - 2	Tax Planning with reference to residential status Tax planning through exempted income for residents/ non-residents, Tax planning through permissible deductions for residents/non-residents, Tax planning with reference to clubbing provisions.	15	✓	✓
Unit - 3	Tax Planning under different heads of Income Tax planning measures relating to income from salary, Income from House Property, profits and gains of business or profession, capital gains and income from other sources.	25	✓	✓
Unit - 4	Tax Planning through investments Tax planning through various tax saving investment avenues available for individuals and HUF like Mutual funds unit linked insurance plans, Bonds, Equity linked savings schemes, Post office savings schemes and others. Tax deductions under Income-Tax Act.	25	✓	✓
Unit - 5	TAX MANAGEMENT Deduction, collection and recovery of tax Advance tax, tax deduction at source, tax collection at source, refund.	20	✓	✓

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23. TRIBAL ECONOMICS

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
TRIBAL ECONOMICS	COUBTA2	02	02	00	00	Pass in 10+ 2

Objective: To gain comprehensive understanding of all aspects relating to Tribal Economics.

Learning Outcomes: After completion of the course, learners will be able to:

1. Describe the concept of Tribal Economics;
2. Analyze various skill development and capacity building programmes of Tribal Economics;
3. Evaluate the tribal development programmes and laws in India.
4. Examine how different tribal economic systems function and evaluate implications of various tribal economic decisions.

COURSE CONTENTS:

Unit	Contents	Weightage of Marks (in %)	C & K	A & A
Unit - 1	Introduction: Meaning of Tribe; Classification of Tribal People; Characteristic of Tribal People: Indigenous Attributes, Specialized Living, Hesitation Towards Outside World, Exploration Resistance, Indifferent Attitude Towards Human, Animal and Nature, Affection Towards Jaal-Jungle-Zameen (Water-Forest-Land).	15	✓	
Unit - 2	Dimensions of Tribal Economics: Food Gathering, Hunting, Agriculture, Animal Husbandry, Fisheries, Sculpture Making, Industrial Labour, Recent Trends : Education and Unorganized Business.	15	✓	✓
Unit - 3	Problems of Tribal Life: Extreme Poverty, Severe Unemployment, High Indebtedness, Land Alienation, Poor Health and Sanitation Conditions, Drinking, Housing, Education, Communication, Lack of Infrastructural Facilities; Lack of Professionalism	25	✓	✓
Unit - 4	Tribal Markets: Meaning, Features, Types of Tribal Market: Haats; Weekly Market, Fortnightly Market, Monthly Market, Occasional Markets, Cold Storage, Warehouses, Unorganized Permanent Markets; Organizations Working For Tribal Development: Tribal Cooperative Marketing Development Federation (TRIFED); National Schedule Caste and Schedule Tribe Finance and Development Corporation (NSTFDC).	25	✓	✓
Unit - 5	Forest Right Act (2006) & Economic Activities of Tribes: Forest Right Act and its importance, Minor Forest Produce Based Business : Tendu Leave Collection, Mahua Collection, Honey Selling, Timber Produce, Agricultural Instruments Making, Weaving, Dairy Products, Fishing, Sculpture Selling, Medicinal Plant Produce; Government Policies Towards Tribal Development.	20	✓	

Practical Exercises:

The learners are required to:

1. Prepare a statistical profile of Indian tribal Economy.
2. List out the various NGO which have been undergone practices for tribal welfare.
3. Prepare a chart explaining tribal demographic development.
4. Prepare a comparative statement of urban and rural tribal areas economic activities.
5. Visit any tribal area and prepare a report on how it functions.



24.

INFORMATION COMMUNICATION TECHNOLOGY

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
INFORMATION COMMUNICATION TECHNOLOGY	CIUATA1	02	02	00	00	Pass in 10+ 2

COURSE

OBJECTIVES:

This course aims at acquainting the students with basic ICT tools which help them in their day-to-day life as well as in office and research.

UNIT-I: Fundamentals of Internet: Internet applications & threats, Internet addressing, URL and its parts, Browsers and utility of Browsers, Search Engines, Introduction to Social Networking apps: Twitter, Tumblr, LinkedIn, Facebook, flickr, Skype, yahoo, YouTube, WhatsApp

UNIT-II: Introduction to Electronic mail: Email Addresses, Domain Names, Mailers, parts of an E-mail Message, Composing E-mail Message, Mail Management through pop client apps online/offline.

UNIT-III: Overview of Internet security: E-mail threats and secure E-mail, Viruses and antivirus software, Firewalls, Cryptography, Digital signatures, Copyright issues.

UNIT-IV: Google Apps: Google drive, Google documents, Google spread sheets, Google Slides and Google forms, Google Meet, Google Classroom

UNIT-V: GOI digital initiatives in higher education: SWAYAM, SwayamPrabha, National Academic Depository, National Digital Library of India, E-Sodh-Sindhu, Virtual labs, e-acharya, e-Yantra and NPTEL

REFERENCE BOOKS:

1. In-line/On-line: Fundamentals of the Internet and the World Wide Web – by Raymond Greenlaw Publishers: McGraw Hill Education
2. Internet Technology and Web Design, McGraw Hill Education India.
3. Information Technology – The Breaking Wave, Dennis Curtin, Kunal Sen, Kim Foley and Cathy Morin, TMH.

COURSE OUTCOMES:

Students would

- Understand the literature of social networks and their properties.
- Explain which network is suitable for whom.
- Develop skills to use various social networking sites like twitter, flickr etc.
- Learn few GOI digital initiatives in higher education.
- Apply skills to use online forums, docs, spreadsheets, etc. for communication, collaboration and research.
- Get acquainted with internet threats and security mechanisms.



25.

HTML AND INTRODUCTION TO JAVA SCRIPT

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
HTML AND INTRODUCTION TO JAVA SCRIPT	CIUATL1	02	02	00	00	Pass in 10+ 2

COURSE OBJECTIVES:

- To impart the basic concepts of HTML
- To understand concepts about web Pages and CSS
- To Understand basic concepts about Java Script.
- To understanding about creating web pages and step by step approach in making the web pages attractive and interactive with the help of HTML Tags, CSS and embedding JavaScript in HTML.

SYLLABUS:

UNIT I: INTRODUCTION TO HTML

Introduction: Overview of HTML, need of HTML, Use of it, HTML Tags: concept of Tag, types of HTML tags, structure of HTML program **Text formatting through HTML:** Paragraph attributes, line breaks, background formatting **Emphasizing material in a web page:** Heading styles, drawing lines, text styles. Text styles and other text effects-centering, spacing, controlling font size & color Lists: Using unordered and ordered lists.

UNIT II: TABLES, LINKS and FRAMES

Handling Tables: Use of table tag and its attributes. **Linking Documents:** Concept of hyperlink, types of hyperlinks **Frames:** Introduction To frames, using frames & frameset tags, targeting named frames.

UNIT III: INTRODUCTION TO CSS

Introducing CSS, Types of CSS, Use of color attributes, Use of background and Text attributes in CSS, External Style Sheets.

UNIT IV: INTRODUCTION TO JAVA SCRIPT

Overview of Java Script: advantages, client side java Script, capturing user input, writing JavaScript into HTML **Basic JavaScript Techniques:** Data types, literals, variables, operators and expressions Java Script Programming .

UNIT V: JAVA SCRIPT CONSTRUCTION

JavaScript Decision Making and Branching Statements: If and else if, while and do while loop. **JavaScript Functions:** Function declaration, Types of functions in Java Script- Built in functions, User defined functions, **Dialog boxes:** Alert dialog box, prompt dialog box, confirm dialog box.

REFERENCE BOOKS:

- Web Enabled Commercial Application Development Using HTML, DHTML, JavaScript, Perl CGI by Ivan Bayross
- HTML5 by Mark Pilgrim O'Reilly publication
- D.R. Brooks, An Introduction to HTML and JavaScript for Scientists and Engineers, Springer W. Willard, 2009
- HTML A Beginner's Guide, Tata McGraw-Hill Education, 2009.
- J. A. Ramalho, Learn Advanced HTML 4.0 with DHTML, BPB Publications, 2007

COURSE OUTCOMES:

After completion of this course students should have-

- Ability to analyze the usability of a web site.
- Ability to Implement basic JavaScript.
- Ability to Create attractive web Pages using CSS.
- Ability to have knowledge of client side scripting language concepts



26.

INTRODUCTION TO INTERNET OF THINGS

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
INTRODUCTION TO INTERNET OF THINGS	CIUBTL3	02	02	00	00	Pass in 10+ 2

COURSE OBJECTIVES:

1. To learn the concepts of Sensors, Wireless Network and Internet
2. To learn and implement use of Devices in IoT technology.
3. To understand how to program on embedded and mobile platforms including different Microcontrollers like Raspberry Pi,

4. Learn basic python programming for IoT applications
5. To learn and design different applications in IoT.

SYLLABUS

1. Introduction to IoT: Definition, Characteristics, Applications, Evolution, Enablers, Connectivity
Layers, Addressing, Networking and Connectivity Issues. Relevant Protocols About IOT.
2. Basics of Networking Communication Protocols, Sensor Network, Machine to Machine Communication.
3. Introduction to Python Programming, Introduction to Raspberry Pi, Implementation of IoT with Relevant Software Language.
4. Industrial IoT, Case Studies: Agriculture, Healthcare, Activity Monitoring etc.

REFERENCE BOOKS

1. "The Internet of Things: Enabling Technologies, Platforms, and Use Cases", by Pethuru Raj and Anupama C. Raman (CRC Press).
2. "Internet of Things: A Hands-on Approach", by A Bahga and Vijay Madisetti (Universities Press)

COURSE OUTCOME

1. After the completion of the course, the students will be able to design some IOT based prototypes
2. Describe what IoT is and how it works today
3. Recognize the factors that contributed to the emergence of IoT
4. Design and program IoT devices.



27.

INTRODUCTION TO JAVA

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
INTRODUCTION TO JAVA	CIUBTA1	02	02	00	00	Pass in 10+ 2

COURSES OBJECTIVES:

The course aims to provide exposure

- Programming in the Java programming language,
- Knowledge of object-oriented paradigm in the Java programming language,
- The use of Java in a variety of technologies and on different platforms.

Syllabus:-

Unit -I. Introduction to Java Understanding the semantic and syntax differences between C++ and Java,

Compiling and Executing a Java Program, Variables, Constants, Keywords Data Types, Operators Doing Basic Program Output, Decision Making Constructs (conditional statements and loops)

Unit-II Arrays, Strings and I/O Creating & Using Arrays (One Dimension and Multi-dimensional), Java Strings: The Java String class, Collection in Java.

Unit-III Object-Oriented Programming Overview Principles of Object-Oriented Programming, Class Constructors, Method Overloading, Class Variables & Methods, Objects as parameters, final classes. Inheritance: Single Level and Multilevel, Method Overriding,

Unit-IV Abstract Classes Interfaces and Packages Using Standard Java Packages (util, lang, io, net), Exception Handling Exception types, uncaught exceptions, throw, built-in exceptions .

Unit-V Thread creating single and multiple threads, using in File handling

Reference Books:

1. Y. Kanetkar, Let Us C, BPB Publication.
2. B.S. Gottfried, Schaum's outline of Theory and Problems of Programming with C, McGrawHill.
3. Programming in ANSI C - Balaguruswami, TMH 2.
4. The 'C' programming language - B.W.Kernighan, D.M.Ritchie, PHI
5. A.K. Saxena, Programming Language C : Anamaya Publishers, New Delhi.
6. C The Complete Reference - H.Sohildt, TMH 3.
7. Computer fundamentals and programming in C – Pradip Dey & Manas Ghosh, OXFORD

Course outcome:-

On successful completion of this course, student should be able to:

- Knowledge of the structure and model of the Java programming language, (knowledge)
- Use the Java programming language for various programming technologies (understanding) • Develop software in the Java programming language, (application)
- Evaluate user requirements for software functionality required to decide whether the Java programming language can meet user requirements (analysis)

28.

NSS AND SOCIAL ECONOMIC DEVELOPMENT

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
NSS AND SOCIAL ECONOMIC DEVELOPMENT	ENUATA1	02	02	00	00	Pass in 10+ 2

Objectives : The main objectives of this course are:

1. To help learners know about environmental issues and disaster management.
2. To understand the role of entrepreneurship in social development.
3. To learn documentation and reporting.

Outcome : Learners will learn to appreciate the concerns regarding the environment. They will have the background information to start a venture. They will also be able to prepare a socio-economic development plan.

UNIT 1: Environmental Issues

Natural Resource Management, Sustainable Development, Renewable & Non Renewable Resources, Environment & Development Trade-off;

UNIT 2: Disaster Management

Introduction; Definitions and types of disasters; Disaster Management, Role of NSS in disaster management; Civil defence & Disaster Management.

UNIT 3: Entrepreneurship

Definition and meaning; Characteristics of Entrepreneurs; Types of Entrepreneurs
Types of Entrepreneurship; Entrepreneurs and the Economy;

UNIT 4: Funding a Venture

Sources of funding and formalities

Suggested Readings:

1. Biodiversity, Environment and Disaster Management by Shamna Hussain (Unique Publishers)
2. Environmental Studies by P K Pandey (Mahaveer Publications)
3. Fundamentals of Entrepreneurship by H Nandan (PHI)





29.

MONEY AND FINANCIAL MARKET

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
MONEY AND FINANCIAL MARKETS	ENUATL1	02	02	00	00	Pass in 10+ 2

Money and Financial Market

Course Outcomes

This course exposes students to the theory and functioning of the monetary and financial sectors of the economy. It highlights the organization, structure and role of financial markets and institutions. It also discusses interest rates, monetary management and instruments of monetary control. Financial and banking sector reforms and monetary policy with special reference to India are also covered.

Course Outline

1. Money

Concepts, functions, measurement; theories of money supply.

2. Financial Institutions, Markets, Instruments and Financial Innovations

Money and capital markets: organization, structure and reforms in India, role of financial Institutions

3. Banking System

Indian banking system: Changing role and structure, banking sector reforms.

4. Central Banking and Monetary Policy

Central Bank: Functions, goals, targets, instruments of monetary control, current monetary policy of India.

Readings:

1. F. S. Mishkin and S. G. Eakins, Financial Markets and Institutions, Pearson Education, 6th edition, 2009.
2. F. J. Fabozzi, F. Modigliani, F. J. Jones, M. G. Ferri, Foundations of Financial Markets and Institutions, Pearson Education, 3rd edition, 2009.
3. L. M. Bhole and I. Malhotra, Financial Institutions and Markets, Tata McGraw Hill, 5th edition, 2011.
4. M. Y. Khan, Indian Financial System, Tata McGraw Hill, 7th edition, 2011.
5. Various latest issues of R.B.I. Bulletins, Annual Reports, Reports on Currency and Finance and Reports of the Working Group, IMF Staff Papers.



30.

ENVIRONMENTAL ECONOMICS

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
ENVIRONMENTAL ECONOMICS	ENUBTL2	02	02	00	00	Pass in 10+ 2

ENVIRONMENTAL ECONOMICS

Course Outcomes

This course focuses on economic causes of environmental problems. In particular, economic principles are applied to environmental questions and their management through various economic institutions, economic incentives and other instruments and policies. Economic implications of environmental policy are also addressed as well as valuation of environmental quality, quantification of environmental damages, tools for evaluation of environmental projects such as cost-benefit analysis and environmental impact assessments. Selected topics on international environmental problems are also discussed.

Course Outline

1. Introduction

What are environmental economics; Importance and Scope of Environmental Economics.

2. Pollution

Types of Pollution - Soil, Air, and Water. Problems and Prospects of different pollution.

3. The Design and Implementation of Environmental Policy

Overview: Implementation of environmental policy.

4. International Environmental Problems

Environmental problems; economics of climate change;

5. Disaster Management and Sustainable Development

Meaning and Importance of Disaster Management, Process and effects on environment.

Readings:

1. Charles Kolstad, *Intermediate Environmental Economics*, Oxford University Press, 2nd edition, 2010.
2. Robert N. Stavins (ed.), *Economics of the Environment: Selected Readings*, W.W. Norton, 5th edition, 2005.
3. Roger Perman, Yue Ma, James McGilvray and Michael Common, *Natural Resource and Environmental Economics*, Pearson Education/Addison Wesley, 3rd edition, 2003.
4. Maureen L. Cropper and Wallace E. Oates, 1992, -Environmental Economics: A Survey, *Journal of Economic Literature*, Volume 30:675-740.



31. ENGLISH COMMUNICATION

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
ENGLISH COMMUNICATION	ESUATA4	02	02	00	00	Pass in 10+ 2

Learning outcomes-

- To develop a deep understanding of the fundamentals of communication in business world.
- To understand basic rules of business etiquette and how to follow them, both in person and online.
- To improve communication skills by appreciating the importance of speaking, and learning essential techniques to improve the same.
- To develop good presentation and interview skills by learning the essential steps for its planning and preparation.
- To enhance writing skills of the learners by enabling them to write effective resume and other forms of business correspondence.

Unit-I Communication in Business

- i. Role of communication in the business world
- ii. Patterns of business communication

UNIT- II Business Correspondence-

- i. Business letters
- ii. Writing memos
- iii. Writing minutes
- iv. Writing agenda
- v. Writing circulars
- vi. Writing notices
- vii. Writing CV
- viii. E-communication

UNIT-3 Etiquettes of Communication

- i. Etiquettes of Telephonic Communication.
- ii. Office Etiquettes
- iii. E-mail Etiquettes
- iv. Meeting and Social Etiquettes

UNIT-4 Oral Communication

- i. Placement interview
- ii. Presentation skills

Suggested Readings:

1. Bhatia, R.C., Business Communication, New Delhi: Ane Books Pvt Ltd
2. Scot, Q. Contemporary Business Communication, New Delhi: Biztnatra
3. Parikh, JP et al, Business Communication: Basic Concepts and Skills Hyderabad: Orient Blackswan
4. Ramon & Prakash, Business Communication, Oxford.
5. Sydney Greenbaum Oxford English Grammar, Oxford
6. Successful Communications, MalraTreece (Allyn and Bacon)
7. Effective Technical Communication, M. Ashraf Rizvi.
8. Anjaneet Sethi & Bhavana Adhikari, Business Communication, Tata McGraw Hill
9. Creative English for Communication, Krishnaswamy N, Macmillan
10. Communication skills, Sanjay Kumar, Pushpalata, 1stEdition, Oxford Press, 2011
11. Organizational Behaviour, Stephen .P. Robbins, 1stEdition, Pearson, 2013
12. The Ace of Soft Skills: Attitude, Communication and Etiquette for success, Gopala Swamy Ramesh, 5thEdition, Pearson, 2013

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32.
ENGLISH LANGUAGE

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
ENGLISH LANGUAGE	ESUATA5	02	02	00	00	Pass in 10+ 2

Course Level Learning Outcomes

The purpose of this course is to introduce students to the theory, fundamentals and tools of communication and to develop in them vital communication skills which should be integral to personal, social and professional interactions. One of the critical links among human beings and an important thread that binds society together is the ability to share thoughts, emotions and ideas through various means of communication: both verbal and non-verbal. In the context of rapid globalization and increasing recognition of social and cultural pluralities, the significance of clear and effective communication has substantially enhanced.

The present course hopes to address some of these aspects through an interactive mode of teaching-learning process and by focusing on various dimensions of communication skills. Some of these are:

Language of communication, various speaking skills such as personal communication, social interactions and communication in professional situations such as interviews, group discussions and office environments, important reading skills as well as writing skills such as report writing, note-taking etc.

Continued.....



While, to an extent, the art of communication is natural to all living beings, in today's world of complexities, it has also acquired some elements of science. It is hoped that after studying this course, students will find a difference in their personal and professional interactions.

The recommended readings given at the end are only suggestive; the students and teachers have the freedom to consult other materials on various units/topics given below. Similarly, the questions in the examination will be aimed towards assessing the skills learnt by the students rather than the textual content of the recommended books.

COURSE CONTENT

- 1. Introduction:** Theory of Communication, Types and modes of Communication
- 2. Language of Communication:**
Verbal and Non-verbal
(Spoken and Written)
Personal, Social and Business
Barriers and Strategies
Intra-personal, Inter-personal and Group communication
- 3. Speaking Skills:**
Monologue
Dialogue
Group Discussion
Effective Communication/ Mis- Communication
Interview
Public Speech
- 4. Reading and Understanding**
Close Reading Comprehension
Summary Paraphrasing
Analysis and Interpretation
Translation (from Indian language to English and vice-versa) Literary/Knowledge Texts
- 5. Writing Skills**
Documenting
Report Writing
Making Notes
Letter writing

Recommended Readings:

1. *Fluency in English - Part II*, Oxford University Press, 2006.
2. *Business English*, Pearson, 2008.
3. *Language, Literature and Creativity*, Orient Blackswan, 2013.
4. *Language through Literature* (forthcoming) ed. Dr. Gauri Mishra, Dr Ranjana Kaul, Dr Brati Biswas



33.

SOFT SKILL DEVELOPMENT AND POWER POINT PRESENTATION

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
SOFT SKILL DEVELOPMENT AND POWERPOINT PRESENTATION	ESUATL6	02	02	00	00	Pass in 10+ 2

Course Outcome

CO 1: to communicate with others effectively

CO 2: to take responsibility to undertake a work and complete it.

CO 3: to think critically or laterally and solve problems

CO 4: to negotiate with others to solve problems (conflict resolution)

Paper 1: Soft Skill Development and Power Point Presentation

- Soft Skills: Communication: Verbal and Non-Verbal, Teamwork, Problem Solving, Decision-Making, Ability, Time Management, Negotiation and Conflict Resolution, Persuasion
- Mock interview
- Emotional Intelligence
- Group discussion
- PowerPoint Presentation: techniques and application
- Digital Literacy: Using web for development of individuals.

RECOMMENDED READINGS

- Keep Talking: Friederike Klippel, CUP
- Speaking power point. The new language of business by Bruce k Gabriella.
- Presentation Zen by Garr Reynolds.
- Slide:ology: The Art and Science of Creating Great Presentations. Nancy Duarte
- Bridging the Soft Skills Gap by Bruce Tuglan.
- Personality Development and Soft Skills. BY Braun Mitra
- Communication skills by Sanjay kumar
- Professional speaking Skills: Aruna Koneru, OUP



34. SOFT SKILLS

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
SOFT SKILLS	ESUATA1	02	02	00	00	Pass in 10+ 2

Course Outcomes

Some of the course learning outcomes that students of this course are required to demonstrate runs thus:

CO 1: to communicate with others effectively

CO 2: to develop qualities of leadership..

CO 3: to take responsibility to undertake a work and complete it.

CO 4: to work in groups either as members or leaders

CO 5: to think critically or laterally and solve problems

CO 6: to negotiate with others to solve problems (conflict resolution)

CO 7: to cope with pressure and problems

COURSE CONTENT

Teamwork

Emotional Intelligence Adaptability, Leadership Problem solving

Suggested

Readings

English and Soft Skills. S.P. Dhanavel. Orient BlackSwan 2013

English for Students of Commerce: Precise, Composition, Essays, Poems eds. Kaushik, et al.

35.

LANGUAGE LEARNING THROUGH LITERATURE

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
LANGUAGE LEARNING THROUGH LITERATURE	ESUBA2	02	02	00	00	Pass in 10+ 2

Learning Objectives

- ❖ Develop an understanding of the relationships between studies in language and literature.
- ❖ Foster a lifelong interest in and enjoyment of language and literature.
- ❖ To enhance students basic knowledge of various figure of speeches
- ❖ Develop skills in interpretation, analysis and evaluation.
- ❖ To make students how to use literature in English communication skills

Unit 1: Understanding the Relationship between Language and Literature through Vocabulary, Literal versus Metaphorical Meaning etc.

Unit 2: Literary Devices

Figures of Speeches: Metaphor, Simile, Alliteration, Metonymy etc.

Unit 3: Rhetorical Devices

Introduction to Rhetoric, Structure and Style etc.

Unit 4: Study of Literary Texts: Dramas, Poetry, Fictions, Short Stories etc.

Suggested Readings


Hill, McGraw. *Language Through Literature*. McGraw, 2001.

Simpson, Paul. *Language Through Literature: An Introduction*. Routledge, 1996.

Martino, Emilia Di. *Studying Language Through Literature*. Cambridge, 2014.

Kaul, Ranjana. *Language Through Literature*. Delhi Publication House, 2019.

Howie, H. S. (1993). Critical thinking: A critical skill for students. Reading TODAY, 24.



36.

HANDWRITING IDENTIFICATION AND RECOGNITION

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
HANDWRITING IDENTIFICATION AND RECOGNITION	FSUATL1	02	02	00	00	Pass in 10+ 2

Handwriting Identification and Recognition

Credits: 2

Learning Objectives: After studying this paper the students will know

- The importance of examining questioned documents in criminal cases.*
- The tools required for examination of questioned documents.*
- The significance of comparing handwriting samples.*
- The importance of detecting frauds and forgeries by analyzing questioned documents.*

Unit 1: Handwriting Identification

Basis of handwriting identification, Characteristics of handwriting – scope and application, class and individual characteristics. Arrangement, alignment, margin, slant, speed, pressure, spacing, line quality, embellishments, movement and pen lifts. Factors influencing handwriting – physical, mechanical, genetic and physiological.

Unit 2: Handwriting Examination

Basis of handwriting comparison, Collection of handwriting samples, Forgery detection, Counterfeiting, Examination of altered and erased documents. Tools used in handwriting examination.

Unit 3: Handwriting Recognition

Basis of handwriting recognition, off-line and on-line handwriting recognition. Steps involved in handwriting recognition – pre-processing, feature extraction and classification. Application of handwriting recognition.

Unit 4: Basic tools for examination of Documents

Application of basic tools for the examination of Questioned Document, Ultraviolet, Visible and Fluorescence Spectroscopy. Photomicrography, Video Spectral Comparator, Electrostatic Detection Apparatus.



37.

INTRODUCTION TO CRIMINALISTICS

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
INTRODUCTION TO CRIMINALISTICS	FSUATA1	02	02	00	00	Pass in 10+ 2

Introduction to Criminalistics

Credits: 2

Learning Objectives: After studying this paper the students will know

- The importance of criminology.*
- The causes of criminal behavior.*
- The significance of criminal profiling to mitigate crime.*
- The consequences of crime in society.*
- The elements of criminal justice system.*

Unit 1: Introduction to Crime and Criminology

Nature and Scope, Concept of Crime, Criminals and Criminology, Classification of Crime and Criminals, Methods and Techniques in Criminology, Introduction to IPC, CrPC, IEA and their relevant sections.

Unit 2: Organised Crime and Police Administration

Crime Against Women and Children, Crime Against Property, Juvenile Delinquency, Cyber Crimes, Economic Crimes, Inquest, INTERPOL

Unit 3: White Collar Crime

History and Definition, Elements of White-Collar Crime, Types of White-Collar Crime, White Collar Crime in India.

Unit 4: Punishment and Prison System

Concept and Types of Punishment, Theories of Punishment, Probation and Parole, Criminal Behavior, Recidivism.

38.

FORENSIC RADIOLOGY

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
FORENSIC RADIOLOGY	FSUBTA2	02	02	00	00	Pass in 10+ 2

Learning Objectives: After studying this paper the students will know-

- Basic principles of radiology
- Forensic significance of radiology
- Importance of radiological examination in species, age estimation and sex identification

Unit I: Introduction to Forensic Radiology

Definition, Historical aspects, Scope of forensic radiology.

Unit II: Techniques applied in Forensic Radiology

X-Ray, Ultrasound, CT and MRI scan, Nuclear medicine scan etc.

Unit III: Identification


Identification of dead- need, methods. Identification of living- animal or human, age, and sex determination.

Unit IV: Applications of Forensic Radiology

Smuggling/ border control, dental identification, gun-shot wounds.

SUGGESTIVE READINGS:

- 1) Petrovečki, Vedrana. "Lo Re G, Argo A, Midiri M, Cattaneo C, eds. Radiology in Forensic Medicine: from Identification to Post-mortem Imaging
- 2) Thali, M.J., Viner, M.D., & Brogdon, B.G. (Eds.). (2010). Brogdon's Forensic Radiology (2nd ed.).
- 3) Vidua, Raghendra Kumar. "Application of Radiology Techniques and Technologies in Forensic Investigations."
- 4) Govindiah D. "Forensic Radiology made easy".
- 5) Richard W, Brant W. "Fundamentals of body CT".





39.

INTRODUCTION TO BIOMETRY

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
INTRODUCTION TO BIOMETRY	FSUBTL1	02	02	00	00	Pass in 10+ 2

Introduction to Biometry

Credit: 2

Learning Objectives: After studying this paper the students will know

- The importance of biometrics systems in criminal cases.*
- Knowledge and awareness regarding current and advanced biometric identification systems.*
- Use of biometrics in personal identification.*
- To provide information regarding the applications of biometric parameters and technologies.*

Unit 1: Introduction to Biometrics

Definition of Biometrics, Features and function of biometric system, working of biometrics, Classification of biometric systems – physical and behavioral, Strength and weakness of physical and behavioral biometrics.

Unit 2: Physical Biometrics

Physical biometrics: Fingerprints, Iris, Retina, Facial recognition, Hand geometry, DNA.

Unit 3: Behavioral Biometrics

Behavioral Biometrics: Speaker recognition, Signature, Gait biometrics

Unit 4: Biometric Parameters

Biometric parameters: FM, FNM, FTC, FTE, FAR, FRR, EER, ROC, DET; Emerging Biometric Technologies.



40.

ENVIRONMENTAL STUDIES AND DISASTER MANAGEMENT

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
ENVIRONMENTAL STUDIES AND DISASTER MANAGEMENT	FOUATA1	02	01	00	01	Pass in 10+ 2

Course Outcomes:

- CO1:** Course will sensitize students on environmental activities and related to natural resource conservation.
- CO2:** The course makes students to maintain the earth and natural resources on sustainable basis.
- CO3:** Students will be aware about climate change and disaster management.
- CO4:** Student will able to learn environmental legislations, policies and international conventional.

Introduction to environmental studies, Scope and importance, Ecosystems: Structure and function
Natural Resources management, biodiversity and tribal populations. Biodiversity and its Conservation. Environmental Pollution: types, causes, effects and controls of air, water, soil and noise pollution. Solid waste management, Environmental legislation and Practices. Human and the Environment, Sustainable development, Environmental movements. Public awareness, natural disasters, climate change, man- made disaster, Disaster Management.

PRACTICAL

Field work: Visit a local area to document environmental assets river/ forest/ grassland/hill. Visit to a local polluted sites- urban/ rural/ industrial/ agricultural. Study and documentation of common herbs, shrubs and trees, insects, birds. Study of simple ecosystem- pond, river, hill slopes etc. Nature trail, Soil waste analysis.

Suggested Readings:

- P.H.Gleickm (1993). Waterin Crisis. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Environmental Institute, Oxford Univ. Press.
- R. Grumbine, Edward, and M.K. Pandit (2013). Threats from India's Himalaya dams. Science Journal.
- R. Sengupta (2003). Ecology and economics: An approach to sustainable development. OUP.
- N.S. Sodhi, L. Gibson and P.H. Raven (2013). Conservation Biology: Voices from the Tropics. John Wiley & Sons.

41.

NURSERY TECHNOLOGY

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
NURSERY TECHNOLOGY	FOUATL1	02	01	00	01	Pass in 10+ 2

Course Outcomes:

- CO1:** Course will enrich the knowledge of students related to establishment of forest nursery and plant production.
- CO2:** The course makes students to identify forest seeds, seed sowing and requirement for germination.
- CO3:** Students will be able to conduct practical's experience on media preparation, and procedures of seedling production and plant care techniques.
- CO4:** Student will able to maintain different types of documents of commercial forest nursery and running forest nursery.


Nursery, introduction, objectives and scope, types of nursery, choosing nursery site, design and layout of the nursery, preparation of nursery beds, producing plant from seed, seed handling, dormancy and treatments, methods of sowing, time and season, potting mixtures, transplanting of young seedlings, plant containers, compost and mulches, nutrient and soil management, disease and pest control, sale and marketing.

PRACTICAL

Site selection and its assessment, preparation of different types of nursery bed, study of plant containers, seed treatment, seed sowing, preparation of potting mixtures, application of mulches, application of weedicides, Compost preparation, Tools and instruments, nursery record. Assessment of plantation site, visit of nursery and plantations, pruning methods in newly and old plantations, fertilizer and weed management practices. Marketing management of nursery grown seedlings.

Suggested Readings:

- Keats C Hall. 2003 Manual on nursery practice. Forest Department, Jamaica. E book
- Kumar, Vinod, (2016), Nursery and Plantation Practices in Forestry, Scientific publishers India.
- Luna RK. (2006). Plantation forestry in India. International book distributor, Dehradun India.
- PawarPankaj (2007). Practical Manual of plantation forestry. Scientific publisher, Jodhpur
- Sharma and Singh NP. (2011). Soil and orchard management. Daya Publishing House, Delhi



42.

MEDICINAL PLANT & AROMATIC PLANT

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
MEDICINAL PLANT & AROMATIC PLANT	FOUATA2	02	01	00	01	Pass in 10+ 2

Course Outcomes:

- CO1:** Course will aware students on potential of medicinal and aromatic plants of India.
- CO2:** The course makes students to propagate important medicinal valued species and their plant care activities.
- CO3:** Students will be able to maintain sustainable harvesting commercially important species from natural forest.
- CO4:** Student will able to learn the procedures of value addition of medicinal and aromatic plants for higher income and livelihood.

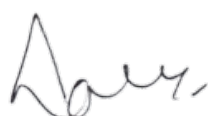
Medicinal diversity in India, Indian Traditional knowledge on Medicinal plants: history, scopes, opportunities. Merits and demerits of using herbal products. Important medicinal plants viz. *Paper cardimum*, *Roulfiasarpentina*, *Withaniasomnifera*, *DioscoreaBaladona*, *CinconaCitronellgrass*, khus grass, Mentha, Sweat flag (butch), *Ocimum*, Safedmusli, Giloe. Soil and climate requirements, Export and import potential of medicinal plants. Cultivation techniques. Utilization of medicinal and aromatic plants. Value addition and processing techniques. Medicinal/herbal garden, National Medicinal Plant Development Board, Medicinal plant conservation area (MPCA).

PRACTICAL

Identification of different medicinal and aromatic plants. Collection and processing of medicinal and aromatic plants, processing techniques, storage, packaging. Visit of MPCA, forest area. Application of locally available medicinal plants, interaction with Vaidya and local healers.

Suggested readings:

- Amritpal Singh Saroya (2018). Textbook of Medicinal and Aromatic Plants. Indian Council of Agriculture Research, New Delhi.
- Anand Singh Bisht (2019). Hand Book of Medicinal and Aromatic Crops, Brillion Publishing House, New Delhi.
- N Deepa Devi (2017). A Text Book of Medicinal and Aromatic Crops. Aavishkar Publishers, Distributors, Jaipur



43.

रचनात्मक लेखन

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
रचनात्मक लेखन	HIUATL1	02	02	00	00	Pass in 10+ 2

Course Objective :

- रेडियो, दूरदर्शन और व्यावसायिक संगमंच के दृष्टिगत रचनात्मक लेखन की संभावना लगातार बढ़ती जा रही है।
- जनरुचियों के परिष्करण और उसके अनुसार हिंदी साहित्य की विभिन्न विधाओं में रचनात्मकता की आवश्यकता।

Syllabus Content :

- ❖ रचनात्मक लेखन : स्वरूप एवं सिद्धांत
क. जनभाषा और लोकप्रिय संस्कृति
ख. लेखन के विविध रूप : मौखिक-लिखित, गद्य-पद्य, कथात्मक-कथेतर, नाट्य-पाठ्य
- ❖ विविध विधाओं की आधारभूत संरचनाओं का व्यावहारिक अध्ययन
क. कविता : चम्पा काले-काले अचछर नहीं चीन्हती – त्रिलोचन
समय की शिला पर – शम्भुनाथ सिंह
ख. कहानी : नपनी – दूधनाथ सिंह
अनुपस्थित – देवेन्द्र
ग. व्यंग्य : सदाचार का ताबीज – हरिशंकर परसाई
घ. निबंध : युद्ध और नारी – महादेवी वर्मा

सहायक ग्रंथ :

1. आस्था और सौन्दर्य – डॉ. रामविलास शर्मा, राजकमल प्रकाशन, नई दिल्ली
2. भवन्ती – अज्ञेय, राजपाल एंड संस, दिल्ली
3. एक साहित्यिक की डायरी- गजानन माधव मुक्तिबोध, भारतीय ज्ञानपीठ, नई दिल्ली
4. हिन्दी स्वरूप और संवेदना का विकास- रामस्वरूप चतुर्वेदी, लोकभारती प्रकाशन, इलाहाबाद
5. एक कवि की नोटबुक – राजेश जोशी, राजकमल प्रकाशन, नई दिल्ली
6. कविता का जनपद – अशोक वाजपेयी, राधाकृष्ण प्रकाशन, नई दिल्ली
7. मंडी में मीडिया – विनीत कुमार, वाणी प्रकाशन, नई दिल्ली
8. हिन्दी पत्रकारिता- कृष्ण बिहारी मिश्रा, प्रभात प्रकाशन, दिल्ली



44.

हिंदी व्याकरण और सम्प्रेषण

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
हिंदी व्याकरण और सम्प्रेषण	HIUATA1	02	02	00	00	Pass in 10+ 2

Course Objective :

- भाषा की प्रभावशाली अभिव्यक्ति तथा सम्प्रेषण के लिए व्याकरण का ज्ञान अनिवार्य है।
- व्यावसायिक क्षेत्रों में बहुपयोगी।

Syllabus Content :


- ❖ हिंदी व्याकरण एवं रचना - संज्ञा, सर्वनाम और विशेषण। उपसर्ग, प्रत्यय तथा समास। पर्यायवाची शब्द, विलोम शब्द, अनेक शब्दों के लिए एक शब्द, शब्द शुद्धि, वाक्य शुद्धि, मुहावरे और लोकोक्तियां।
- ❖ सम्प्रेषण की अवधारणा और महत्व
- ❖ सम्प्रेषण के प्रकार एवं माध्यम
- ❖ सम्प्रेषण की तकनीक
- ❖ सम्प्रेषण के चरण : श्रवण एवं अभिव्यक्ति

सहायक ग्रंथ :

1. हिन्दी व्याकरण- कामताप्रसाद गुरु, नयी किताब प्रकाशन, दिल्ली
2. हिन्दी शब्दानुशासन- किशोरीदास वाजपेयी, नागरी प्रचारिणी सभा, काशी
3. अच्छी हिन्दी - रामचन्द्र वर्मा, साहित्य रत्नमाला, बनारस
4. आधुनिक हिन्दी व्याकरण और रचना - वासुदेवनन्दन प्रसाद, भारती भवन प्रकाशन, पटना
5. देवनागरी लिपि तथा हिंदी वर्तनी का मानकीकरण - केन्द्रीय हिंदी निदेशालय, भारत सरकार

Course Learning Outcomes :

प्रभावशाली सम्प्रेषण के लिए भाषा के व्याकरण का विशेष महत्व है। भाषा के बनने में व्याकरण के उपसर्ग, प्रत्यय एवं अन्य अवयवों का ज्ञान, नवीन परिवर्तनों के शब्दों को गढ़ने और भाषा को प्रभावशाली रूप में ढालने में महत्वपूर्ण भूमिका है।



45.

हिंदी भाषा

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
हिंदी भाषा	HIUATA2	02	02	00	00	Pass in 10+2

Course Code	Course Name	Periods			Duration	Scheme			Credits
		L	T	P		IA	ESE	Sub Total	
HIUATA2	हिंदी भाषा	2	-	-	2 Hours	30	70	100	2

Course Objective :

- हिंदी साहित्य के विद्यार्थियों के अलावा अन्य अनुशासनों से जुड़े छात्रों के लिए अपनी मातृभाषा, संपर्क भाषा और उसके साहित्य की आधारभूत जानकारी हमेशा अपेक्षित है।
- सामाजिक यथार्थ साहित्यिक लेखन का मुख्य स्रोत है।

Syllabus Content :

भाषा एवं रचना :

हिंदी ध्वनियों का सामान्य परिचय, ध्वनि-परिवर्तन, ध्वनि परिवर्तन के कारण, हिंदी में आगत विदेशी ध्वनियाँ।

साहित्य-खंड (गद्य) :

पंच परमेश्वर	:	प्रेमचंद
फूलों का कुर्ता	:	यशपाल
इंस्पेक्टर मातादीन चाँद पर	:	हरिशंकर परसाई

साहित्य-खंड (काव्य) :

हिमाद्रि तुंग शृंग से...	:	जयशंकर प्रसाद
आओ-आओ जल्द-जल्द पैर बढ़ाओ	:	सूर्यकांत त्रिपाठी निराला
पढ़िए गीता	:	रघुवीर सहाय

सहायक ग्रंथ :

1. भाषा और समाज – डॉ. रामविलास शर्मा, राजकमल प्रकाशन, नई दिल्ली
2. भाषा विज्ञान- भोलानाथ तिवारी, किताब महल, दिल्ली
3. कहानी : स्वरूप और संवेदना – राजेंद्र यादव, वाणी प्रकाशन, नई दिल्ली
4. विवेक के रंग – देवीशंकर अवस्थी, भारतीय ज्ञानपीठ, नई दिल्ली
5. कहानी : नई कहानी – डॉ. नामवार सिंह. लोकभारती प्रकाशन. इलाहाबाद



46.

हिंदी भाषा : एक सामान्य परिचय

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
हिंदी भाषा : एक सामान्य परिचय	HIUBTA2	02	02	00	00	Pass in 10+ 2

Course Code	Course Name	Periods			Duration	Scheme			Credits
		L	T	P		IA	ESE	Sub Total	
HIUBTA1	हिंदी भाषा : एक सामान्य परिचय	2	-	-	2 Hours	30	70	100	2

Course Objective :

- हिंदी भाषा की बनावट और बुनावट का ज्ञान भाषागत प्रयोगों की दिशा और दशा को निर्धारित करती है।

Syllabus Content :

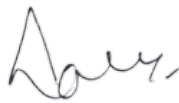
- ❖ भाषा की परिभाषा, प्रकृति एवं विविध रूप
- ❖ हिंदी की वर्ण-व्यवस्था : स्वर एवं व्यंजन ।
- ❖ स्वर के प्रकार - ह्रस्व, दीर्घ तथा प्लुत ।
- ❖ व्यंजन के प्रकार - स्पर्श, अन्तस्थ, ऊष्म, अल्पप्राण, महाप्राण, घोष तथा अघोष ।
- ❖ वर्णों का उच्चारण स्थान : कण्ठ्य, तालव्य, मूर्धन्य, दन्त्य, ओष्ठ्य तथा दंत्योष्ठ्य ।
- ❖ बलाघात, संगम, अनुतान तथा संधि ।

सहायक ग्रंथ :

1. आधुनिक हिन्दी व्याकरण और रचना – वसुदेव नन्दन प्रसाद, भारती भवन प्रकाशन, पटना
2. सामान्य हिन्दी एवं हिन्दी व्याकरण- ब्रजकिशोर प्रसाद सिंह, यूनिवर्सिटी पुस्तक, नई दिल्ली
3. हिन्दी व्याकरण – कामता प्रसाद गुरु, प्रभात प्रकाशन, नई दिल्ली
4. भाषा विज्ञान- भोलानाथ तिवारी, किताब महल, नई दिल्ली
5. हिन्दी भाषा – हरदेव बाहरी, अभिव्यक्त प्रकाशन, जोधपुर

Course Learning Outcomes :

हिन्दी भाषी प्रदेशों में उच्च शिक्षा प्राप्त विद्यार्थियों से न्यूनतम अपेक्षा है कि वे अपनी भाषा की सामान्य विशेषताओं, लिपि और उसकी वैज्ञानिकता आदि से उनका सामान्य परिचय जरूर हो। इसे ही ध्यान में रखकर यह पाठ्यक्रम तैयार किया गया है।



47.

साहित्य और हिंदी सिनेमा

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
साहित्य और हिंदी सिनेमा	HIUBTL1	02	02	00	00	Pass in 10+ 2

Course Code	Course Name	Periods			Duration	Scheme			Credits
		L	T	P		IA	ESE	Sub Total	
HIUBTL1	साहित्य और हिंदी सिनेमा	2	-	-	2 Hours	30	70	100	2

Course Objective :

- सिनेमा के रूप में हिंदी साहित्य का एक बड़ा बाजार संभावनाशील है।
- तकनीक के विभिन्न माध्यमों से साहित्य को आम जनमानस से जोड़ा जा सकता है।

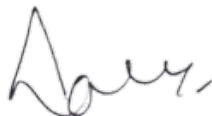
Syllabus Content :

- ❖ **सिनेमा और समाज** : विश्व में सिनेमा का उदय, मध्यवर्ग, आधुनिकता और सिनेमा, मनोरंजन माध्यमों का जनतंत्रीकरण और सिनेमा, मनोरंजन माध्यमों की राजनीति, साहित्य और सिनेमा।
- ❖ **हिन्दी सिनेमा का संक्षिप्त इतिहास** : भारतीय मध्यवर्ग और हिन्दी सिनेमा, भारतीय लोकतंत्र और हिन्दी सिनेमा, सिनेमा में भारतीय समाज का यथार्थ, सिनेमाई यथार्थवाद और समानान्तर सिनेमा, भूमंडलीकरण बाजारवाद और हिन्दी सिनेमा, बाल फिल्में।
- ❖ **साहित्य और सिनेमा** : अंतरसंबंध, सिनेमा और उपन्यास, सवेदना का रूपान्तरण और तकनीक।
- ❖ **फिल्म समीक्षा**

आरंभ से 1947	: राजा हरिश्चंद्र, अछूत कन्या, देवदास।
1947 से 1970	: मदर इंडिया, दो आँखें बारह हाथ, तीसरी कसम, नया दौर।
1970 से 1990	: गर्म हवा, आक्रोश, शोले, आँधी।
1990 से अद्यतन	: तारे जमीं पर, श्री इंडियट्स, बैंडिट क्वीन, मुन्नाभाई एम.बी.एस., पिक।

सहायक ग्रंथ :

1. भारतीय सिनेमा का इतिहास – अनिल भार्गव, सिने साहित्य प्रकाशन, जयपुर
2. हिन्दी सिनेमा – आदि से अनंत- प्रह्लाद अग्रवाल, साहित्य भंडार, इलाहाबाद
3. पटकथा लेखन – मनोहर श्याम जोशी, राजकमल प्रकाशन, नई दिल्ली
4. कथा-पटकथा – मन्नू भण्डारी, वाणी प्रकाशन, नई दिल्ली
5. सिनेमा समय – विष्णु खरे. अनन्या प्रकाशन. नई दिल्ली



48.

CULTURAL ECOLOGY: ISSUES AND CONCERNS

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
CULTURAL ECOLOGY: ISSUES AND CONCERN	HSUATA1	02	02	00	00	Pass in 10+ 2

- CO1: Understand the basic concepts of cultural ecology, its objectives, scope, and significance. CO2: Identify the components of the environment and analyze the interrelationship of exploitative or productive technology and the environment.
- CO3: Analyze the impact of the human-environment nexus on the other aspects of culture.
- CO4: Evaluate the relationship between humans and the environment, including their place in nature, agriculture, animal husbandry, and representations of the environment in popular and classical tradition.
- CO5: Analyze environmental consciousness in religious beliefs with reference to Hindu, Islam, and Christian traditions.

Paper - I (HSUATA1): Cultural Ecology: Issues and Concern

Learning outcomes: This course aims to introduce students to important issues related to the environment and ecology and to develop their thoughts about cultural ecology. They will learn to appreciate the ethical value, cross-cultural and historical context of environment issues and the links between human & natural system. Also understand the conservation through ages including comparison between past & present.

Unit-1: Understanding the Concepts of Cultural Ecology

- Definition, Objectives, Scope & Significance
- Components of Environment
- The interrelationship of exploitative or productive technology and environment
- Impact of the human-environment nexus on the other aspects of culture

Unit 2: Relationship between Human and Environment

- Human's place in Nature. Srishti / Universe and its Attributes
- Agriculture and Animal Husbandry
- Representation of environment in popular and classical tradition
- Environmental consciousness in Religious belief (in reference to Hindu, Islam and Christian)
- Changes and continuity

Unit-3: Development and environmental concerns

- Mainstream view, reformist view, futuristic View
- Critical discourse - Deep ecology, Social ecology, Eco-Socialism
- Present challenges

Unit-4: Conservation through ages

- Indian view of Conservation
- Conservation practice in History

ESSENTIAL READINGS

R. Mash, The Rights of Nature, Madison, 1989

O.P. Dwivedi & S.N. Tiwari, Environmental crisis and Hindu Religion, New Delhi, 1987

Environmental science, William P. Cunningham & Barbara Woodworth Saigo, USA, 1990

Fundamental of Ecology, (ed.) E.P. Odum, W.B. Philadelphia Pennsylvania USA-1959

Social, Cultural and Economic History of India Vol-1

Chopra, Puri & Das, The Princeton Report, Man's Role in Changing the Face of the Earth

Das

49.

TOURISM: HISTORY AND APPLICATION

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
TOURISM: HISTORY AND APPLICATION	HSUATA2	02	02	00	00	Pass in 10+ 2

This course will enable students to understand the different facets of heritage and their significance. It highlights the legal and institutional frameworks for heritage protection in India as also the challenges facing it. The implications of the rapidly changing interface between heritage and history will also be examined. The course will be strongly project-based and will require visits to sites and monuments. At least two Projects will be based on visits to Museums/Heritage Sites.

I. Meaning, Definition, Characteristic and Importance

II. Types of Tourism

- [a] Eco Tourism
- [b] Historical Tourism
- [c] Spiritual and Religious Tourism
- [d] Folk art and Tourism

III. Tourism in India

- [a] Tourism Opportunity in India.
- [b] Major tourist places in India
- Delhi, Agra, Amritsar, Varanasi, Samath, Puri, Khajuraho, Tirupati, Kanyakumari etc

IV. Tourism in Chhattisgarh

- [a] Tourism Opportunity in Chhattisgarh
- [b] Major tourist place in Chhattisgarh
- Champaranya, Rajim, Ratanpur, Borhamdev, Baster, Sirpur, Mainpat, Sarguja, Giraudhpuri etc

V. Skill and Management in Tourism

- [a] Tourism Policy in India
- [b] Tourism as an Industry

ESSENTIAL READINGS

1. David Lowenthal, Possessed By The Past: The Heritage Crusade and The Spoils of History, Cambridge, 2010.
2. Layton, R. P. Stone and J. Thomas. Destruction and Conservation of Cultural Property. London: Rutledge, 2001.
3. Lahiri, N. Marshaling the Past - Ancient India and its Modern Histories. Ranikhet: Permanent Black. 2012, Chapters 4 and 5.
4. S.S. Biswas, Protecting the Cultural Heritage (National Legislations and International Conventions). New Delhi: INTACH, 1999.
5. O.P. Agrawal, Essentials of Conversations and Museology, Delhi, 2006.
6. S. Chainani, Heritage and Environment, Mumbai: Urban Design Research Institute, 2007.





50.

UNDERSTANDING POPULAR CULTURE

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
UNDERSTANDING POPULAR CULTURE	HSUATL1	02	02	00	00	Pass in 10+ 2

- CO1: Students will be able to define and analyze popular culture and its historical context in India.
- CO2: Students will develop an understanding of the different mediums of popular culture such as visual, oral, and audio-visual and their significance in shaping cultural traditions.
- CO3: Students will be able to analyze the impact of popular culture on society and the changing trends in Indian cinema and television.
- CO4: Students will develop an appreciation for the diverse festivals and fairs celebrated in India and their cultural significance.
- CO5: Students will be able to analyze the impact of globalization on popular culture and the role of the internet and audio-visual media in shaping it.

Paper - I (HSUATL1): Understanding Popular Culture

The paper examines some popular cultures expressed in different mediums like visual, oral and cultural. In the process of their evolution, these cultures eclectically draw from traditions, articulate anxieties, and even give rise to new traditions. The paper endeavours to equip students with understanding such phenomena historically, with special reference to India. It is imperative that the students use electronic devices to view, record, and document the subject matter.

I. Introduction

- a) Defining Popular Culture and Understanding it Historically

II. Visual Expressions

- b) Folk Art, Painting, Photography

III. Performance

- a) Indian Art of Music
b) Indian Art of Dancing
c) Indian Architecture

IV. The Audio-Visual: Cinema and Television

- a) Indian cinema in Pre-Independence (1930s and 40s)
b) Indian cinema in Post-Independence.
c) Changing Mood of Indian Cinema in 1970s and 80s.
d) Expressions of Popular Culture in Television

V. Fairs and Festivals

- a) Religious and Regional festivals of India
b) Famous Festivals in Different States of India

VI. Popular culture in a globalized world

- a) The Impact of the Internet and Audio-Visual Media

ESSENTIAL READINGS

- Dissanayake, W. and K. M. Gokul Singh, *Indian Popular Cinema*, Trentham Book, London, 2004
- John Storey, *Cultural Theory and Popular Culture*, London, 2001
- Oberoi, Patricia, *Freedom and Destiny: Gender, Family and Popular Culture in India*, Delhi, 2009
- Christopher Princy, *Camera Indica: The Social Life of Indian Photographs*, Chicago, 1998
- Pankaj Rag, *Dhunoke Yatri*, Rajkamal, New Delhi, 2006
- Ramaswamy, V. 'Women and the 'Domestic' in Tamil Folk Songs' in Kumkum Sangari and Uma Chakravarti, eds., *From Myths to Markets: Essays on Gender*, Shimla, 1999
- Singh, Lata (ed.), *Theatre in Colonial India: Playhouse of Power*, New Delhi, 2009

Ans.



51.

RADIO PRODUCTION

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
RADIO PRODUCTION	JMUATA2	02	02	00	00	Pass in 10+ 2

JMUATA2 -Radio Production

Course Objectives:

1. To know the format of broadcasting in Radio
2. To know the techniques of Radio broadcast and production
3. To know the stages of radio production

Course contents:

Unit 1 –

Broadcast Formats, Public service advertisements*, Jingles*, Radio magazine*, Interview, Talk Show, Discussion, Feature, Documentary

Unit 2:

Broadcast Production Techniques, Working of a Production Control Room & Studio: Types and functions, acoustics, input and output chain, studio console: recording and mixing. Personnel in Production process – Role and Responsibilities

Unit 3- Stages of Radio Production Pre-Production – (Idea, research, RADIO script), Production– Creative use of Sound; Listening, Recording, using archived sounds, (execution, requisite, challenges) Editing, Creative use of Sound Editing.

Suggested Exercise- Producing any Radio format mentioned in the Unit 1. (Duration-5 minutes).

*Only introductory in nature. These formats will be dealt with in detail in Advanced Broadcast paper.

Course outcomes:

1. Understanding of various broadcast formats in radio production
2. Learning of the techniques of broadcast production
3. Understanding of the process of radio production

Suggested reading list-

1. Aspinnall, R. (1971) *Radio Production*, Paris: UNESCO.
2. Flemming, C. (2002) *The Radio Handbook*, London: Routledge.
3. Keith, M. (1990) *Radio Production. Art & Science*, London: Focal Press.
4. McLeish, R. (1988) *Techniques of Radio Production*, London: Focal Press.
5. Nisbett, A. (1994) *Using Microphones*, London: Focal Press.
6. Reese, D.E. & Gross, L.S. (1977) *Radio Production Work*, London: Focal Press.
7. Siegel, E.H. (1992) *Creative Radio Production*, London: Focal Press.



52.

PHOTOGRAPHY

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
PHOTOGRAPHY	JMUATA1	02	02	00	00	Pass in 10+ 2

JMUATA1 Photography

Course Objectives:

1. To know the concept of photography and its development
2. To know the mechanism of photography
3. To know the different camera handling and their process
4. To know the photo journalism

Course contents:

Unit I:

History of Photography Definition and origin of Photography , The birth of Camera and its evolution, Modernization of Photography and its use in Mass Media Invention of Digital Photography

Unit II:

Equipments of Photography Cameras, Lenses, Tripods, Monopods Camera bags, Digital storage

Unit III:

Lighting -the different types of lighting-Natural lighting-and Artificial Lighting, The reflection of light Recommended equipment for outdoor lighting , Introduction to indoor lighting and Photographing

Unit IV:

Types of Photography and Photo Journalism , News Photography, Sports Photography, Nature photography, Portrait photography, Fashion photography and, advertisement photography, The basics of photojournalism and importance of context in photojournalism.

Unit V:

Editing Photo editing software: Microsoft Office Picture manager, Corel Draw, Adobe Photoshop Elements, Photoshop CC (Creative Cloud) Correcting imperfect images: Picture Orientation, Cropping, Levels, Altering brightness and contrast, Red eye.

Course outcomes:

1. Understanding of the concept of photography and its historical development
2. Understanding of photography process
3. Understanding of the uses of different photography camera and lights
4. Learning of art of the photo journalism and the photo editing

Suggestive Readings:

The Photography Book by Editors of Phaidon Press, 30 April 2000.
All about Photography by Ashok Dilwali, National Book trust , Year of Publication:2010 New Delhi.
Practical photography by O.P. SHARMA HPB/FC (14 March 2003).
The Photographer's Guide to Light by Freeman John Collins & Brown, 2005.
Lonely Planet's Best Ever Photography Tips by Richard l'Anson published by Lonely Planet



53.

MEDIA, GENDER AND HUMAN RIGHTS

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
MEDIA, GENDER AND HUMAN RIGHTS	JMUATL2	02	02	00	00	Pass in 10+ 2

Course Objectives:

1. To understand the role of media in society
2. To understand the conceptual frameworks of Gender studies
3. To understand the concept of Human Rights
4. To know the role of media in Human Rights

Course contents:

Unit I

Media and the social world, Media impact on individual and society, Democratic Polity and mass media, Media and Cultural Change, Rural-Urban Divide in India: grass-roots media

Unit II

Gender Conceptual Frameworks in Gender studies, Feminist Theory, History of Media and Gender debates in India (Case studies), Media and Gender - Theoretical concerns., Media and Masculinity, Media: Power and Contestation, Public Sphere and its critique, "Public sphere" of the disempowered?

Unit III

Media and Social Difference: class, gender, race etc. Genres – Romance, Television . Soap Opera. Sports Presentation: a) Watch a Indian TV Soap Opera /reality show for a week and for representation of Family. b) Project on use of internet by the marginalized groups.

Unit IV

Media and Human Rights, Human Rights- Theoretical perspectives, Critique Universal Declaration of Human Right, Human Rights and Media (Case Studies) Presentation: Representation of Human Rights issues and violations in International and Media

Course Outcomes:

1. Understanding the role of media in society
2. Learning of the conceptual frameworks of Gender studies
3. Understanding of the concept of Human Rights
4. Learning the role of media in Human Rights

Essential Readings

1. Street, John. *Mass media, politics and democracy*. Palgrave Macmillan, 2011.
2. Balnaves, Mark, Stephanie Donald, and Brian Shoemith. *Media theories and approaches: A global perspective*. Palgrave-Macmillan. 2009 (Pg No. 3-10, 11-34, 35-53)
3. Mackay, Hugh, and Tim O'Sullivan, eds. *The media reader: continuity and transformation*. SAGE Publications Limited, 1999. 13-28, 43-73, 287-305.
4. Asen, Robert & Brouwer, Daniel, 2001. Counter Publics and the State, SUNY Press. 1-35, 111-137
1. Ninan, Sevanti. *Headlines from the heartland: Reinventing the Hindi public sphere*. SAGE Publications Pvt. Limited, 2007.
2. Curran, James. "Rethinking mass communication." *Cultural studies and communications*. London: Arnold (1996).
3. McQuail, Denis. *Mass communication theory: An introduction*. Barcelona, 1991. 79-111
4. Berger, Arthur Asa. *Media and society: A critical perspective*. Rowman & Littlefield, 2012. Pg 9-21, 167-180
5. Nichols, Joe & Price, John, *Advanced Studies in Media*. Thomes Nelson, 1999. 42-55
6. Thirumal, P., and Gary Michael Tartakov. "India's Dalits search for a democratic opening

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54.
DOCUMENTARY PRODUCTION

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
DOCUMENTARY PRODUCTION	JMUBTL2	02	02	00	00	Pass in 10+ 2

Course Objectives:

1. To know the concept of documentary making
2. To know the production of documentary

Course contents:

Unit 1:

Understanding the Documentary, Introduction to Realism Debate, Introduction to Shooting styles, Introduction to Editing styles, Structure and scripting the documentary.

Unit 2-

Documentary Production, Pre-Production, Researching the Documentary, Research: Library, Archives, location, life stories, ethnography Writing a concept: telling a story Treatment, Writing a proposal and budgeting

Suggested Practical Exercise- Shooting a short film (5-6 minutes) and Editing the same.

Course outcomes:

1. Understanding of the concept of the documentary
2. Learning of the production of documentary

Suggested Readings:

Erik Barnow and Krishnaswamy Documentary
Charles Musser "Documentary" in Geoffrey Nowell Smith ed *The Oxford History of World Cinema*
Oxford University Press: 1996, 322-333
Michael Renov "The Truth about Non Fiction" and "Towards a Poetics of Documentary" in Michael
Renov ed. *Theorizing Documentary* AFI Film Readers, New York and London: Routledge: 1993, 1-36
Trisha Das *How to Write a Documentary Double Take* by PSBT

Suggested Screenings

Michael Moore: *Roger and Me*
Nanook of the North by Robert J Flaherty
Nightmail by Basil Wright
Bombay Our City by Anand Patwardhan
Black Audio Collective
City of Photos by Nishtha Jain
Films by PSBT



55.

INTRODUCTION TO FILM STUDIES

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
INTRODUCTION TO FILM STUDIES	JMUBTA1	02	02	00	00	Pass in 10+ 2

Course Objectives:

1. To understand the language of cinema
2. To learn the forms & style of cinema
3. To understand the historical development of Chhattisgarhi Cinema, its issues and prospects
4. To know the historical development of Hindi Cinema

Course contents:

Unit I -

Language of Cinema Language of Cinema I – Focus on visual Language: Shot, Scene, Mis-en-scene, Deep focus, Continuity Editing, Montage Language of Cinema II – Focus on Sound and Colour: Diegetic and Non Diegetic Sound; Off Screen Sound; Sync Sound; the use of Colour as a stylistic Element Genre and the development of Classical Hollywood Cinema

Unit II -

Film Form and Style, German Expressionism and Film Noir, Italian Neorealism, French New-Wave

Unit III -

History of Chhattisgarhi Cinema, problems and prospects of Chhattisgarhi Cinema, Future of Chhattisgarhi cinema

Unit IV -

Hindi Cinema, Early Cinema and the Studio Era 1950s - Cinema and the Nation (Guru Dutt, Raj Kapoor, Mehboob) The Indian New-Wave, Globalisation and Indian Cinema, Film Culture

Recommended Screenings or clips

Unit I- *Rear Window* by Alfred Hitchcock (Language of Cinema), *Battleship Potemkin* by Sergei Eisenstein (Language of Cinema), *Pather Panchaliby* Satyajit Ray, *The hour of the Furnaces* by Fernando Solanas

Unit IV - *Nishant* by ShyamBenegal/Aakrosh by GovindNihalani (Indian New wave), *Pyaas* by Guru Dutt

Course outcomes:

1. Understanding of the language and grammar of cinema
2. Knowing the various forms and style of cinema
3. Understanding of the historical development of Chhattisgarhi Cinema, its issues and the challenges for future prospects
4. Understanding of the historical development of Hindi Cinema

Suggested Readings:

Andre Bazin, "The Ontology of the Photographic Image" from his book *What is Cinema Vol.I* Berkeley, Los Angeles and London: University of California Press: 1967, 9-16

Sergei Eisenstein, "A Dialectic Approach to Film Form" from his book *Film Form: Essays in Film Theory* (Edited and Translated by Jay Leyda) San Diego, New York, London: A Harvest/Harcourt Brace Jovanovich, Publishers: 1977, 45-63

Tom Gunning, "Non-continuity, Continuity, Discontinuity: A theory of Genres in Early Films," in *Ideology of Hindi Film* by Madhava Prasad. New Delhi: Oxford University Press. 1998

Global Bollywood by Anandam P. Kavoori and AswinPunanthambekar Eds. New York: New York University Press. 2008

56.

GENERAL & LEGAL ENGLISH- I

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
GENERAL & LEGAL ENGLISH- I	LAIATA5	02	02	00	00	Pass in 10+ 2

1. Understanding these terms so that he/she can navigate the legal system more effectively and make informed decisions.
2. Understanding the abbreviations of law magazines and journals is crucial for legal research and analysis, as they are commonly used in legal documents and citations.
3. The ability to translate passages accurately and effectively between languages is an important skill for communication and understanding across cultures and languages.
4. Develop critical thinking, analytical, and writing skills necessary for success in legal professions.
5. Acquire the communication skill in various fields, including academics, business, and personal interactions.

UNIT I	Legal Language Legal terminology (Legal terms, its meaning)— Explanation of the Latin Glossary/Maxims either in English or Hindi: Ab-initio, Ad hoc, Ad-interim, Ad-litem guardian, Actus non-facietreum nisi mens sit rea, Abuse of process, Injuria sine Damnum, Damnum sine injuria, Novus actusinterveniens, Respondent superior, Res Ipsa loquitur, Restitution in integrum, Caveat emptor, Res- judicata, Prima facie, Malafides, Bonafides, Expost facto, Exparte, Ex-gratia, Tresspass-ab-initio, Sine-die, Non-compos mentis, Nemo-dat-quod-non habeat
UNIT II	Abbreviation of Law Magazines & Journals: AIR, S.C.C., M.P.L.J., J.L.J., M.P.W.N., Cal. LR, S.C.R., S.C.W.R., AL.I.L.J., Cal. L.J., O.L.R, Cr. L.J., All L.J., I.B. Rev., I.L.R., AI. Cr. C., S.C.J., I.T.R., I.T.J., Bom. L.R., An. L.T.
UNIT III	Translation of the Hindi passage into English—Proficiency in regional language: Translation of the English passage into Hindi—Precise writing
UNIT IV	Essay writing on the topics of legal interest: Marriage under Hindu Law; Marriage and Divorce under Mohmmedan Law; Essentials of a valid contract; Master's liability under the law of Tort; Right of private defence under Criminal Law; Fundamental Rights under the Indian Constitution; Emergency provisions; Theories of punishment; Independence of Judiciary.
UNIT V	General English: Gender, Number (Singular, Plural), Article, Tenses, Active and Passive voice, Preposition, Narration, One word Substitution, Antonyms and synonyms, Correction of Common Errors.
Suggested Reading: 1. Dr. Anniruddh Prasad, Legal English, CLA Allahabad, 2. Legal Glossary	

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57.
LIBRARY LITERACY

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
LIBRARY LITERACY	LIUATA1	02	02	00	00	Pass in 10+ 2

Objectives:

Basic objectives of this course are to-

- Provide basic knowledge about library and its uses.
- Literate about library services.
- Provide basic training on information storage ,searching & retrieval system.
- To inculcate the ethical use of information among the learners.
- To familiarize the learners with the organization of information sources.

Learning Outcomes:

- Create awareness among the learners about various information sources & their use.
- To develop necessary skills among learners for utilizing the library and information services to supplement studies and for solving day-by-day problems.
- Inculcate interest in the learners in the LIS which may help them to opt the subject as a career

Unit -1 Library and Society

- Libraries Definition, Functions, types.
- Five laws of Library Science
- Library rules and users
- Librarianship as a profession

Unit – 2 Knowledge Organizations and Retrieval

- Classification
- Cataloguing
- Indexing and Abstracting



58.
BASICS OF STATISTICS

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
BASICS OF STATISTICS	AMUATA2	02	02	00	00	Pass in 10+ 2

Course Learning Outcomes: This course will enable the students to:

1. Explain the basic ideas of measures of central tendency, dispersion and their applications.
2. Adapt the knowledge of various Probability distributions and their applications.
3. Apply statistical techniques for sampling of big data.
4. Explain a formulation helping to predict one variable in terms of the other that is, correlation and linear regression.

Unit-1: Review on Probability

Measures of Central Tendency, Measures of Dispersion, Probability, Conditional Probability, Random Variables, Expected Value, Moment generating function, Probability Distributions, Binomial Distribution, Poisson Distribution, Normal Distribution.

Unit-2: Sampling Methods

Random Sampling and Methods of Samplings, Sampling distribution and standard error, Sampling distribution of the Sample Mean, Central limit theorem, Sampling distribution of the sample proportion, Sampling distribution of the difference between two sample means and Sampling distribution of the difference between two sample proportions.

Unit-3: Correlation and Regression

Correlation Karl Pearson's Coefficient of correlation, Rank correlation, linear regression, Lines of regression, Inferences concerning the regression coefficients.

References:

1. S. C. Gupta and V. Kapoor, Fundamentals of mathematical Statistics, Sultanchand and Son's, New Delhi.
2. Robert V. Hogg, Joseph W. McKean & Allen T. Craig(2013), Introduction to Mathematical Statistics(7th Edition), Person Education.
3. Irwin Miller & Marylees Miller (2014). *John E. Freund's Mathematical Statistics with Applications* (8th edition). Pearson. Dorling Kindersley Pvt. Ltd. India Jim Pitman (1993). *Probability*, Springer-Verlag.
4. Sheldon M. Ross (2014). *Introduction to Probability Models* (11th edition). Elsevier.
5. A. M. Yaglom and I. M. Yaglom (1983). *Probability and Information*. D. Reidel Publishing Company. Distributed by Hindustan Publishing Corporation (India) Delhi.

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59.

SET THEORY AND LOGIC

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
SET THEORY AND LOGIC	AMUATA1	02	02	00	00	Pass in 10+ 2

Course Objective: The course should enable the students -

- 1) Describe memberships of sets, including the empty set, using proper notation, and decide whether given items are members and determine the cardinality of a given set.
- 2) Recognize when set theory is applicable to real-life situations, solve real-life problems, and communicate real-life problems and solutions to others.
- 3) Understand basic concept of logic and analyze the concepts of truthiness.
- 4) Working of different types of logic.
- 5) Understand different types of theory and Explore and apply key concepts in logical.

Introduction, propositions, truth table, negation, conjunction and disjunction. Implications, biconditional propositions, converse, contra positive and inverse propositions and precedence of logical operators. Propositional equivalence: Logical equivalences. Predicates and quantifiers: Introduction, Quantifiers, Binding variables and Negations.

Sets, subsets, Set operations and the laws of set theory and Venn diagrams. Examples of finite and infinite sets. Finite sets and counting principle. Empty set, properties of empty set. Standard set operations. Classes of sets. Power set of a set.

Difference and Symmetric difference of two sets. Set identities, generalized union and intersections. Relation: Product set, Composition of relations, Types of relations, Partitions, Equivalence Relations with example of congruence modulo relation, Partial ordering relations, and n-ary relations.

Books Recommended:

1. R.P. Grimaldi, *Discrete Mathematics and Combinatorial Mathematics*, Pearson Education, 1998.
2. P.R. Halmos, *Naive Set Theory*, Springer, 1974.
3. E. Kamke, *Theory of Sets*, Dover Publishers, 1950.

Course Outcomes: This course will enable the students to -

- 1) Understand basic concept of logic.
- 2) Analyze the concepts of truth ness.
- 3) Study of different types of sets.
- 4) Learn about relations.
- 5) Theoretical concepts of mathematics.



60.

INTRODUCTION TO CRYPTOGRAPHY

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
INTRODUCTION TO CRYPTOGRAPHY	AMUATL1	02	02	00	00	Pass in 10+ 2

Course Objectives: - This course aims to -

- 1) Introduce students to the basic concepts and techniques used in cryptography, including encryption, decryption, key management, and digital signatures. This includes an overview of classic and modern cryptographic algorithms and their properties.
- 2) To learn about how to maintain the Confidentiality, Integrity and Availability of a data.
- 3) Teach students how to analyze cryptographic protocols for their security and privacy properties. This includes topics such as formal verification, threat modeling, and security testing.
- 4) Teach students how to implement cryptographic algorithms using programming languages. This includes topics such as key generation, encryption, decryption, and digital signatures.
- 5) Provide students with an understanding of the challenges and issues faced by real-world cryptographic systems, such as side-channel attacks, timing attacks, and implementation flaws.

Basic Concept of Cryptography, Information security, Background on functions, Basic terminology and concepts, Symmetric-key encryption, Digital signatures, Authentication and identification, Public-key cryptography, Hash functions, Protocols and mechanisms, Key establishment, management and certification, Pseudorandom numbers and sequences, Classes of attacks and security models, Identification and Entity Authentication, Digital Signatures, Efficient Implementation, Patents and Standards. Basic concepts of elliptic curve and quantum cryptography.

Text Books:

1. Wenbo Mao, Modern Cryptography: Theory and Practice. Pearson Education, 2004
2. J Buchmann, Introduction to Cryptography, Springer (India) 2004



61. GRAPH THEORY

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
GRAPH THEORY	AMUBTL1	02	02	00	00	Pass in 10+ 2

Course Objectives: The main concern of Graph Theory is to -

- 1) Improve the proof writing skills.
- 2) Understand the basics of graph theory and their various properties.
- 3) Model problems using graphs and to solve these problems algorithmically.
- 4) Apply graph theory concepts to solve real world applications like routing, TSP/traffic control, etc.
- 5) Optimize the solutions to real problems like transport problems etc.,

Definition, examples and basic properties of graphs, pseudo graphs, complete graphs, bi-partite graphs, isomorphism of graphs, paths and circuits, Eulerian circuits, Hamiltonian cycles, the adjacency matrix, weighted graph, travelling salesman's problem, shortest path, Dijkstra's algorithm, Floyd-Warshall algorithm.

Books Recommended

1. B.A. Davey and H.A. Priestley, *Introduction to Lattices and Order*, Cambridge University Press, Cambridge, 1990.
2. Edgar G. Goodaire and Michael M. Parmenter, *Discrete Mathematics with Graph Theory*, 2nd Edition, Pearson Education (Singapore) P. Ltd., Indian Reprint 2003.
3. Rudolf Lidl and Gunter Pilz, *Applied Abstract Algebra*, 2nd Ed., Undergraduate Texts in Mathematics, Springer (SIE), Indian reprint, 2004.

Course Outcomes: After successful completion of this paper the students will be able to:

- 1) Appreciate the definition and basics of graphs along with types and their examples.
- 2) Understand the definition of a tree and learn its applications to fundamental circuits.
- 3) Analyze the significance of graph theory in different engineering disciplines
- 4) Demonstrate algorithms used in interdisciplinary engineering domains.



62.

THEORY OF INTERPOLATION

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
THEORY OF INTERPOLATION	AMUBTA1	02	02	00	00	Pass in 10+ 2

Course objective: The purpose of the present course is to give the basic idea of some interpolation techniques which may be used in various real life problems.

Expected Outcomes: After the completion of the course student will be able to understand the applicability situation of various interpolation techniques and it may be used in day to day life problems also.

Finite Difference: Forward difference, backward difference, central difference, difference of polynomial, other difference operator etc.

Interpolation: Introduction, Newton's forward interpolation formula, Newton's backward interpolation formula, Central difference interpolation formula, Gauss's forward and backward interpolation formula, Sterling's and Bessel's formulae.

Interpolation with unequal intervals: Lagrange's interpolation formula, divided difference, Newton's divided difference formula.

Text Books:

1. Jain M K, Iyengar S R K and Jain R K, Numerical Methods for Scientific and Engineering Computation, 4th Edn, New Age International Pvt. Ltd (2005)
2. S S Sastry, Introductory Methods of Numerical Analysis, 5th Edn. Prentice Hall of India.

Reference book:

1. Jain M K, Numerical Solutions of Differential Equations, 2nd Edn, John Wiley and Sons Ltd (1984)

63.

ANALYTICAL TECHNIQUES IN PHYSICS

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
ANALYTICAL TECHNIQUES IN PHYSICS	PPUATL1	02	02	00	00	Pass in 10+ 2

Course Objective

- The course focuses on the properties, functions of the internal structure, and arrangement of atoms in a crystalline material. It offers an insight into how x-ray diffraction, can solve crystallographic issues related to single and poly-crystalline material, right from the base. This course will also cover the basic principles and techniques of scanning electron microscopy and Atomic Force microscopies along with demonstrations on the instrument details and imaging experiments. The sample preparation techniques for the microstructural analysis and surface Morphology analysis will be discussed. Structural studies by Fourier transform IR (FTIR) and Raman spectroscopies will be discussed.

Course learning outcomes:

- Students will have achieved the ability to: 1. apply appropriate characterization techniques for microstructure examination at different magnification level and use them to understand the microstructure of various materials 3. Determine crystal structure of specimen and estimate its crystallite size by X-ray Diffraction technique 4. Use appropriate spectroscopic technique to measure vibrational / electronic transitions.

Unit - I: Structure and Microstructure analysis by X-ray and electron diffraction: The geometry of crystals and reciprocal lattice, Basics of x-rays and their production and detection, X-ray diffraction, Determination of crystal structure: Qualitative and quantitative analysis, Particle size determination by x-rays, X-rays and stress analysis,

Unit - II: Scanning electron microscopy techniques and Composition analysis by Energy dispersive X-ray (EDX): Introduction to Scanning electron microscopy, Basic principles and components, Different examination modes (Bright field illumination, Oblique illumination, Dark field illumination, Phase contrast, Instrumental details and image formation, Energy-dispersive x-ray spectroscopy (paired with scanning electron microscopy) analysis to gain elemental information about samples.

Unit - III: Structural studies by Fourier transform IR (FTIR) and Raman spectroscopies: Basics of Fourier Transform Infrared (FT-IR) spectrometry, Different regions in infrared radiations, Modes of vibrations in diatomic molecule. characteristic absorption bands, Instrumental details, Qualitative treatment of Rotational Raman effect, Vibrational Raman spectra, Stokes and anti-Stokes lines; their intensity difference, Instrumental details& data accusation process.

Unit - IV: Ultra-violet and Visible Absorption Spectroscopy: Principle of UV Spectroscopy, Beer's Law and Quantitation, Deviations and limitations to Beer's Law, Instrumentation for UV-VIS spectroscopy i) Components and design ii) Actual commercial instruments, Methods and applications of absorption spectroscopy

Reference Books:

- Li, Lin, Ashok Kumar Materials Characterization Techniques Sam Zhang; CRC Press, (2008).
- Cullity, B.D., and Stock, R.S., "Elements of X-Ray Diffraction", Prentice-Hall, (2001).
- Murphy, Douglas B, Fundamentals of Light Microscopy and Electronic Imaging, Wiley-Liss, Inc. USA, (2001).



64.
ELECTONICS IN DAILY LIFE

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
ELECTRONICS IN DAILY LIFE	AECPL01	02	02	00	00	Pass in 10+ 2

Unit - I: History of Electronics: The vacuum tube era, The semiconductor revolution, Integrated circuits, Compound Semiconductor, Digital electronics Materials, Optoelectronics, Superconducting electronics, Flat-panel displays

Unit - II: Different Electronic Components / Semiconductor Components, Passive Components-Resistors: specifications and colour coding. Capacitors: Principle, specifications and colour coding. Inductors: Principle, specifications and classification, Battery, Battery holders and connectors ,Fuses ,Transistors, Oscillation, thyristors ,Light-emitting diodes (LEDs) AC fundamentals: Generation of alternating voltages, Basic electronic functions Rectification, Amplification Using n-p-n transistor, Multimeters, MOSFETs.

Unit - III: Application of Electronics: Consumer Electronics Office Gadgets like calculators, Personal computers, Digital Camera, FAX machines, Printers, Scanners, Front Projector, etc. Home appliances Robot Vacuum Cleaner, Electric Deep Fryer Refrigerator, AC, Coffee Maker Machine, Hair dryer Water Purifier/Dispenser, Storage Devices
Advanced Consumer Electronic Devices: Smart Phones, iPod and Tablets, Wi-Fi and the Internet, barcode scanners, ATM, Dishwasher and POS terminals.

Medical Electronics: Stethoscope, Respiration Monitors Glucose meter, The Pacemaker, MRI, CT scan

Unit - IV: Industrial and Automotive Electronics: Power Windows, Electronic Control Unit (ECU), Airbag control , all vehicles etc. Meteorological and Oceanographic Electronics: Barometer: .Anemometer: Anemometer Hygrometer ,Data logger Smart Grid Systems Image Processing, Entertainment and Communication Electronics: Smart TVs, Set Top Boxes, Speakers , receivers etc.

Defence Application: RADAR technology, Electronic Warfare Systems, Military electronic equipments etc.

Reference Books:

1. Getting Started in Electronics by Forrest, M.Mims, Master Publishing, Inc
2. Make Electronics - Learning by Discovery by Charles Platt ,Maker Media Publishers
3. Practical Electronics for Inventors , Paul Scherz, McGraw-Hill Education
4. Everyday Electronics and You: A Guide to Maintaining and Getting the Best Out of Your Everyday Electronics Devon A. Smith Kindle Edition ,
5. Complete Guide to Home Appliance Repair - Evan Powel, Better Homes & Garden Books Publication.
6. A Text book of Electrical Technology Vol. 1 and 2, B.L. Thereja S. Chand & Company
7. Domestic appliances servicing, K.P. Anwer, Scholar Institute Publications.
8. Basic Electrical Engineering, M.L. Anwani, Dhanpat Rai Publication.

65.

NETWORK CIRCUIT ANALYSIS

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
NETWORK CIRCUIT ANALYSIS	PLUATL1	02	02	00	00	Pass in 10+ 2

Course Objectives:

1. The objective of the course is that the student acquires the knowledge of basics of electrical network.
2. To gain the knowledge and critical analysis of electrical circuit with network theorem.

Course Outcomes:

Understand the basic concepts, basic laws and methods of analysis of electrical networks and reduce the complexity of network using different network theorems.

Unit-1

Analysis of Electrical Network: Active and passive element of circuit. Resistance Colour Code, Review of series, parallel and series-parallel circuit, Voltage divider and current divider circuit, Ground Connections in Electrical Network, Short circuit and open circuit, Electrical power, power in short and open circuit.

Unit—II

Electrical Network: Concept of Branch, Node, Loop, Mesh and Super-Mesh, Kirchhoff's Current Law (KCL), Kirchhoff's Voltage Law (KVL), Node Analysis, Mesh Analysis, Star-Delta Conversion.

Network Theorems: Concept of Ideal and practical Sources, Thevenin theorem, Norton theorem, Thevenin-Norton conversion, Superposition theorem, Maximum Power Transfer theorem.

Reference Books

1. Grob's Basic Electronics, 11th ed., Mitchel E. Schultz, McGraw Hill.
2. Electronic Device and Circuit Theory, Boylestad & Nashelsky, 11th ed. Pearson Publication.
3. Engineering Circuit Analysis J David Irwin et al Wiley India 10th Edition, 2014
4. Electric Circuits Mahmood Nahvi McGraw Hill 5th Edition, 2009
5. Introduction to Electric Circuits Richard C Dorf and James A Svoboda Wiley 9th Edition, 2015
6. Circuit Analysis; Theory and Practice Allan H Robbins Wilhelm C Miller Cengage 5th Edition, 2013 project managers.

Lab Work for Network Circuit Analysis

List of Experiments

1. Use a Multi-Meter for measuring (a) Resistances, (b) AC and DC Voltages, (c) DC Current, (d) Capacitances, and (e) Checking electrical fuses.
2. Soldering of Electrical wires and Networks.
3. To verify the Open Circuit Voltage, Thevenin's resistance and Thevenin Theorems.
4. To verify Short-Circuited Current and Norton theorems.
5. To verify Maximum power transfer theorem.
6. To study response curve of a Series LCR circuit and determine its (a) Resonant frequency, (b) Impedance at resonance, (c) Quality factor Q, and (d) Band width.
7. To study the response curve of a parallel LCR circuit and determine its (a) Anti-resonant frequency and (b) Quality factor Q.



66.

INDIAN CONTRIBUTION TO PHYSICS

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
INDIAN CONTRIBUTION TO PHYSICS	PPUATA1	02	02	00	00	Pass in 10+ 2

Course Objectives

- This course would empower the student to understand the ancient contribution of India towards Classical Physics.
- It will also enable the students to analysis Vaiseshika Darshan originated by Kanada with the principles of Classical Physics.
- The students will also be able to understand the great contribution of Indian Physicists towards the growth of Science and Technology

Learning Outcomes

- Upon successful completion of this course, students will be able to understand understand the ancient contribution of India towards Classical Physics.
- It will also enable the students to analysis Vaiseshika Darshan given by Kanada with the principles of Classical Physics.
- The students will also be able to understand the great contribution of Indian Physicists towards the growth of Science and Technology

Unit -1

- ❖ Need to understand the ancient contribution of India towards Classical Physics.
- ❖ Development of Classical Physics in Western civilization, Ancient Engineering, temples, Dam, Monastery etc.
- ❖ Basic framework of Classical Physics of ancient indian origin.
- ❖ vaisheshika darshan- introductioncommentries on important vaisheshika sutras
- ❖ Dharma of physical world, Kanada atomic theory of universe, importance of ancient thoughts in this context.

Unit -2

- ❖ Contributions of contemporary indian physicists towards the growth of science and technology:
 - a) Dr. C.V. Raman (1888-1970), and discovery of Raman effect.
 - b) Satyendranath Bose (1894-1974), Bose-Einstein condensate.
 - c) Dr. Chandrashekhar (1910-1995) and Chandrashekhar limit in Astrology.
 - d) Dr. Meghnad Saha (1893-1956) and Saha Ionization equation.
 - e) Dr. H.J.Bhabha (1909-1966)
 - f) Vikram Sarabhai (1919-1971)
 - g) G.N. Ramachandran (1922-2001)
 - h) Jayant Narlikar (1938)



67.

PHYSICS FOR SUSTAINABLE FUTURE

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
PHYSICS FOR SUSTAINABLE FUTURE	AECPP02	02	02	00	00	Pass in 10+ 2

Course Objectives

- The students will explore the physics of energy, learning to calculate the energy content of a wide variety of systems such as speeding cars, toasty houses and hot tubs, wind, solar illumination, nuclear powerplants
- To study the basic concepts to the various energy production schemes and usages found in our lives.
- This course is meant to provide a scientific foundation for understanding the energy issues facing our country and world so that students will be able to make informed decisions regarding and participate in the ongoing debate surrounding this important global issue.
- The course goals are for each student to learn how to understand and analyze issues related to energy production and usage and its influence on the environment around us (both local and global).

Learning Outcome:

By the end of the course, the student will be able to:

- Discuss the side-effects of energy production and use, and estimate energy content and conversion.
- Explain the physical concept of energy and identify it in the world around us.
- Analyze the energy usage in our lives and be well informed on the topic of energy, its use in our society, and the impact on our environment.
- Participate in the ongoing global debate and make smart decisions.

Unit - I: Fundamental laws of Nature

Basic laws of Nature that govern all energy transformations like: statistics and data, the second law of thermodynamics, exponential growth depletion time of a non-renewable resource, principles of relativity and anti-matter.

Unit - II: Need of energy and power losses

Power transmission and power loss. The status and current developments of energy in third-world countries. Power requirements and basics of related terminologies.

Unit - III: Nuclear Energy

Radiation and human health, radioactive wastes, history and future of nuclear power technologies, nuclear fuel resources, processing, use, and disposal. Fission and fusion power, three key issues related to reprocessing, storage and disposal.

Unit - IV: Renewable Energy

Types of renewable energies. Fundamentals of solar and wind energies and their environmental advantages/disadvantages. General characteristics of passive and active solar thermal energy, power generation with thermal solar energy, and solar photovoltaic systems. Wind tower and turbine design and their sustainability attributes.

Books Recommended:

1. University Physics with Modern Physics, Fourteenth Edition, By Pearson.
2. Solar energy - Suhas P Sukhative Tata McGraw - Hill Publishing Company Ltd.
3. Sustainable Energy Si Edition by Dunlap R A, Cengage Learning.
4. Textbook of Renewable Energy by S. C. Bhatia, R. K. Gupta, Woodhead Publishing India PVT.



68.

SIMULATION AND DESIGN OF DIGITAL CIRCUIT COMPONENTS

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
SIMULATION AND DESIGN OF DIGITAL CIRCUIT COMPONENTS	PLUATL2	02	02	00	00	Pass in 10+ 2

Course Objectives

- To acquaint students with various basic digital gates used in digital system and develop logical circuits using Boolean gates, construction of various logic circuits using basic gates.
- To impart practical working knowledge of Simulation and Analysis of digital circuits using MATLAB and/or SCILAB.

Learning Outcomes:

On successful Completion of the course, students will be able to:

- Understand the main features and importance of the MATLAB/SCI LAB mathematical programming environment.
- Apply working knowledge of MATLAB/SCI LAB package to simulate and solve Digital Electronics circuits and Applications.

Basics of the circuit components

Basics of Voltage, Current, Resistance and Power, Ohm's law, Series and parallel combinations of electrical components. Basics of electrical instruments such as multimeter, voltmeter and ammeter.

Basics and Applications of the MATLAB

Fundamentals of the MATLAB software. Logic Circuits, Equivalent circuits of an NOT Gate, Exclusive OR Gate, NOR Gate as Universal Gate, NAND Gate, NAND Gate as Universal Gate, XNOR Gate, Half Adder, Full Adder, Half Adder using NAND Gate, Full Adder using NAND Gate, Comparator.

Reference Books:

1. Electrical Circuits, K.A. Smith and R.E. Alley
2. Modern Digital Electronics by R.P. Jain
3. Digital Electronics by Malvino and Leech
4. Digital Signal Processing with Examples in MATLAB by Samuel D. Stearns and Don R. Hush
5. Digital Signal Processing using MATLAB by Vinay K. Ingle and Johan G. Proakis

69.

RENEWABLE ENERGY AND ENERGY HARVESTING

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
RENEWABLE ENERGY AND ENERGY HARVESTING	SECPP02	02	02	00	00	Pass in 10+ 2

Course Outcomes:

- To understand the Energy policies and to know some of the renewable energy sources such as solar energy, off-shore wind energy, tidal energy, biogas energy and hydroelectricity.
- Illustrate Photovoltaic conversion mechanism.
- Appraise wind energy conversion and ocean energy
- Conversion of vibration into voltage using piezoelectric materials,
- Conversion of thermal energy into voltage using thermoelectric modules.
- The students are expected to learn not only the theories of the renewable sources of energy, but also to have hands-on experiences on them wherever possible.

Unit - I: Introduction to Energy Policy:

Overview of world energy scenario; Energy Demand- present and future energy requirements; Review of conventional energy resources, Global warming; Green House Gas emissions, impacts, mitigation; sustainability; Clean Development Mechanism (CDM); Prototype Carbon Fund (PCF). Need and characteristics of photovoltaic (PV) systems, PV modules and sun tracking system

Unit - II: Renewable Energy Sources & Instruments: Solar, wind, small hydro, biomass, geothermal and ocean energy, energy flow in ecosystem, Solar Energy Resources, Solar radiation: Spectrum of EM radiation, sun structure and characteristics.

Sunshine recorder, Pyranometer, Pyrheliometer, Albedometer, Radiation measurement stations, solar radiation data.

Unit - III: Photovoltaic Materials and Devices:

Bulk and thin film forms of materials, single crystal and polycrystalline, amorphous and nano-crystalline semiconductor materials, Intrinsic, extrinsic and compound semiconductor, Electrical and optical properties of photovoltaic / semiconductor materials, p-n junction: homo and hetero junctions; solar cell design, Dark and illumination characteristics; Principle of photovoltaic conversion of solar energy, various parameters of solar cell.

Unit - IV: Solar Thermal Conversion:

Solar radiation, its measurements and prediction; Solar thermal collectors- flat plate collectors, concentrating collectors; solar heating of buildings; solar still; solar water heaters; solar driers; conversion of heat energy in to mechanical energy, solar thermal power generation systems.

Introduction to Geothermal Energy, Hydro Energy and Piezoelectric Energy harvesting

Reference Books

1. Non-conventional energy sources - G.D Rai - Khanna Publishers, New Delhi
2. Solar energy - M P Agarwal - S Chand and Co. Ltd.
3. Solar energy - Suhas P Sukhative Tata McGraw - Hill Publishing Company Ltd.
4. Godfrey Boyle, "Renewable Energy, Power for a sustainable future", 2004, Oxford
5. University Press, in association with The Open University. Dr. P Jayakumar, Solar Energy: Resource Assesment Handbook, 2009
6. J.Balfour, M.Shaw and S. Jarosek, Photovoltaics, Lawrence J Goodrich (USA).
7. Renewable Energy Resources Paperback John Twidell and Tony Weir ,Routledge, Taylor& Francis, 2015
8. Solar Photovoltaic's: Fundamentals, Technologies And Applications, CHETAN SINGH SOLANKI, PHI Learning Pvt. Ltd., Third Edition 2015
9. Non - Conventional Energy Resources: G. D. Rai, KhannaPublishers,2008.



70.
HUMAN RIGHTS

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
HUMAN RIGHTS	PSUATA4	02	02	00	00	Pass in 10+ 2

HUMAN RIGHTS

Course Objective:

The purpose of the course is to build conceptual understanding in students about human rights and enable them to critically examine key issues and areas often talked about in human rights discourses. Apart from state actors and institutions, agencies and law associated with them, which occupy the central place is discussion, the module also engages with social, religious, political and economic ideologies which unleash several critical issues pertaining to human rights. Thus, it is not the conflict zones but industrialization and pursuit of political and religious hegemony also throw serious human rights challenges.

Learning Outcomes:

- The student will be able to explain the meaning of human rights and examine human rights issues in different social, political and cultural contexts.
- The students will be able to relate human rights with other rights of individuals.
- They will come to know how ideologies which seek to create hegemony; religious or political, pose threats to the human rights of individuals.
- Students will be able to examine and explain issues of human rights when state and its agencies apply the methods and techniques of surveillance, interrogation and counter-terrorism operations.
- They will come to know about the human rights of the armed forces.

Unit I: Introduction to Human Rights

- Meanings of Human rights and its correlation with other rights
- Institutionalization of Human Rights: Universal Declaration of Human Rights

Unit II: Conflict Zones, Violence and the Issues in Human Rights

- Terrorism, Police Encounter and Human Rights

Unit III: Human Rights Discourses in India

- Gender, Caste and Untouchability
- Industrialization, Displacement and Land questions

Readings:

- Aggarwal, G. P. et al. (2013). *Human Rights in Changing Times*. UK: Cambridge Scholars Publishing.
- Hoffman, J., & Graham, P. (2006). *'Human Rights', Introduction to Political Theory*. Delhi: Pearson, pp. 436-458.



71.

FEMINISM: THEORY AND PRACTICE

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
FEMINISM: THEORY AND PRACTICE	PSUATA5	02	02	00	00	Pass in 10+ 2

Course Objective:

This course seeks to understand the nature, phases and core issues of the feminist movement, both in Anglo-American and India. Besides, attempts have been made to understand how the social and cultural construction of role for the women has not only undermined her position as an equal member in the society but also does not take cognizance of her contribution to the family.

Learning Outcomes:

After reading this course the students will be able to explain

- How different schools have understood patriarchy and feminist questions differently.
- The origin, evolution and key issues which are at the core of the feminist movement both in Anglo-American world and India.
- The representation of the women in the political space of India.
- How the immense contribution that women make to the family are neglected in computation?

Unit I: Understanding Patriarchy

- Meaning of Patriarchy
- Sex /Gender Distinction
- Theories of Feminism: Liberal, Marxist and Feminist (Liberal, Socialist, Radical Schools)

Unit II: Women and Politics

Women and their Representation in Politics and Administration

Unit III: Violence and Discrimination against Women

- Domestic Violence
- Sexual Harassment
- Women Trafficking

Readings:

- Shinde, T. (1993). Stree Purusha Tulna. In Lalitha, K., & Tharu, S. (Eds.), *Women Writing in India*, New Delhi, Oxford University Press, pp. 221-234.
- Mcdermott, R., & Hatemi, P. (2011). Distinguishing Sex and Gender. *Ps: Political Science and Politics*, 44(1), pp. 89-92.
- Kachuck, B. (1995). Feminist Social Theories: Theme and Variations. *Sociological Bulletin*, 44(2), pp. 169-193.
- Sinopoli, R., & Hirschmann, N. (1991). Feminism and Liberal Theory. *The American Political Science Review*, 85(1), pp. 221-233.
- Graham, G. (1994). Liberal Vs Radical Feminism Revisited. *Journal of Applied Philosophy*, 11(2), 155-170.



72.

LEGISLATIVE PROCEDURES IN INDIA

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
LEGISLATIVE PROCEDURES IN INDIA	PSUATL6	02	02	00	00	Pass in 10+ 2

Course Objective:

LEGISLATIVE PROCEDURES IN INDIA

The purpose of this course is to familiarize the students with the legislative activities in India both in the states and the center and to train them in skills of back-end support to the legislatures and parliamentarians through research inputs in order to strengthen the legislative business. It requires, therefore, a proper understanding of the process, procedure and working of the parliament and state legislature and the role of the legislators and the parliamentarians. Besides, the purpose of the course is also to equip the students about media monitoring which involves news analysis and their use in the legislative and policy - making activities. Apart from teaching the texts, the students would be exposed to workshops for imparting skills in providing legislative support to the parliamentarians.

Learning Outcomes:

- Students will be able to know how the bills are drafted and presented in the parliament and state legislatures and what are the stages they pass through before becoming a law.
- Students will be able to know about the role of the legislature in the parliament and what are the research inputs they need to make an effective contribution to the parliamentary debates and legislative businesses.
- The students would know how to scan and filter out media reports and use them for legislative inputs.

Unit I: Functions of Legislative Members

- How laws are made?
- What are stages and procedures of legislation?

Unit II: Legislative Communications

- Working of Parliamentary Committees

Unit III: Budget

- Budget Preparation and Passage of Budget

Reading list:-

- Kashyap, S. (2011). Our Parliament, New Delhi: National Book Trust.
- Sharma, B. K. (2018). Introduction to Indian Constitution. New Delhi: PHI Learnings.
- Hiranandani, S. (1964). Legislative Drafting: An Indian View. The Modern Law Review, 27(1), 1-8.
- Motiwal, O. P. (1974). The Principles of Legislative Drafting. Journal of Law Institute, (16), Indian Law Institute, Delhi, pp. 11-47.



73.

PUBLIC POLICY IN INDIA

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
PUBLIC POLICY IN INDIA		02	02	00	00	Pass in 10+ 2

Objective: The paper seeks to provide an introduction to the interface between public policy and administration in India. The essence of public policy lies in its effectiveness in translating the governing philosophy into programs and policies and making it a part of the community living. It deals with issues of decentralization, financial management, citizens and administration and social welfare from a non-western perspective.

UNIT: I. PUBLIC POLICY

Meaning, Definition, Characteristics and Significance

UNIT: II. PUBLIC POLICY FORMULATION

UNIT: III. PUBLIC POLICY IMPLEMENTATION

UNIT: IV. PUBLIC POLICY AND SOCIAL WELFARE

- . Meaning of Social Welfare
- . Relationship between Public Policy and Social Welfare

UNIT: V. CASE STUDIES OF PUBLIC POLICY

- . Right to Information
- . Employment: MNREGA

Reading List

- T. Dye, (1984) *Understanding Public Policy*, 5th Edition. U.S.A: Prentice Hall
- M. Howlett, M. Ramesh, and A. Perl, (2009), *Studying Public Policy: Policy Cycles and Policy subsystems*, 3rd edition, Oxford: Oxford University Press
- T. Dye, (2002) *Understanding Public Policy*, New Delhi: Pearson
- Y. Dror, (1989) *Public Policy Making Reexamined*. Oxford: Transaction Publication
- N.G.Jayal, *Democracy and The State: Welfare, Secular and Development in Contemporary India*, Oxford : Oxford University Press, 1999
- Noorjahan Bava, *Development Policies and Administration in India*, Delhi: Uppal Publishers, 2001
- Singh, S. and Sharma, P. (eds.) *Decentralization: Institutions and Politics in Rural India*. New Delhi: Oxford University Press, 2007. Jugal Kishore, *National Health Programs of India: National Policies and Legislations*. Century Publications, 2005
- K. Lee and Mills. *The Economic Of Health In Developing Countries*, Oxford: Oxford University Press, 1983
- K. Vijaya Kumar. *Right to Education Act 2009: Its Implementation as to Social Development in India*, Delhi: Akansha Publishers, 2012.
- Marma Mukhopadhyay and Madhu Parhar(ed.) *Education in India: Dynamics of Development*, Delhi: Shipra Publications, 2007
- Nalini Juneja, *Primary Education for All in the City of Mumbai: The Challenge Set By Local Actors*, International Institute For Educational Planning, UNESCO: Paris, 2001
- Surendra Munshi and Biju Paul Abraham [eds.] *Good Governance, Democratic Societies and Globalization*, Sage Publishers, 2004



74.

MANAGING ELECTION AND ELECTION CAMPAIGN

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
MANAGING ELECTION AND ELECTION CAMPAIGN	PSUBTL5	02	02	00	00	Pass in 10+ 2

Course Objective:

This course exposes students to a wide range of conceptual and practical issues and elements pertaining to electoral democracy in India. Elections and their nature have changed significantly with the support of social media and new technologies. Parties are using these mediums and techniques and adjusting to the new nuances emerging from it. Election management has become a crucial element of electoral democracy wherein parties use all their human and material resources at their disposal. This module exposes the students to the techniques of man and material resources to manage the elections.

Learning Outcomes:

- They will learn about how to file election nominations and the technical issues involved in it.
- They will be able to explain the election code of conduct including the ethics to be maintained in expenditure and elections campaign.
- They will be made aware of the role of new media and technology involved in election campaign.
- They will get to know about the required skills for media management during the elections.
- They will be able to answer what are debates on state funding of political parties in election.

UNIT I: Electoral Democracy and Management of Elections

- Electoral Democracy: A Theoretical Perspective
- How Crucial is Management of Elections?

UNIT II: Elections and Model Code of Conducts

- Model Code of Conducts: What it is?
- Knowing your Candidates

UNIT III: Management of Election Campaign

- Traditional methods of Electoral Campaign; Poster, Pamphlets
- Use of New Techniques and Methods in Election Campaign



75.
ORGANIC FARMING

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
ORGANIC FARMING	RTUATA1	02	01	00	01	Pass in 10+ 2

Learning outcomes

On completion of this course, the students would be able to

- Understand the concepts of organic farming and disseminate the knowledge about organic farming among the farmers to overcome the threat of excess use of chemical fertilizer and pesticide.
- Understand about different components of organic farming and produce organic crop.

Organic farming- meaning, concept, definition, types of organic farming and benefits of organic farming. Principle of organic farming. Scope and present status of organic farming; India and Chhattisgarh.

Components of Organic farming –organic manure, green manure, animal based manure, agro industry based manure, crop rotation, biological management, Bio-fertilizers.

Organic crop management through – integrated pest management (IPM), integrated disease management (IDM), integrated nutrient management (INM), integrated water management (IWM), integrated weed management (IWM).

Organic crop production practice in - Rice, Wheat, Pigeon pea, plantation crops like Mango and Guava.

Organic farming Certification- Policies and incentive of organic production, Agencies and institution related to organic farming, procedures of certification for organic farming.

LABORATORY COURSE BASED ON THEORY

1. To study the components of organic farming.
2. To study the production methods of organic manures.
3. To study the methods of application of organic manures.
4. To study the IPM, IDM, IMM and IWM for organic farming.
5. To study the certification process of organic farming



76.

HORTICULTURE AND LANDSCAPING

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
HORTICULTURE AND LANDSCAPING	RTUATL1	02	02	00	00	Pass in 10+ 2

Learning outcomes

On completion of this course, the students will be able to:

- Understand the knowledge about horticulture practices and its importance.
- Learn detail information of orchard establishment and management will able to disseminate this knowledge to the farmers.
- Adopt horticulture as entrepreneurship.

Horticulture: Concept, scope, definition, economic importance and classification of horticultural crops, fruit and vegetable zones of India, exports and imports opportunities, Government schemes / programs related to horticulture and landscaping.

Establishment of orchard: site selection, principles, planning and layout of orchard, tools and implements. Management of orchard-Planting systems, training and pruning, nutrient, water, weeds, and pests management in orchard trees. Cultivation practices of major fruit crops-Citrus fruits, papaya, banana, ber, Guava and Mango.

Fundamental of Floriculture, Scope and importance of floriculture in India, Importance and production technology of cut flowers and loose flowers. Production techniques of ornamental plants like rose, marigold, chrysanthemum, gladiolus, jasmine, dahlia, tuberose and gerbera.

Landscaping: Principles and components, landscape designs, Styles of garden: formal, informal and free style gardens; types of landscape: Urban landscaping, bio-aesthetic planning, eco- tourism, theme parks, indoor gardening.

Plant components for landscaping: Lawns-Establishment and maintenance, Plants-herbs, annuals, hedges, climbers and creepers, cacti and succulents, flower borders and beds, ground covers, carpet beds, bamboo groves.

77.

HERBAL PRODUCTION TECHNIQUES

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
HERBAL PRODUCTION TECHNIQUES	RTUBTL1	02	02	00	00	Pass in 10+ 2

Course outcomes

On completion of this course, the students will be able to:

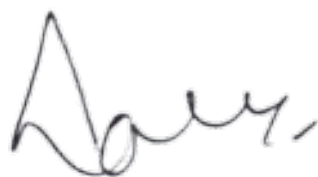
1. Aware with the vast medicinal flora and their scientific role.
2. Gain technical confidence and skills to develop entrepreneurship.
3. Understand herbal production techniques of various herbal products.

Ayurvedic dosage form – Classification, Extraction- Kwatha, Pachana, Avaleha, Bhawwan, Putapka, Fermentation- Asava & Arista, Arka, Guggulu, Ghrita, Churna, Lepa, Vati and Gutikabhasma, Lauha.

Appartus-Dolyantram, Svedaniyantram, Dhupayantram, Patanayantram, Adhaspatanyantram, Tirgakatanyantram, Vidhyadharyantum, Putas, Mahaputa, Musha, Hamspakayantram.

Utilisation and development of drugs from plants- Analgesic drugs, anti- inflammatory drugs, hypotensive drugs, antimalarial drugs, anti-cancer drugs, cardiovascular drugs, bronchodilatory drugs.

Herbal Preparations- Triphala churna, sitopaladi churna, Preparation of Avleha- Chyawanprash, Preparation of Asawas- Drakshasava, Preparation of Tooth powder, Preparation of beauty products.





78.

COUNSELLING SKILLS FOR SOCIAL WORK PRACTICE

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
COUNSELING SKILLS FOR SOCIAL WORK PRACTICE	SWUATL70	02	02	00	00	Pass in 10+ 2

Course Objective:

1. Counselling is a chance to work with a professional counsellor to make positive changes in your life.
2. Counselling can help you to sort through thoughts and feelings in a safe environment, and to find strategies to help you cope with difficult situations.

Title of Paper: COUNSELLING SKILLS FOR SOCIAL WORK PRACTICE UNIT- I	Meaning of Counseling <ul style="list-style-type: none"> • Counseling –Meaning ,Definition, goals and Objectives; counseling process, stage of counseling • Counseling situations :Developmental, preventive, facilitative, crisis; general factors and their influences on counseling
UNIT-II	Process and Principle <ul style="list-style-type: none"> • Processes of counseling • Basic Principles of Counseling
UNIT-III	Individual and Group Counseling <ul style="list-style-type: none"> • Individual counseling: Client as a person(Client system as a unit), voluntary and non-voluntary, expectation, Behavior, communication-verbal and non verbal; couple and family counseling • Counseling for group: process, advantages and disadvantages; crisis counseling with bereavement affecting communities.
UNIT-IV	Approaches and Techniques <ul style="list-style-type: none"> • Approaches to counseling: person centered, rational emotive, transactional analysis, behavioral approaches, gestalt, existential approaches, egan`s three stage model, eclectic model • Techniques of counseling: initiating contact, intact, rapport-establishing, structure, interaction. attending behavior , observation, responding, rating and its interpretation
UNIT-V	Application of Counseling <ul style="list-style-type: none"> • Counseling in Social Work Practice; Social Worker as a Counselor • Application of Counseling in various setting



79.
NGO MANAGEMENT

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
NGO MANAGEMENT	SWUATA60	02	02	00	00	Pass in 10+ 2

Objectives:

1. Develop an understanding of non-governmental organizations
2. Acquire skills and competence in managing NGOs

Course Content:

Unit I: Conceptual Framework and Historical Development

- Basic concepts: NGOs, Voluntary Action, Voluntary Organization, Civil Society Organisations Historical development of NGOs in India

Unit II: Initiating an NGO

- Formation of By-laws
- Registration of NGO

Unit III: Managing NGO.

- Record keeping, documentation, budgeting, accounting and auditing
- Staffing Capacity Building, Training and Development Organizational behaviour

Unit IV: Resource Mobilization and management

- Mobilizing human and material resources
- Fund raising and Grant-in-aid

Unit V: Project planning and execution

- Formulation of project proposals
- Project implementation
- Project appraisal -Social, Technical and Financial
- Project Monitoring and Evaluation
- Documentation

Readings:

- PRIA 2000 Defining Voluntary Sector in India: Voluntary Civil or Non-profit, New Delhi: PRIA (Unit I)
- PRIA 2001 Historical Background of Non-profit Sector in India, New Delhi PRIA (Unit I)



80.

PROGRAMME MEDIA IN SOCIAL WORK

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
PROGRAMME MEDIA IN SOCIAL WORK	SWUBTL2	02	02	00	00	Pass in 10+ 2

UNIT- I	Meaning & Concept of Programme Media <ul style="list-style-type: none"> • Programme: Meaning and purpose, Concept and significance in social work • Role of social worker in programme planning
UNIT- II	Modes of Programme Media <ul style="list-style-type: none"> • Types of Programme media: Group discussion, advertisement, flip chart, flash cards, art and craft • Interactive games and outdoor exposure • Application of program media in various settings
UNIT -III	Essentials of Programme Media <ul style="list-style-type: none"> • People-centered approach to programme media • People/target group participation in programme • Basic principles
UNIT- IV	Programme Media for Development Practice <ul style="list-style-type: none"> • Information Education and Communication - relevance, types, effective usage • IEC and Development Practice • Participatory communication: group discussion, focus group discussion
UNIT- V	Mass Communication <ul style="list-style-type: none"> • Traditional and modern means of mass communication • Propaganda and public opinion • Role of mass communication in social change. Media in social work practice; social worker as a Mediator.

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81.

SOCIAL ACTION AND SOCIAL MOVEMENTS

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
SOCIAL ACTION AND SOCIAL MOVEMENTS	SWUBTA2	02	02	00	00	Pass in 10+ 2

Learning Outcomes:

On successful Completion of the course, students will be able to:

CO1- to understand the concept and relevance of program media in social work.

CO2- To develop ability to apply tools of program media in different setting.

UNIT- I	Meaning & Concept of Programme Media <ul style="list-style-type: none"> • Programme: Meaning and purpose, Concept and significance in social work • Role of social worker in programme planning
UNIT- II	Modes of Programme Media <ul style="list-style-type: none"> • Types of Programme media: Group discussion, advertisement, flip chart, flash cards, art and craft • Interactive games and outdoor exposure • Application of program media in various settings
UNIT -III	Essentials of Programme Media <ul style="list-style-type: none"> • People-centered approach to programme media • People/target group participation in programme • Basic principles
UNIT- IV	Programme Media for Development Practice <ul style="list-style-type: none"> • Information Education and Communication - relevance, types, effective usage • IEC and Development Practice • Participatory communication: group discussion, focus group discussion
UNIT- V	Mass Communication <ul style="list-style-type: none"> • Traditional and modern means of mass communication • Propaganda and public opinion • Role of mass communication in social change. Media in social work practice; social worker as a Mediator.

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82.
AQUACULTURE

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
AQUACULTURE	ZOUATL1	02	02	00	00	Pass in 10+ 2

About the course

This course will give the students an understanding of the principles of aquaculture, including production systems, water quality, nutrition, spawning, larval culture and culture methodologies with special reference to fish, and prawn. The course will include an opportunity to conduct hands-on activities related to culture and husbandry of animals

Learning outcomes

- After completing this course the learners will be able to
- understand the aquaculture systems
 - Understand conditioning factors and how they can be manipulated
 - Describe water deputation mechanisms
 - Understand the environmental impacts of aquaculture

Theory

Unit I: Freshwater aquaculture systems

Aquaculture concept, Culture systems: Freshwater prawn culture, fish culture in paddy fields, Brackish water culture, Mariculture: Oyster culture, Crab culture, Lobster culture, mussel culture, culture of Eels, Culture of aquatic weeds. Composite fish culture: Definition and various patterns. Mixed fish farming in India. Techniques of composite culture. Culture of buffalo fish ..Culture of Catfishes. Culture of miscellaneous fishes. Cray fish culture.

Unit II: Preparation and management of fish culture ponds

Nursery ponds. Predatory and Weed fishes and their control. Fish toxicants. Fertilization. Aquatic insects and their control. Fish food organisms and their production. Supplementary feeding. Transport of fish seed and Brood fish. Causes of mortality in transport. Methods for packaging and transport. Open systems. Closed systems. Use of chemicals in live fish transport. Anesthetic drugs. Antiseptics and Antibiotics.

Unit III: Fish pathology

Parasitic infections. Fungus infections. Protozoan diseases.suryodata; Worm diseases. Non parasitic diseases. Rearing ponds, Stocking ponds. Fish breeding: Natural and artificial. Harvesting: Fishing techniques, preservation & processing of fish. Fresh water prawn culture. Introduction. Breeding characteristics. Juvenile prawn migration. Seasonal & regional distribution of seeds. Identification of juveniles. Controlled breeding. Culture: Ponds, Monoculture. Mixed culture.

Unit IV: Technologies in Fisheries development

Role of hard water in culture of Macrobrachium species. Fertilization & feeds. Pearl culture: Introduction, Pearl producing mollusks, pearl formation, collection of oysters, Rearing of oysters, insertion of nucleus, harvesting of pearls, composition & quality of pearl. Recirculation technology, Geographic Information System (GIS) technology, passive Acoustics in fisheries, Use of Information Communication Technology (ICT) in fishes: production aspects, marketing aspects.

Recommended readings

1. Jingran, V. G. (1983) Fish and fisheries of India , Hindustan pub. corp. New Delhi.
2. Hute, M. and Kahn, H. (2000) Textbook of fish culture, Blackwell Scientific Publication, Australia.
3. Srinivasulu, M., Reddy, K.R.S., Rao, S. (1999) Text book of Aquaculture, Discovery Publishing House New Delhi.
4. Yawn Mehta, Fisheries & Aquaculture Biotechnology (2011) Campus Books International, Prahalad street, Ansari Road, Durga Ganj, New Delhi.



83.

HUMAN HEALTH AND SEX EDUCATION

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
HUMAN HEALTH AND SEX EDUCATION	ZOUATA1	02	02	00	00	Pass in 10+ 2

About the course

The course is designed to address problems associated with health and sex thereby, promoting fitness and well being.

Learning outcomes

After the completion of this course, the students will be able to:

- ... understand the importance of good health.
- ... observe clean sexual habits thereby warding off sexually transmitted diseases.

Theory

Unit I: Health: Physical and spiritual

Health as a state of wellbeing, health awareness, Physical health, immunization and vaccination, healthy food, balanced diet, food supplements, proper sleep, exercise and keeping away from stress, pathogens and pollution. Reproductive health, adolescence, senescence. Prevention from mental illness and disabilities, alcoholism, tobacco addiction, de-addiction, lifestyle diseases. Spiritual health, yoga and meditation.

Unit II: Human reproductive and developmental cycle

Human reproductive system: structural details of male reproductive system, semen, hormonal control. Female reproductive system- structure of ovary, puberty, reproductive cycles and hormonal control, gestation period, hysterectomy, menopause. Events of human reproduction: Gametogenesis-spermatogenesis and oogenesis, ovulation, fertilization, embryonic development, parturition.

Unit III: Infertility and assisted reproductive techniques

Human intervention in reproduction: Contraception and birth control-barrier method, hormonal methods, natural methods, sterilization, termination of pregnancy. Infertility-male and female infertility, causes and treatment for infertility. Advanced Reproductive Technologies- IVF, GIFT, ZIFT, Donor Insemination (DI). Sperm transfer techniques. Surrogacy.

Unit IV: Sex education and prevention from Sexually transmitted diseases

Sexually transmitted diseases: Syphilis, chlamydia, trichomoniasis, gonorrhea, AIDS, Sex education: Adolescent sexual activity, teenage pregnancy, sexual harassment, sexual awareness and policies (legal aspects), lesbian and gay sex, bisexual, transgender youth, adolescent stress management

Recommended readings

1. Kothari P. (1994) Common sexual problems and solutions by, UBS Publishers and Distributors Ltd.
2. Hadley, Mac. E.. (2004) Endocrinology. (5th edition) Pearson Education, Singapore.
3. Taylor, D.J., Green, N.P.O., Stout G. W. (2005) Biological Science. (Editor R. Soper) 3rd Edition, Cambridge University Press.
4. The Complete Manual of Fitness and Well-being. The Reader's Digest Association, Inc. Pleasantville, New York / Montreal.
5. Guyton, A.C. and Hall, J.E..Textbook of Medical Physiology.

84.
ELECTONICS IN DAILY LIFE

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
ELECTRONICS IN DAILY LIFE	AECPL01	02	02	00	00	Pass in 10+ 2

Unit - I: History of Electronics: The vacuum tube era, The semiconductor revolution, Integrated circuits, Compound Semiconductor, Digital electronics Materials, Optoelectronics, Superconducting electronics, Flat-panel displays

Unit - II: Different Electronic Components / Semiconductor Components, Passive Components-Resistors: specifications and colour coding. Capacitors: Principle, specifications and colour coding. Inductors: Principle, specifications and classification, Battery, Battery holders and connectors, Fuses, Transistors, Oscillation, thyristors, Light-emitting diodes (LEDs) AC fundamentals: Generation of alternating voltages, Basic electronic functions Rectification, Amplification Using n-p-n transistor, Multimeters, MOSFETs.

Unit - III: Application of Electronics: Consumer Electronics Office Gadgets like calculators, Personal computers, Digital Camera, FAX machines, Printers, Scanners, Front Projector, etc. Home appliances Robot Vacuum Cleaner, Electric Deep Fryer Refrigerator, AC, Coffee Maker Machine, Hair dryer Water Purifier/Dispenser, Storage Devices
Advanced Consumer Electronic Devices: Smart Phones, iPod and Tablets, Wi-Fi and the Internet, barcode scanners, ATM, Dishwasher and POS terminals.

Medical Electronics: Stethoscope, Respiration Monitors Glucose meter, The Pacemaker, MRI, CT scan

Unit - IV: Industrial and Automotive Electronics: Power Windows, Electronic Control Unit (ECU), Airbag control, all vehicles etc. Meteorological and Oceanographic Electronics: Barometer: Anemometer: Anemometer Hygrometer, Data logger Smart Grid Systems Image Processing, Entertainment and Communication Electronics: Smart TVs, Set Top Boxes, Speakers, receivers etc.

Defence Application: RADAR technology, Electronic Warfare Systems, Military electronic equipments etc.

Reference Books:

9. Getting Started in Electronics by Forrest, M.Mims, Master Publishing, Inc
10. Make Electronics - Learning by Discovery by Charles Platt, Maker Media Publishers
11. Practical Electronics for Inventors, Paul Scherz, McGraw-Hill Education
12. Everyday Electronics and You: A Guide to Maintaining and Getting the Best Out of Your Everyday Electronics Devon A. Smith Kindle Edition,
13. Complete Guide to Home Appliance Repair - Evan Powel, Better Homes & Garden Books Publication.
14. A Text book of Electrical Technology Vol. 1 and 2, B.L. Thereja S. Chand & Company
15. Domestic appliances servicing, K.P. Anwer, Scholar Institute Publications.
16. Basic Electrical Engineering, M.L. Anwani, Dhanpat Rai Publication.



85.

SET THEORY AND LOGIC

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
SET THEORY AND LOGIC	AMUATA1	02	02	00	00	Pass in 10+ 2

Course Objective: The course should enable the students -

- 1) Describe memberships of sets, including the empty set, using proper notation, and decide whether given items are members and determine the cardinality of a given set.
- 2) Recognize when set theory is applicable to real-life situations, solve real-life problems, and communicate real-life problems and solutions to others.
- 3) Understand basic concept of logic and analyze the concepts of truthiness.
- 4) Working of different types of logic.
- 5) Understand different types of theory and Explore and apply key concepts in logical.

Introduction, propositions, truth table, negation, conjunction and disjunction. Implications, biconditional propositions, converse, contra positive and inverse propositions and precedence of logical operators. Propositional equivalence: Logical equivalences. Predicates and quantifiers: Introduction, Quantifiers, Binding variables and Negations.

Sets, subsets, Set operations and the laws of set theory and Venn diagrams. Examples of finite and infinite sets. Finite sets and counting principle. Empty set, properties of empty set. Standard set operations. Classes of sets. Power set of a set.

Difference and Symmetric difference of two sets. Set identities, generalized union and intersections. Relation: Product set, Composition of relations, Types of relations, Partitions, Equivalence Relations with example of congruence modulo relation, Partial ordering relations, and n-ary relations.

Books Recommended:

1. R.P. Grimaldi, *Discrete Mathematics and Combinatorial Mathematics*, Pearson Education, 1998.
2. P.R. Halmos, *Naive Set Theory*, Springer, 1974.
3. E. Kamke, *Theory of Sets*, Dover Publishers, 1950.

Course Outcomes: This course will enable the students to -

- 1) Understand basic concept of logic.
- 2) Analyze the concepts of truth ness.
- 3) Study of different types of sets.
- 4) Learn about relations.
- 5) Theoretical concepts of mathematics.



86.

RURAL HEALTH CARE

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
Rural Health Care	RTUAT2	02	02	00	00	Pass in 10+ 2

Course outcomes

On completion of this course, the students will be able to:

1. Aware about the health problem, their causes and sanitation techniques.
2. Understand awareness programs for sanitation and health improvement.
3. Aware about the rural health management.

Rural Health: Understanding of health, epidemiology, natural history of diseases, determinants of health, indicators of health.

Rural Health and Nutrition Status: Health and nutrition linkages and status, dietary intake, trends in health and nutrition, factors influencing health and nutrition status.

Rural Health and Communicable Diseases: Understanding communicable diseases, different communicable diseases and etiology of – respiratory infection, water and food borne infections, contact diseases, arthropod borne diseases and zoonosis. Characteristics of common communicable diseases. Prevention and control of communicable diseases.

Rural Health Management: Health care services- (a) general services, (b) Maternal and child health services (c) services provided under national health program

Rural Sanitation and hygiene: Government Schemes like, Swachchha Bharat Mission, Nirmal Bharat Abhiyan and Amrut Mission.

87.

PUBLIC ADMINISTRATION

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
Public Administration		02	02	00	00	Pass in 10+ 2

Objective: The course provides an introduction to the discipline of public administration. This paper encompasses public administration in its historical context with an emphasis on the various classical and contemporary administrative theories. The course also explores some of the recent trends, including feminism and ecological conservation and how the call for greater democratization is restructuring public administration. The course will also attempt to provide the students a comprehensive understanding on contemporary administrative developments.

UNIT: I. PUBLIC ADMINISTRATION AS A DISCIPLINE

- . Meaning, Definition, Nature and Significance
- . Scope
- . Public Administration and Private Administration

UNIT: II. ORGANISATION: PRINCIPLE OF ORGANISATION

- . Hierarchy
- . Unity of Command
- . Coordination
- . Delegation
- . Centralization & Decentralization

UNIT: III. LEGISLATIVE CONTROL OVER ADMINISTRATION

UNIT: IV. EXECUTIVE CONTROL OVER ADMINISTRATION

UNIT: V. JUDICIAL CONTROL OVER ADMINISTRATION

Reading List

D. Rosenbloom, R. Kravchuk, and R. Clerkin, (2009) *Public Administration: Understanding Management, Politics and Law in Public Sector*, 7th edition, New Delhi: McGrawHill

M. Bhattacharya, (2008) *New Horizons of Public Administration*, 5th Revised Edition, New Delhi: Jawahar Publishers

Shafritz, J. and Hyde, A. (eds.) *Classics of Public Administration*, 4th Edition, Forth Worth: Hartcourt Brace, 1997

N. Henry, *Public Administration and Public Affairs*, 12th edition, New Jersey: Pearson, 2013

Rumki Basu, *Public Administration: Concepts and Theories* Sterling Publishers, New Delhi 2014

B. Chakrabarty, And M. Bhattacharya, (eds.) *Public Administration: A Reader*, New Delhi: Oxford University Press, 2003

Manoj Sinha, (2010), *Prasashan Evm Lokniti*, New Delhi: Orient Blackswan.

Sahni, P. & Vayunandan, E. (2010) *Administrative Theory*, New Delhi: Prentice Hall of India.

Sapru, R.K. (2013). *Administrative Theories and Management Thought* (Third Edition), Delhi: Prentice Hall of India



88.
YOGIC SCIENCE

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
YOGIC SCIENCE	YOGA	02	02	00	00	Pass in 10+ 2

Course Objective: To become certified to teach yoga at the most basic level. The course deals with both abstract and practical aspects of Yoga. To develop, promote and propagate the philosophy, science and art of Yoga.

Course Outcomes: At the end of the course the students will be:-

1. To enable the student to understand the benefits of yoga.
2. To acquaint, student with the practical knowledge of Yogasana, Kriyas, Bandhas, Mudras and Pranayama.
3. To enable student to prepare the Yoga programme.
4. To enable student to become competent and committed professionals willing to perform as Yoga trainer.

• **INTRODUCTION OF YOGA:**

- Meaning and Definition of Yoga
- Aims of Yoga
- Yoga in the Bhagavadgita - Karma Yoga, Raja Yoga, Gyan Yoga and Bhakti Yoga

• **THE ASTHANGA YOGA:**

- Yama, Niyama, Asana, Pranayama, Pratyahara, Dharana, Dhyana & Samadhi.

• **PRANAYAMA**

- Meaning of Pranayama
- Types of Pranayama
- Phases of Pranayama: Purak (inhalation), Kumbhak (retention) Rechak (exhalation)

• **KRIYAS:**

- Meaning of Kriyas
- Types of Kriyas
- Benefits of Kriyas

• **MUDRAS:**

- Hasth Mudra: Gyan Mudra, Vayu Mudra, Aakash Mudra, Shunya Mudra, Prithvi Mudra, Prithvi Mudra, Varun Mudra, Dhyan Mudra, Chin Mudra.

• **BANDHAS:**

- Jalandhara Bandha, Uddiyana Bandha and Moolabandha



Essential Readings:

1. D.P. Tiwari - Asana why and how, Kaivalyadharm SMYM samiti, Lonavala, 2012.
2. M.L. Gharote - Guidelines for Yogic Practices, Medha Publication, Lonavla.
3. Swami SatyanandaSaraswati - Asan, Pranayama, Mudra, Bandha, Yoga publication trust, Munger, 2006.
4. Pt. Shri Ram Sharma- PragyAbhiyanka Yoga Vyayam, BrahmvarchasshodhSanshan, Shantikunj, Haridwar, 1998.

Suggested Readings:

1. B.K.S. Iyengar - Light on Yoga, Harper Collins publisher, New Delhi, 2012.
2. B.K.S. Iyengar - Light on Pranayama, Harper collins publisher, New Delhi, 2012.
3. Swami Kuvliyanand - Asana, Kaivalyadharm SMYM samiti, Lonavala, 1993.
4. Swami Kuvliyanand- Prnayama, Kaivalyadharm SMYM samiti, Lonavala, 2009.

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89.

VEDIC WISDOM & LIFE SKILLS

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
VEDIC WISDOM & LIFE SKILLS	SW-YCC	02	02	00	00	Pass in 10+ 2

Vedic Wisdom & Life Skills

A Value Added Course

(Minimum 30 hours / 2 credit Course)

- Department: Zoology
- Name of the Course: Vedic wisdom and life skills
- Nature of Course: Value-Added Course
- Mode of Course: Offline
- Number of Seats: No limit
- Eligibility Criteria for Admission: All registered regular students enrolled for any course in GGV

Introduction and relevance of the course:

Objectives of the course:

Learning outcome of the course: After successful completion of the course, the students will understand the fundamental principles imbibed in our rich Vedic wisdom and effectively apply this knowledge in their daily lives. Students will also learn the importance of Human values & Ethics and apply the same in their personality development.

Number of lectures: 15 (One lecture of 2hr every week)
Number of practical's : Practical assignments will be given towards the end of this course
Syllabus: Annexure I
Suggestive Readings: Annexure I
Course Coordinator (Name & Designation) Dr. Rohit Seth, Associate Professor of Zoology, GGV

Evaluation Criteria: Continuous & progressive evaluation
Exam format: Multiple Choice Questions & Assignment

Fee for the Course: Rs. 2000/- per student (includes study material & books)



Module(s) & Content

Module 1: Vedic Wisdom

- Historical perspective
- Actual process of acquiring Vedic knowledge
- Relevance of this study in modern times

Module 2: Discover your inner self

- Science of the soul – Who am I?
- Evidence of soul's existence
- Law of karma – why do bad things happen to good people?

Module 3: Mastermind behind the mysterious universe

- God – Evidence from Shastras
- God or Gods – One God or many gods?
- Aim of life – to love and serve.

Module 4: Life skills

- Mind – Friend or Enemy?
- Meditation – Art of conquering restless mind
- Power of Habits – Addictions
- Time Management
- How to study effectively

Module 5: Behavioral Science

- Modes of nature – Goodness, Passion, and Ignorance
- Family relationships and friendship – Role of an ideal - father, mother, son, daughter, friend, etc.
- Courage and consideration – maintaining a balanced lifestyle
- Ethics – Honesty, morality, and integrity
- The 7 habits of highly effective people

References:

- Bhagavad Gita – *as it is* by HDG A.C. Bhaktivedanta Swami Prabhupada, Founder-Acharya of ISKCON
- Basics of Bhagavad Gita – a thematic study of Bhagavad Gita by HDG A.C. Bhaktivedanta Swami Prabhupada
- The 7 Habits of Highly Effective People – by Stephen R Covey
- Recommendation: www.futurelearn.com/courses/improving-study-techniques by University of Groningen (Free Course)

90.

BAMBOO WORK ARTISAN

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
BAMBOO WORK ARTISAN	HCS/Q8702	02	02	00	00	Pass in 10+ 2



Handicrafts and Carpet
Sector Skill Council

Qualification Pack



N-S-D-C
National Skill Development
Corporation
Transforming the skill landscape






Bamboo Work Artisan

Electives: Bamboo Basket Making/ Bamboo Mat Weaving/ Bamboo Utility Handicraft Assembling

QP Code: HCS/Q8702

Version: 2.0

NSQF Level: 3

Handicrafts and Carpet Sector Skill Council || OCF, Plot No. 2, Pocket 9, Sector B, Vasant Kunj
New Delhi - 110070

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Course Outcomes:

1. Understand the work output requirements, targets, performance indicators and incentives.
2. Deliver quality work on time and report any anticipated reasons for delays and handover Completed.

Contents

HCS/Q8702: Bamboo Work Artisan	
Brief Job Description	
Applicable National Occupational Standards (NOS)	
Compulsory NOS	
Elective 1: Bamboo Basket Making	
Elective 2: Bamboo Mat Weaving	
Elective 3: Bamboo Utility Handicraft Assembling	
Qualification Pack (QP) Parameters	
HCS/N9901: Coordinate with colleagues and work as a team	
HCS/N9902: Maintain Safe and Healthy Work Environment	
HCS/N9903: Maintain Personal Hygiene	
HCS/N8711: Carry out preparation of bamboo slivers	
HCS/N8712: Carry out weaving & twining of bamboo slivers to achieve the final product as per requirement	
HCS/N8713: Carry out finishing, varnishing, drying & storage of bamboo basket	
HCS/N8714: Contribute to achieve quality bamboo basket making	
HCS/N8705: Carry out basic pre-loom operations: Denting and attaching the warp on the loom ..	
HCS/N8706: Carry out basic weaving operations: Shedding/ Picking/ Battening to weave mats comprising of basic weaves- Plain and Twill using hand operated loom	
HCS/N8707: Contribute to achieve quality in bamboo mat weaving	
HCS/N8715: Carry out cutting & processing of materials as per given size & shape	
HCS/N8716: Carry out assembling different materials	
HCS/N8717: Contribute to achieve quality bamboo utility handicraft assembling	

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91.

FITNESS TRAINER

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
FITNESS TRAINER	SPF/Q1107	02	02	00	00	Pass in 10+ 2



Model Curriculum

QP Name: Fitness Trainer

QP Code: SPF/Q1107

QP Version: 1.0

NSQF Level: 4

Model Curriculum Version: 1.0

Sports, Physical Education, Fitness and Leisure Sector Skill Council
207, DLF Tower, Galleria Mall, Mayapuri Extension, Delhi

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Training Outcomes

At the end of the program, the learner will be able to:

- Prepare workout stations for use.
- Conduct regular checks to identify malfunctioning equipment and report the same.
- Guide clients to choose the correct equipment and machines required for their specific workout.
- Demonstrate correct forms, posture, and techniques to make exercise effective and injury free.
- Promote a co-operative environment amongst the gym user to avoid any conflicts.
- Follow safety protocols for injury prevention and medical emergency.
- Maintain hygiene and sanitation at the gym.

Module 1: Introduction to fitness training.....

Module 2: Prepare workout area and gym equipment.....

Module 3: Guide and monitor clients during the workout.....

Module 4: Maintain hygiene and sanitation.....

Module 5: Identify potential risks and respond to medical emergencies.....

Module 6: Create an environmentally sustainable workplace.....

Module 7: On-the-Job Training.....

92.

OCCUPATIONAL STANDARD FOR BEAUTY & WELLNESS

Course Title	Course Code	Credits	Credit distribution of the course			Eligibility criteria
			Lecture	Tutorial	Practical/ Practice	
OCCUPATIONAL STANDARD FOR BEAUTY & WELLNESS	BWS/Q3003	02	02	00	00	Pass in 10+ 2





QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR Beauty & Wellness

What are occupational standards(OS)?

- OS describe what individuals need to do, know and understand in order to carry out a particular job role or function
- OS are performance standards that individuals must achieve when carrying out functions in the workplace, together with specifications of the underpinning knowledge and understanding

Contact Us:
Beauty and Wellness Sector Skill Council
Office no. 247-248, DLF South Court, Saket New Delhi- 110017
P: +91 1140342940/42



Contents

1. Introduction and Contacts.....
2. Qualifications Pack.....
3. Glossary of Key Terms
4. OS Units.....
5. Annexure: Nomenclature for QP & OS
6. Assessment Criteria.....

Introduction
Qualifications Pack- Personal Trainer

SECTOR: BEAUTY & WELLNESS

SUB-SECTOR: FITNESS & SLIMMING

OCCUPATION: FITNESS SERVICES

REFERENCE ID: BWS/Q3003

ALIGNED TO: NCO-2015/3423.9900

Brief Job Description: The Personal Trainer is responsible to plan, demonstrate, and monitor exercises performed by the members. The trainer collects information, plans gym programmes, monitors client progress and focuses on individual assigned clients in meeting their fitness goals through effective motivation and continuous adaptation.

Personal Attributes: This job requires the individual to be well versed with the rules and regulations applicable, such as the Membership Rules, membership types (Full Access/limited access). He needs to be tactful, service oriented and a stickler for rules





National Occupational Standard	Unit Code	BWS/N9001
	Unit Title (Task)	Prepare and maintain work area
	Description	Prepare the equipment, products and work area ahead of service delivery to ensure the efficiently and effectiveness of conducting treatments considering the standards of operation of the organization
	Scope	This unit/task covers the following: <ul style="list-style-type: none"> Prepare and maintain work area
	Performance Criteria(PC) w.r.t. the Scope	
	Element	Performance Criteria
	Prepare and maintain work area	To be competent, the user/individual on the job must be able to: <ul style="list-style-type: none"> PC1. ensure that environmental conditions are suitable for the client and the treatment to be carried out in a hygiene and safe environment PC2. select suitable equipment and products required for the treatment PC3. set up of equipment and prepare the products for treatments in adherence to the organization procedures and product/ equipment guidelines PC4. place the products in the trolley for the treatment PC5. sterilize, disinfect and place the tools on the tray PC6. dispose waste materials in adherence to the organization's and industry requirements PC7. store records, materials and equipment securely in line with the organization's policies
	Knowledge and Understanding (K)	
	A. Organizational Context (Knowledge of the organization and its processes)	The user/individual on the job needs to know and understand: <ul style="list-style-type: none"> KA1. organization's standards of performance and sequence of services KA2. range of services and products offered by the organization KA3. health and safety requirements in the organization
	B. Technical Knowledge	The user/individual on the job needs to know and understand: <ul style="list-style-type: none"> KB1. types of products, materials and equipment required for the treatment KB2. process and products to sterilize and disinfect equipment/ tools KB3. manufacturer's instructions related to equipment and product use and cleaning KB4. applicable legislation relating to the workplace (for example health and safety, workplace regulations, use of work equipment, control of substances hazardous to health, handling/storage/ disposal/ cautions in the use of products, fire precautions, occurrences, hygiene practice, disposal of waste, environmental protection)

Day



National Occupational Standard

Unit Code	BW5/N3003
Unit Title (Task)	Carry out health screening and fitness assessment of the client
Description	Deploy right methodology and equipment to assess the health and fitness level of the client and identify his/ her preliminary fitness needs
Scope	This unit/task covers the following: <ul style="list-style-type: none"> Conduct health screening of the clients and their fitness assessments
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Conduct health screening of the clients and their fitness assessments	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. build strong rapport with the clients</p> <p>PC2. collect data like lifestyle, time investment, medical background, exercise history etc.</p> <p>PC3. ensure adequate communication to the clients in terms of maintaining confidentiality of their personal data collected</p> <p>PC4. discuss in various lifestyle preferences and their impact on client's health & fitness status as well as the benefits from an exercise programme</p> <p>PC5. basis client's exercise preferences and lifestyle, identify the barriers to clients achieving their exercise goals</p> <p>PC6. finalize the short and long-term fitness goals of the client</p> <p>PC7. basis the client's fitness requirements, suggest the appropriate exercises</p> <p>PC8. identify the strategies to prevent drop out or relapse</p> <p>PC9. discuss in detail with clients, the relationship of fitness assessment outcomes with exercise plan; also discuss the kind of information about a person's anatomy will be collected to perform fitness assessment</p> <p>PC10. ensure the working and availability of equipment to carry out the planned assessments</p> <p>PC11. conduct fitness assessments which primarily include anthropometrics (i.e. BMI, waist to hip ratio etc.), body composition, cardiovascular fitness and capacity, muscular strength, etc.)</p> <p>PC12. understand the various person specific concerns/ problems and related safety considerations while conducting fitness assessments</p> <p>PC13. analyze the fitness assessment outcomes to provide recommendations for the exercise plan</p> <p>PC14. refer to the superior in case there are any concerns or requirements of the clients which require expert advice</p>
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the organization and its processes)	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. the organization's standards of performance and sequence of services</p> <p>KA2. the range of services and products offered by the organization</p> <p>KA3. the product and service costs for the services and products offered in the organization</p> <p>KA4. the health and safety requirements in the organization</p>

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