

Title:	Basics of Tally	
Duration:	30 Hours	
Course Outcome	<ul style="list-style-type: none"> • Posses the skills of Computerised Accounting • Posses the skills to operate Tally Software • Can get Employed with Tally Data Entry Operator 	
Course Objective	Accounting with Tally is not just theoretical program, but it is the most popular accounting software used worldwide to serve the accounting purpose in businesses, This Course aims to train students to learn basics of Accountancy, its principles, concepts, conventions, recording procedures, final accounts etc. The course is designed to provide practical skills on Computerised Accounting Systems using Tally Software.	
		Hours (30)
Course Content:	1. Fundamentals of Accounting Types of Account, Rules of Accounting, Accounting Principles, Concepts and conventions Transactions,	02
		02
	2. Introduction to Tally and Company Information Company Features, Configuration, Getting functions with Tally.ERP9, Creation / setting up of a company in Tally	02
		02
	3. Creation of Groups and Ledger Accounts Creation/alteration of single & multiple Groups Creation/alteration of single & multiple Ledgers	06
		02
	4. Voucher Type and Voucher Entry – Part I Different Voucher Types Creation and Alteration of Voucher Types	02
		06
		02
	5. Practice Session	04
	6. Voucher Entry – Part II Voucher Entries Invoicing	
	7. Closing Entries and adjustments	
	8. Practice Session	
	9. Debit Note, Credit Note and B. R. Statement	
	10. Display, Print & Report	
Reference Books	1. Tally ERP 9 Training Guide – By Ashok K Nandani, PBPPublication 2. Tally Essential Level 1 – By Tally Education Pvt. Ltd., Sahaj Enterprise	

Title:	GST Beginners Course	
Duration:	30 Hours	
Course Outcome	1. Student will be equipped with the knowledge of basic concepts of goods and service tax, CGST, SGCT, IGST, classification of goods and valuation rules. 2. Student will learn the basic procedures under GST incorporating the registration, filing of returns and payment of tax.	
Course Objective	• Understand various concepts of Goods & Service Tax. Gain an insight on the recording and analyzing the transactions for compliance under GST. To be familiar with the technology and the flow of return filing under GST.	
		Hours(30hrs)
Course Content	1) Complete understanding of registration on GST Portal independently	6hrs.
	2) Determining the time and place of supply	5hrs.
	3) Different types of GST	9hrs.
	4) Compute GST liability and e-payment after generating Challans from GST portals	10hrs.

Value Added Course: Introduction to MS WINDOWS

Offered By: BCA Department



2023

**Udayanath (Autonomous) College of Science and
Technology, Adaspur, Cuttack**

Course Content MS WINDOWS

COMPUTER BASICS

- Computer Basic, Creating Folder, Paint
- Directories, input units, Output unit
- Central Processing Units,
- What is hard ware, what is Software?
- Windows short cut keys

MS WORD

Module 1: Text Basics • Editing Text: • Find & Replace

Module 2: Text Formatting and saving file • Formatting Text: • Font Color • Change the Text Case • Line spacing, Paragraph spacing • Shading text and paragraph •

Module 3: Working with Objects • Columns and Orderings - To Add Columns to a Document • Change the Order of Objects • Page Number, Date & Time • Inserting Text boxes • Inserting Word art • Inserting symbols • Inserting Chart

Module 4: Header & Footers • Inserting custom Header and Footer • Inserting objects in the header and footer • Add section break to a document

Module 5: Working with bullets and numbered lists • Multilevel numbering and Bulleting • Creating List • Customizing List style • Page bordering • Page background

Module 6: Tables • Working with Tables, Table Formatting • Table Styles • Alignment option • Merge and split option

Module 7: Styles and Content • Using Build- in Styles, Modifying Styles • Creating Styles, Creating a list style • Table of contents and references • Adding internal references • Adding a Footnote • Adding Endnote

Module 8: Merging Documents • Typing new address list • Importing address list from Excel file • Write and insert field • Merging with outlook contact • Preview Result • Merging to envelopes • Merging to label • Setting rules for merges • Finish & Merge options

MS EXCEL

Module 1: Introduction to Excel • Introduction to Excel interface • Understanding rows and columns, Naming Cells • Working with excel workbook and sheets

Module 2: Formatting excel work book

Module 3: Perform Calculations with Functions • Creating Simple Formulas • Setting up your own formula • Date and Time Functions, Financial Functions • Logical Functions, Lookup and Reference • Functions Mathematical Functions • Statistical Functions, Text Functions.

Module 4: Sort and Filter Data with Excel • Sort and filtering data • Using number filter, Text filter • Custom filtering • Removing filters from columns

Module 5: Create Effective Charts to Present Data Visually • Inserting Column, Pie chart etc. • Create an effective chart with Chart Tool • Design, Format, and Layout options • Adding chart title • Changing layouts • Chart styles • Editing chart data range • Editing data series • Changing chart

Module 6: Analyze Data Using PivotTables and Pivot Charts • Understand PivotTables, Create a PivotTable • Framework Using the PivotTable and PivotChart • Create Pivot Chart from pivot Table. • Inserting slicer • Creating Calculated fields

Module 7: Protecting and Sharing the work book • Protecting a workbook with a password • Allow user to edit ranges • Track changes • Working with Comments • Insert Excel Objects and Charts in Word Document and Power point Presentation.

MS POWERPOINT

Module 1: Setting Up PowerPoint Environment:

Module 2: Creating slides and applying themes

Module 3: Working with bullets and

Module 4: Working with Objects

Module 5: Hyperlinks and Action Buttons

Module 6: Working With Movies and Sounds

Module 7: Using SmartArt and Tables Module 28: Animation and Slide Transition

Module 9: Using slide Master

Module 10: Slide show option

Value Added Course

Course Name

**Climate
Change and
Sustainability**

Duration:
30 hrs

Offered by:

Department of Sociology



Udayanath (Auto) College of Sc. & Tech.

Prachi Jnanapitha, Adaspur, Cuttack, 754011

Value Added Course : Department of Sociology

Climate Change and Sustainability

The Importance of the Course:

Problems of Climate change and questions about a sustainable future concerns all of us, and it is a task for all of us and at different levels. Therefore, the SDGs have a major focus on Localization and Coproduction as important elements of the local architecture of the SDGs, and a “credible means of its implementation”. Localization involves embedding it in the vernacular epistemologies and local sociologies at the grassroots and empowering communities to stimulate a bottom-up change to drive the SDGs through local co-production. Results have to be coproduced by various players and at different levels. Thus, educational institutions (Schools, Colleges, and Universities) have a very important role to steer the process by creating a “critical mass” of students empowered with the cognitive capacities and behavioral orientations as “ecological citizens”, who, in turn, will play a leadership role in the community as change agents.

Design of the Course:

The course is intended for an audience from various academic backgrounds, and is designed for an interdisciplinary group of students. Thus, it is a course where passionate and committed students of diverse backgrounds and perspectives are welcome. It takes a “think globally, act locally” approach to inspire active ecological citizenship.

Course Objectives:

The course will help students understand the problems of climate crisis, its various dimensions, causal factors, their impacts, policy approaches and frameworks, action plans for possible solutions. Thus, the course is intended to:

- i. Deepen the understanding and awareness of students about the Climate crisis and the debates about a sustainable future
- ii. Impart the students the learning to be able to understand what it takes to really make a difference in the world and what they need to do in order to make a difference
- iii. Promote Leadership, Civic Engagement and Responsibility: Create a critical mass of students and youth leaders equipped with the motivation, knowledge, skills and capacities to

play a leadership role within the college, and in their communities to inspire wider debates and action at the local level to address the problems of the climate crisis.

iv. Build up a nucleus of environmental volunteers to engage in effective local collective action driving innovative sustainability and climate solutions making a shift to a green economy toward a just, inclusive and sustainable future.

Course outline:

UNIT I -The Anthropocene and the Anthropogenic Climate crisis: Globalwarming, Biodiversity Loss, Resource depletion, Carbon Footprint, Ecosystems services.

UNIT II - Revisiting the Development Paradigm: Historical and Epistemological developments; Western Enlightenment and Man-Nature Dualism; Anthropocentrism as a worldview; Economy and Nature.

UNIT III - The Climate Debates: The IPCC and the UN Framework Convention on Climate Change, the Kyoto Protocol, Paris Agreement, and Other International Conferences on Climate Change, North-South divide in Climate Negotiations.

UNIT IV - Approaches to Sustainability: Weak sustainability vs Strong sustainability, sociotechnocratic and Social Ecological Approaches, Deep Ecology, Regenerative sustainability.

UNIT V -Climate Action: Repairing the Damage and Building a Better Future, Sustainability Development Goals (SDGs), Policy Development, Social change, Technological innovation vs. Social mobilization.

UDAYANATH (AUTO.) COLLEGE OF SCIENCE & TECHNOLOGY

DEPARTMENT OF BOTANY

VALUE ADDED COURSE: - MUSHROOM CULTIVATION

DURATION: 30

UNIT 1- Introduction, history, Nutritional and medicinal value of edible mushrooms. Types of edible mushroom *Volvariella volvacea*, *Pleurotus citrinopileatus*.

UNIT 2-Cultivation Technology and factors affecting the mushroom bed preparation: Substrates, composting technology, polythene bags, containers, culture rack, sprayer, pure culture, spawn preparation, mushroom bed preparation, low-cost technology, commercial unit. Picking and collection.

UNIT 3- Storage and nutrition: Short and long-term storage. Nutrition proteins, amino acids, mineral elements, fibre content.

UNIT 4-Preparation of food and flavours from mushroom. Regional and National research centres. Marketing of produce.

Udaynath Autonomous college of science and technology

Department of Botany

Value added course

KITCHEN GARDEN

Duration:30 Hours

Unit I

Gardening tools, size of kitchen garden, purpose, kitchen garden site, preparation, containers.

Unit II

Soil types, Types of Soil, Soil capacity, soil pH. Loam, pH, Water holding farmyard manure, vermicompost, compost, cocopeat, vermiculite, perlite, clay balls, potting mixture.

Unit III

Seed, structure types, seed viability, seed germination, nursery, transplanting, study of cultivation of different vegetables tomato, green chillies, brinjal, lady's finger, onion, garlic, spinach, fenugreek.

Unit IV

Kitchen garden for herbs: mint, thyme, basil, coriander, celery, holy basil, lemon grass, exotic vegetables: broccoli, hydroponics, aquaponics, Sustainable gardening, recycling, production for self, business plan, marketing.

Value Added Course
Department of Chemistry
Syllabus Of
NANO TECHNOLOGY

UNIT-1-(Carbon Nanotube & Its Properties):-

1. Introduction
2. Carbon Nanotube, Synthesis, Integration and Properties
 - a) Patterned growth of Nanotubes
 - b) Electrical properties & interplay with mechanical & chemical properties.
 - c) Interactions with chemical species
 - d) Functionalization & Interfacing with Biological System

UNIT-2-(Material Aspects of Nano Structures):-

1. Introduction
2. Structure & Composition
3. Surface
4. Optical Properties
 - a) Absorption
 - b) Photoluminescence
 - c) Raman Scattering
 - d) FTIR
- 5) Electronic Structures

UNIT-3-(Nano Science):-

1. Introduction
2. Nano Science & Its Technology
 - a) Colloidal Particles
 - b) Energy Band-Structure for Bulk & Nano Structured semi conductors
 - c) Nano Engineering of new generation small fuel cells
 - d) Nano Battery
 - e) BIO-Sensor for Hg(Mercury) -Detection

Outcomes:-

1. UV Sensors
2. Core/Shell temperature sensor
3. Q Dot-DNA Biosensors
4. Au Cluster Glucose Biosensors for Diabetes
5. Au Cluster Alcohol Sensor
6. Nano Electronic devices

Retail Marketing

Value Added Course

Time: 30 Hours

Unit I:

(8 Hours)

An Overview Of Retailing, Types Of Stores, Product Retailing VS Service Retailing, Non-Store Retailing, Retail Strategy, Achieving Competitive Advantage And Positioning Retailing Environment, Legal, Social, Economic, Technological Issues, Trend In The Indian Retailing Industry.

Unit II:

(8 Hours)

Retail Store Location And Layout, Country Or Region Analysis, Trade Area Analysis, Site Evaluation And Selection, Store Design And Layout, Comprehensive Store Planning, Exterior Design And Layout, Interior Store Design And Layout, Interior Design Elements.

Unit III:

(7 Hours)

Planning Merchandise Needs And Merchandise Budgets, Methods For Determining Inventory Evaluation, Assortment Planning, Buying And Vendor Relations, Merchandise Pricing, Price Strategy, Psychological Pricing, Mark-Up And Mark-Down Strategies.

Unit IV:

(7 Hours)

Communicating With The Retail Customer, Retail Promotion Mix, Advertising, Sales Promotion, Publicity, Retail Selling Process, Retail Data Base, In-Store Customer Service. Recent Trend In Retail Marketing: Online Retailing.

DEPARTMENT OF COMPUTER SCIENCE
U.N. AUTONOMOUS COLLEGE, ADASPUR, CUTTACK



VALUE ADDED COURSE
CODE- VAGRC
GREEN COMPUTING

DURATION 33 Hours

Green Computing course will help students to be environmentally responsible and eco-friendly use of computers and their resources. It is the study of designing, manufacturing, engineering, using and disposing of computing devices in a way that reduces their environmental impact.

Expected Learning Outcomes:

At the end of the course learners will be able to

- Describe the concepts of how to manage the green IT with necessary components.
- Select hardware and software to facilitate more sustainable operation.
- Relate the green computing practices to save energy.
- Find the use of IT in relation to environmental perspectives.
- Explain the issues related with green computing.
- Identify the various laws, standards and protocols for regulating green IT.

SYLLABUS

UNIT I GREEN IT: An Overview (8 Hrs)

Green IT fundamentals - Environmental Impacts of IT - Green IT standards - Applying IT for enhancing environmental sustainability.

UNIT II GREEN DEVICES AND HARDWARE (8 Hrs)

Life cycle of a device or hardware - Reuse, Recycle and dispose. Green software - Energy saving software techniques, Green information systems, evaluating software impact to platform power.

UNIT III GRID FRAMEWORK (8 Hrs)

Green grid framework - Materials recycling - Green data center - Virtualization of IT systems - Inter-organizational enterprise activities and Green issues.

UNIT IV MANAGING GREEN IT (9 Hrs)

Implementation of Green IT, Information Assurance and communication - Green Enterprise transformation roadmap - Green compliance. UNIT V LAW, STANDARDS AND PROTOCOLS 9 Regulatory environment and IT manufacturers, Non regulatory government initiatives, Green building standards, Green data centers.

REFERENCES

1. Woody Leonhard, Katherine Murray, —Green Home computing for dummies, August 2012.
2. San Murugesan, G.R. Gangadharan“Harnessing Green IT Principles and Practices”,Wiley Publication, ISBN:9788126539680.
3. Alin Gales, Michael Schaefer, Mike Ebbers, —”Green Data Center: steps for the Journey”, Shroff/IBM rebook, 2011.

**DEPARTMENT OF COMPUTER SCIENCE,
U.N. AUTONOMOUS COLLEGE, ADASPUR, CUTTACK**



**CODE-VADCA
PGDCA**

DURATION 30 Hours

COURSE OUTCOMES/OBJECTIVE:

1. To introduce students to:
 - > Computer fundamentals, Hardware, Software, Operating system.
 - > Features of word processing, presentation tool and spreadsheets.
2. To enable students to apply RDBMS knowledge of SQL and MYSQL.
3. To introduce students to:
 - > Concept about Internet, Networking
 - > Concept of Web Designing.
 - > Use of Tally.

GOAL:

PGDCA course provides detailed knowledge of the domain and offers job opportunities like web developer, web designer, computer language programmer, computer programmer, software developer, ethical hacker and more.

SYLLABUS

Unit	Title	Details of Topic	Duration(Hrs)
Unit I	Computer Fundamentals and PC Software	Introduction to Computers, Computer Organization Operating Systems (Dos, Windows, Linux, etc.) Office Suite (Microsoft Office, Excel, PowerPoint.)	06
Unit II	Programming in C	Basics of C Programming, Control Structures, Functions and Pointers, Arrays and Strings, Structures and Unions	06
Unit III	Computer Networks	Introduction to Computer Networks, OSI Model, TCP/IP Protocol Suite, Networking Devices and Security	06
Unit IV	Internet, Web Designing (HTML, DHTML, XML)	Introduction to Scripting Languages, Web Designing & Uses of Internet	06
Unit V	DBMS, Tally	RDBMS Using Oracle(DDL, DML, TCL), Computerised Accounting with Tally	06

**Reference Books: Fundamentals of Computers, Paperback by Reema Thareja, Oxford University. Press.
Computer Fundamentals- 6th Edition, C In Depth. S.K.Srivastava/Deepali Srivastava.**

**DEPARTMENT OF COMPUTER SCIENCE,
U.N. AUTONOMOUS COLLEGE, ADASPUR, CUTTACK**



VALUE ADDED COURSE

CODE- VACPO

C PROGRAMMING

DURATION 34 Hours

The course “C Programming”, deals with the fundamental concepts and terminology of computer programming. We provide you with an easy step-by-step guidance to systematically learn programming in C. This course starts with a proper introduction to the programming methodology and algorithm design. This will enable students to develop the skill to logically solve the assignments using C languages.

Overall Objectives:

- To develop a strong foundation for the fundamental principles of Problem Solving using computers
- To learn the concept of programming
- To study C Programming language
- To equip the students to write programs for solving simple computing problems using C language as a tool.

Expected Learning Outcomes:

At the end of the course student will be able to:

- Explain the fundamental process of problem solving using computers
- Design algorithmic solutions for simple computing problems
- Write reliable C programs for given algorithms.
- Design, implement, test and debug programs that use different data types, such as simple variables, strings, arrays, pointers and structures
- Write C programs for simple applications using files

SYLLABUS

UNIT 01:

THE ART OF PROGRAMMING METHODOLOGY (9 Hrs)

Part A: Problem Solving – Flow Chart for Structured Programming – Program Charts – System Charts – Variables, data names, programming statements – Flow Chart Symbols – Terminal Symbols – I/O – Comments – Connectors – Process – Decision - Loops – Flow Charts of Fundamental Algorithms (mentioned in Part B)

Part B: Algorithm Design – Problem Solving Aspect – Top Down Design – Formal Conventions – Writing Algorithms – Fundamental Algorithms (Discuss the Design of Algorithms only).

UNIT 02:

THE ART OF PROGRAMMING METHODOLOGY (8 Hrs)

Part C: Program, Characteristics of a good program - Modular Approach - Programming style - Documentation and Program Maintenance - Compilers and Interpreters - Running and Debugging Programs - Syntax Errors - Run-Time Errors - Logical Errors - Concept of Structured Programming.

C-FUNDAMENTALS

Fundamental facts about computer and computer languages - Machine language, symbolic languages, high level languages - keywords in C - basic data types - variables, constants, statements and the scope of variables in C programmes etc.

UNIT 03

MANIPULATING DATA OPERATORS AND EXPRESSIONS (8 Hrs)

Expressions and operators - Binary arithmetical operators, unary arithmetical operators, assignment operators, relational and logical operators, conditional operators - Hierarchy or the order in which operators work when many of them are in use simultaneously. Library functions and their uses

INPUT AND OUTPUT IN C PART –1

Standard input and output library - C input functions like getchar, gets, getch, scanf, etc - The header file 'stdio.h'.

Week 04: INPUT AND OUTPUT IN C PART –2

Standard input and output library (STDIO) - Console input/output library (CONIO) - The function printf – Function 'puts' - sprintf and sscanf functions - The conio library functions such as clrerr, clrscr, delline, gettext, gotoxy, textbackground, textcolor etc

UNIT 04

CONTROL STRUCTURES IN C PART – I (9 Hrs)

Structured programming language - Control instructions - Flow of control - Conditional and Unconditional control structures - selective constructs such as Conditional expression, if – else, switch-case etc.

Week 05: CONTROL STRUCTURES IN C PART – II

Loop control statements - Entry controlled loop (pre-test loop) - Exit controlled loop (post-test loop) - while - do while - for - Break, continue, goto, label statements

C PROGRAMMING WITH ARRAYS

Scalar data types - Derived data types - Arrays - one-dimensional array – two-dimensional array – Multidimensional array - Character arrays.

FUNCTIONS IN 'C'

Modular Programming Approach - Built-in functions or user-defined functions – main () - formal parameters and actual parameters - Function Call - passing by value, passing by reference (address) - void – recursion - Recursive Functions

POINTERS IN C PART – I

Pointer variables - & operator - * operator - Arrays and pointers - Array of pointers - Pointer to an array - Character arrays.

POINTERS IN C PART – II

Declaration of the pointer variable - Static and dynamic memory allocation - malloc (), calloc () functions – free () - main () - Standard parameters argc and *argv[].

Week 08: STRUCTURE AND UNION IN C

Structure data type - 'struct' data type - Prototype of the structure - Structure variable. dot (.) operator, Nested structure - Array of structures operator -> Union

Books and references

B. W. Kernighan and D. M. Ritchie, The C Programming Language, Prentice-Hall

Yashavant Kanetkar; Let us C, BPB Publications, New Delhi.

Greg Perry, Absolute Beginners' guide to C, SAMS Publishing

**DEPARTMENT OF COMPUTER SCIENCE,
U.N. AUTONOMOUS COLLEGE, ADASPUR, CUTTACK**



**CODE-VAECO
E-COMMERCE**

DURATION 30 Hours

COURSE OUTCOMES/OBJECTIVE:

After Completion of the subject student should able to :

- Understand the basic concepts and technologies used in the field of management information systems;
- Have the knowledge of the different types of management information systems;
- Understand the processes of developing and implementing information systems;
- Be aware of the ethical, social, and security issues of information systems.

SYLLABUS

Unit	Title	Details of Topic	Duration(Hrs)
Unit I	Introduction to E-commerce	E-commerce: The revolution is just beginning, Ecommerce : A Brief History, Understanding E-commerce: organizing Themes.	06
Unit II	E-commerce business models and concepts, The internet and World Wide Web: Ecommerce infrastructure	E-commerce Business Models, Major Business to Consumer (B2C) business models, Major Business to Business (B2B) business models, Business models in emerging E-commerce areas, How the Internet and the web change business: strategy, structure and process, The Internet: Technology Background, The Internet Today, Internet II- The Future Infrastructure, The World Wide Web, The Internet and the Web : Features.	06
Unit III	Building an ecommerce web site, Security and payment	Building an E-commerce Web Site: A systematic Approach, The e-commerce security environment, Security threats in the e-commerce environment, Technology solution, Management policies, Business procedures, and public laws, Payment system, E-commerce payment system, Electronic billing presentment and payment.	06
Unit IV	E-commerce marketing concepts, Online retailing and services	Consumer online: The Internet Audience and Consumer Behaviour, Basic Marketing Concepts, Internet Marketing Technologies, B2C and B2B E-commerce marketing and business strategies, The Retail sector, Analyzing the viability of online firms, E-commerce in action: E-tailing Business Models, Common Themes in online retailing, The service sector: offline and online, Online financial services, Online Travel Services, Online career services.	06
Unit V	Social networks, auctions, and portals.	Social networks and online communities, Online auctions, E-commerce portals.	06

Books Recommended: 1. Kenneth C. Laudon, E-Commerce : Business, Technology, Society, 4th Edition, Pearson
2. S. J. Joseph, E-Commerce: an Indian perspective, PHI

Value Added Course: Introduction to Machine Learning

Offered By: UG (Computer Science) Department



2023

**Udayanath (Autonomous) College of Science and
Technology, Adaspur, Cuttack**

ABOUT THE COURSE:

With the increased availability of data from varied sources there has been increasing attention paid to the various data driven disciplines such as analytics and machine learning. In this course we intend to introduce some of the basic concepts of machine learning from a mathematically well motivated perspective. We will cover the different learning paradigms and some of the more popular algorithms and architectures used in each of these paradigms.

INTENDED AUDIENCE: This is an elective course. Intended for senior UG/PG students. BE/ME/MS/PhD

PREREQUISITES: We will assume that the students know programming for some of the assignments. If the students have done introductory courses on probability theory and linear algebra it would be helpful. We will review some of the basic topics in the first two weeks as well.

INDUSTRY SUPPORT: Any company in the data analytics/data science/big data domain would value this course.

Summary

Course Status :	Ongoing
Course Type :	Value Added Course in Introduction to Machine Learning
Duration :	05 weeks
Start Date :	20 February 2023
End Date :	20 March 2023
Enrolments Ends :	15 February 2023
Category :	<ul style="list-style-type: none">○ Computer Science○ BCA○ ITM
Level :	Undergraduate/Postgraduate
Class Conducted By:	Mrs. Rasmita Jena, Miss. Pragyalin Sahoo, Mr. Anil Kumar Biswal

Course layout

Week 0: Probability Theory, Linear Algebra, Convex Optimization

Week 1: Introduction: Statistical Decision Theory - Regression, Classification, Bias Variance

Week 2: Linear Regression, Multivariate Regression, Subset Selection, Shrinkage Methods, Principal Component Regression, Partial Least squares

Week 3: Linear Classification, Logistic Regression, Linear Discriminant Analysis

Week 4: Perceptron, Support Vector Machines, Learning Theory, Introduction to Reinforcement Learning, Optional videos (RL framework, TD learning, Solution Methods, Applications)

Week 5: Neural Networks - Introduction, Early Models, Perceptron Learning, Backpropagation, Initialization, Training & Validation, Parameter Estimation - MLE, MAP, Bayesian Estimation

Books and references

1. The Elements of Statistical Learning, by Trevor Hastie, Robert Tibshirani, Jerome H. Friedman (freely available online)
2. Pattern Recognition and Machine Learning, by Christopher Bishop (optional)

Department Of Economics

Value Added Course

SPSS

Unit:1 Introduction to SPSS, Data Management and Transformation

Unit:2 PLATFORMS OF SPSS

Unit:3 Data, Type of Data, and Management of Data

Unit:4 One Way ANOVA and Chi-square Test

Department Of Economics

Value Added Course

MS Excel

UNIT:1 Introduction to Microsoft Excel.

UNIT:2Managing Workbooks and Worksheets Part I, Managing Workbooks and
Worksheets Part II

UNIT:3Managing Data Cells and Ranges Part I, Managing Data Cells and
Ranges Part II

UNIT:4Managing Tables and Table Data

Module I:

Investment Theory: Introduction to financial economics, Time value of money: Future value, Present value, Future value of an annuity, Present value of annuity, Present rate of perpetuity, Investment criteria: Net present value, Benefit-cost ratio, Internal rate of return, Modified internal rate of return, Pay-back period.

Module II:

Valuation of Securities: Fundamentals of valuation of securities: Valuation of bonds and stocks, Bond yield, Yield to maturity, Equity valuation: Dividend discount model, The PIE ratio approach, Irrelevance of dividend: Modigliani and Miller hypothesis, Relevance of dividend: Walter's model, Gordon's model.

Module III:

Risk and Return: Risk and return: Historical return and risk, Computing historical return, Average annual return, Variance of return, Types of risk, Measurement of risk and return of an asset, Measurement of risk and return of a portfolio, Determinants of beta, Risk-return trade-off, Analysis of financial statement: Ratio analysis, Different kinds of financial ratios, Calculation and its importance in financial analysis.

Module IV:

Derivative Markets: An introduction to financial derivatives, Types and uses of derivatives, Forward contracts: Basic concepts, Determination of forward prices, Futures contract: Basic concepts, Theories of future prices: The cost of carry model, The expectation model, Capital asset pricing model, Relation between spot and future prices, Forward vs. future contract, Hedging in futures.

Module V:

Options and Swaps: Options: Types, Value of an option, The pay-offs from buying and selling of options, The put call parity theorem, Binomial option pricing model (BOPM), Black-Scholes option pricing model, Swaps: Types, Advantages, Disadvantages.

Basic Reading List:

1. David G. Luenberger, Investment Science, Oxford university Press, USA, 1997.
2. Hull, John C, Options, Futures and other Derivatives, Pearson Education, 6th Edition, 2005.
3. Thomas E, Copeland, J Fred Weston and Kuldeep Shastri, Financial Theory and Corporate Policy, Prentice Hall, 4th Edition, 2003.
4. Richard A, Brealey and Stewart C Myers, Principles of Corporate Finance, McGraw-Hill, 7th Edition, 2002.
5. Stephen A Ross, Randolph W Westerfield and Bradford D Jordan, Fundamentals of Corporate Finance, McGraw-Hill, 7th Edition, 2005.
6. Burton G Malkiel, A Random Walk Down Wall Street, W.W.Norton and Company, 2003.
7. William Sharpe, Gordon Alexander and Jeffery Bailey, Investments, Prentice Hall of India, 6th Edition, 2003.

LESSON FROM NOBEL LAUREATE

UNIT-I – History of Nobel Prize

UNIT-II-Nobel Laureate in Economics

UNIT-III- Nobel Laureate in India

UNIT-IV- Basic Ideas and Its Implementation

DEPARTMENT OF EDUCATION
VALUE ADDED COURSE
COMMUNICATION SKILLS AND PERSONALITY DEVELOPMENT

DURATION-30 Hours

Objectives:

- (1) To understand the concept process and importance of communication.**
- (2) To gain knowledge of media of communication.**
- (3) To develop skills of effective communication both written and oral.**
- (4) To understand the concept of personality and personality development and its significance.**
- (5) To understand and develop various traits required for personality development.**

UNIT-1 INTRODUCTION TO COMMUNICATION

Meaning and definition, process, functions, objectives, importance, essentials of good communication. Communication barriers – overcoming communication barriers- cross cultural communication.

UNIT-2

(a) WRITTEN COMMUNICATION

Need and functions of business letters- planning and layout of business letters, essentials of effective correspondence – advantages and limitations of written communication.

(b) ORAL COMMUNICATION

Meaning, nature, scope and principles of effective oral communication, techniques of effective speech, the art of listening, principles of good listening, advantages and limitations of oral communication.

UNIT-3 PERSONALITY DEVELOPMENT

The concept of personality, Dimensions of personality, Personality development and significance

UNIT-4 ATTITUDE AND MOTIVATION

Attitude- concept, significance, factors affecting attitudes- positive and negative attitudes, advantages, disadvantages. Motivation- significance, internal and external motives, importance of self-motivation.

PRACTICALS

Topics prescribed for workshop/ skill lab-

- (a) Group discussion
- (b) Presentation skills
- (c) Creativity
- (d) Teamwork
- (e) Innovation





English Dept. (UG)
Value Added Course

Review writing

Duration: Eight hour-long sessions, schedule to be determined
Location: Tutor's Zoom link & Google docs

Course Description: The review writing class will teach students how to write a movie, book, and restaurant review by using well-written, published reviews from magazines like The New Yorker, The New York Times, and Teen Vogue as models. The course is designed to build students' skill, joy, and confidence in writing.

Course Objectives: By the end of the course, students will:

- Work with various texts and writing assignments that advance and complicate their evaluative thinking
 - Learn how to review a subject in a sophisticated and balanced way
 - Learn about the process of invention, writing, and revision in a positive environment
 - Acquire knowledge of correct grammar, punctuation, style, and syntax
 - Learn to work meaningfully in a small group setting
-

Calendar: This calendar, like life, is subject to change, and may be modified by individual tutors to fit the needs of the particular class

Week 1: What is Review Writing?

- Students will learn how review writing fits within the set of higher order thinking skills.
- Students will define the genre of review writing and discuss its format.
- Students will write a short review in class, using the format just learned.
- Students will read an engaging series of short book reviews to use as models for their eventual reviews.

Week 2: Book Review

- Students will read a sample product review and write one of their own, focusing on an organized presentation of opinions.
- Students will review tips for writing a meaningful book review.
- Students will read and richly analyze sample book reviews by published authors.

Week 3: Book Review cont.

- Students will compose a fun in-class review writing exercise.
- Students will examine more ingredients of a successful book review.

Alex Chertok, alex.chertok@gmail.com, WeChat ID: JoyWriting
joywritingtutors.com



- Students will read and richly analyze sample book reviews by published authors to prompt them to think more deeply about their own.

Week 4: The Art of Criticism

- Students will read aloud excerpts of their completed book reviews and give feedback to each other's work.
- Students will engage in an in-class writing exercise in which they negatively review a subject.
- Students will read literature that functions as creative reviews, then begin a creative writing exercise of their own.

Week 5: Movie Review

- Students will read a sample movie review excerpt.
- Students will review a series of concrete tips for writing a compelling film review.
- Students will watch a movie clip and put their newfound movie reviewing skills into practice.

Week 6: Movie Review cont.

- Students will watch a clip of esteemed movie critics offering reviews.
- Students will read a sample movie review, using active and close-reading skills to unpack its meanings paragraph by paragraph.
- Students will watch a movie clip and put their movie reviewing skills into practice.

Week 7: Restaurant Review

- Students will read a sample movie review, using active and close-reading skills to unpack its meanings paragraph by paragraph.
- Students will begin their own food reviews by brainstorming ideas.
- Students will consider their chosen restaurant's food quality, atmosphere, service, etc.

Week 8: Reviewing People

- Students will read aloud excerpts of their completed movie or restaurant reviews and give feedback to each other's work.
- Students will watch a movie clip and provide a summary, analysis, and review.
- Students will read an essay on influence and inspiration.
- Students will begin composing a meaningful review of another person's influence on their own lives.
- Students will reflect on the class and the review writing they've produced.

Department Of Geography
Value Added Course
Rain Water Harvesting

UNIT: 1 Introduction to Rainwater Harvesting.

UNIT: 2 Types and components of rainwater harvesting

UNIT: 3 Fundamental concepts of rainwater harvesting

UNIT: 4 Watershed Management for rainwater harvesting

Practical
(Project work)

Submission of a any field Visit report of rainwater harvesting sides.

Subhasmita Panda
Niranjana Dash 31/11/23
3.11.23
Sathwikata Balabantia
31/11/23

Department of Geology

Udyanatha Autonomous College of Science & Technology

Adaspur, Cuttack, Odisha

VALUE ADDED COURSE

UNIT-I: Geomorphology of Odisha

Physiographic divisions of Odisha, Location, forest, rivers & waterfalls, Lakes of Odisha. Drainage system of Mahanadi river. Major mountains in Odisha. Major lithotypes and rainfall & climate of Odisha.

UNIT-II: Stratigraphy of Odisha

Major stratigraphic divisions of Odisha. Iron-ore supergroup, Gangpur supergroup, Easternghat supergroup, Gondwana supergroup of Odisha. quaternary deposits of Odisha.

UNIT-III: Mineral resources of Odisha

Metallic and non-metallic resources of Odisha. Origin, mode of occurrence, mineralogy, Odisha distribution and uses of Iron ore, Manganese, Bauxite, Coal, Limestone & dolomite, fire clay, laterite.

UNIT-IV: Mineral-based industries of Odisha.

Sukinda ultramafic complex, east-coast bauxite, sargipalli pb-zn deposit. BIF formation, Talcher coal deposit, Biramitrapur limestone deposit.

Atlanta

Nandu

R
2/1/20

Value Added Course UG 4th Semester

प्रायोगिक हिन्दी

FM. 50

Course Hour: 30 Hours.

इकाई - २ - निबंध लेखन, पत्र लेखन,
सामान्य व्याकरण (लिंग, वचन, कारक)

इकाई - २ - हिन्दी का व्यावहारिक शिक्षण

इकाई - ३ - परियोजना कार्य (पत्र अथवा निबंध लेखन)

Dr. M
28.1.23

Sushalata Das.
28/1/2023

Dr. Mohan
28.01.23

Dr. M
28.01.23

Dr. M
28/1/23

Dr. Mohan
28/01/2023

Value added Course (PG) 2nd Semester

अनुवाद और समतुल्यता Course hour- ^{30 Hours.} F.M-50

इकाई-२ - अनुवाद में समतुल्यता के सिद्धांत का महत्व ।

इकाई-२ - अनुवाद के व्यावहारिक पक्ष का शिक्षण
(प्रायोगिक)

इकाई-३ - परियोजना कार्य (अंग्रेजी से हिन्दी/
ओडिशा से हिन्दी अनुवाद)

Dr. Anil
28.1.23

Snehalata Das
28/1/23

B. Mohan
28.01.23

Anil
28.01.23

Anil
28/1/23

R. Swain
28/01/2023

Syllabus:

Application of History in Tourism

Unit-1: Ideas of Tourism

- 1. Tourism-Concept, Definition and Characteristics**
- 2. Types of Tourism-**
 - I. On the basis of Purpose-**
 - a) International-Inbound Tourism & Outbound Tourism**
 - b) Domestic Tourism**
 - II. On the basis of nature**
Adventure Tourism, Cultural Tourism, Ecotourism, Industrial Tourism, Medical Tourism, Religious Tourism, Rural Tourism & Wildlife Tourism

Unit-2: Important Tourist Destinations

- 1. India- Delhi, Agra, Mahabalipuram, Ajanta & Ellora**
- 2. Odisha- Puri, Bhubaneswar, Konark, Ratnagiri (Jajpur) and Sambalpur**

Unit-3: Tourism for Economic Development

- 1. Transport and Communication**
- 2. Employment Facilities**
- 3. Hospitality and Management**

Unit-4: Important Tourism Organization

- 1. UNWTO (United Nations World Tourism Organization)**
- 2. WTTC (World Travel & Tourism Council)**
- 3. ITDC (Indian Tourism Development Corporation)**
- 4. OTDC (Odisha Tourism Development Corporation)**

Department of History
Value Added Course

Heritage of Prachi Valley

Unit-1: Historical Background

- a). Origins extent of Prachi Valley
- b). Literary Source of Prachi Valley
- c). Historiography of Prachi Valley

Unit-2: Religious Syncretism in Prachi Valley

- a). Buddhism & Jainism
- b). Sakta, Solar and Ganapatya Cults
- c). Saivism & Vaishnavism

Unit-3: Monuments of Prachi Valley

- a). Important Temples:-
 - Sobhaneswar Temples, Niali
 - Madhav Temple, Madhav
 - Barahi, Chaurashi
- b). Important Images:-
 - Jaina images of Adaspur
 - Nibharana keshav images of Sobhaneswar
 - Ganesha image of Sobhaneswar
 - Surya images
- c) Important Forts

Unit-4: Commercial Trend in Prachi Valley

- a). Commercial Activities of Prachi Valley
- b). Important trading centres
- c). Navigation

Unit-5: Project Work

- Visit of any place

VALUE ADDED COURSE

Sub:- JAVA

Course Time:45 Hours

Syllabus:-

UNIT-I

Introduction to Java: Java Architecture and Features, Understanding the semantic and syntax differences between C++ and Java, Compiling and Executing a Java Program, Variables, Constants, Keywords Data Types, Operators (Arithmetic, Logical and Bitwise) and Expressions, Comments, Doing Basic Program Output, Decision Making Constructs (conditional statements and loops) and Nesting, Java Methods (Defining, Scope, Passing and Returning Arguments, Type Conversion and Type and Checking, Built-in Java Class Methods).

UNIT-II

Arrays, Strings and I/O: Creating & Using Arrays (One Dimension and Multi-dimensional), Referencing Arrays Dynamically, Java Strings: The Java String class, Creating & Using String Objects, Manipulating Strings, String Immutability & Equality, Passing Strings To & From Methods, String Buffer Classes. Simple I/O using System.out and the Scanner class, Byte and Character streams, Reading/Writing from console and files. Object-Oriented Programming Overview: Principles of Object-Oriented Programming, Defining & Using Classes, Controlling Access to Class Members, Class Constructors, Method Overloading, Class Variables & Methods, Objects as parameters, final classes, Object class, Garbage Collection.

UNIT-III

Inheritance, Interfaces, Packages, Enumerations, Autoboxing and Metadata: Inheritance: (Single Level and Multilevel, Method Overriding, Dynamic Method Dispatch, Abstract Classes), Interfaces and Packages, Extending interfaces and packages, Package and Class Visibility, Using Standard Java Packages (util, lang, io, net), Wrapper Classes, Autoboxing/Unboxing, Enumerations and Metadata.

UNIT-IV

Exception Handling, Threading, Networking and Database Connectivity: Exception types, uncaught exceptions, throw, built-in exceptions, Creating your own exceptions; Multi-threading: The Thread class and Runnable interface, creating single and multiple threads, Thread prioritization, synchronization and communication, suspending/resuming threads.

Course Description

Covers software design, implementation, and testing using Java. Introduces object-oriented design techniques and problem solving. Emphasizes development of secure, well-designed software projects that solve practical, real-world problems.

Intended Outcomes for the course

Upon completion of the course students should be able to:

- Use an integrated development environment to write, compile, run, and test simple object-oriented Java programs.
- Read and make elementary modifications to Java programs that solve real-world problems.
- Validate input in a Java program.
- Identify and fix defects and common security issues in code.

Python Workshop

Siddhant Mishra
Ph.D. Research scholar
(Prime Minister Research Fellow)
Indian Institute of Technology, Kanpur



B.Tech – PDPM INDIAN INSTITUTE OF INFORMATION
TECHNOLOGY, DESIGN & MANUFACTURING,
JABALPUR

About the instructor

- Siddhant is pursuing a Ph.D. at the Indian Institute of Technology Kanpur, under the supervision of Dr. Anikesh Pal.
- His broad area of research is Computational fluid dynamics and Geophysical fluid flows
- Performs High-fidelity DNS and LES on IIT Kanpur supercomputing facility “Param Sanganak”
- Experience –(i) Summer Research Internship @ IIT Patna (May 2018 – July 2018)
(ii) Project-Based Internship @ Bhabha Atomic Research Centre, Mumbai (May 2019 – November 2019)
- Publications – “Single electron transistor based nanosensor for DNA and RNA detection”
- S. Mishra, S. Rani, S.J. Ray (<https://doi.org/10.1063/5.0016104>)
– “Data based approach for magnet design”
- Siddhant Mishra, Raman Sehgal, Vikas Teotia, Sanjay Malhotra (<http://sympnp.org/proceedings/>)



About the instructor

- B. Tech Project – “Data and computational study of Accelerator magnet system”

The B.Tech project was done as Project Based Internship at BARC, Mumbai. A superconducting Magnet system was under development at the Electromagnetic Application & Instrumentation Division, Bhabha Atomic Research Centre, Mumbai. Before fabrication of the components, several simulations and studies were to be performed on them. The project was divided into two parts Computational and Data-based. Von-mises hoop stress of 31.9 MN m^{-2} was found for top-bottom fixed solenoid magnet, under the influence of its self-induced magnetic field and hence was a safe operating condition. A maximum heat transfer rate of 112.47 W was found between the vacuum vessel and the radiation shield for the cryostat, further accounting for different radiative heat loads the cooldown time of the thermal shield was 89.82 hours. Normal Zone Propagation Velocity of 9.82 m s^{-1} was found for the NbTi wire, to be used in the solenoid. The simulations were performed using the commercial package Comsol Multiphysics. Parallel to simulations, Machine learning algorithms in Python were used to predict the design parameters of the magnet from given field data. Classification techniques significantly reduced the standard deviation between the actual and predicted values of the parameters. The final report was titled “Data and Computational Approach for Accelerator Magnet System”.

About the workshop

OVERVIEW

- Python is an inevitable skill in today's Data age.
- The workshop will cover Python basics, applications to some numerical problems, Machine Learning and Data Science.
- It will be a brief workshop of 15-20 lectures.
- Algorithms and Python implementation will be demonstrated, and the programs will be available to students for reference.

About the workshop

workshop content

Track 1

- Number of lectures ~ 15-20
- Lec 1-5: Introduction to the workshop, Basic python programming.
- Lec 4-8: Matrix solvers(direct/indirect), root finding methods.
(one bracketed/one iterative)
- Lec 9-12: Numerical differentiation and integration.
- Lec 13-17: Solution of ODE.

Track 2

About the workshop

workshop content

- Number of lectures ~ 15-20
- Lec 1-5: Introduction to the workshop, Basic python programming
- Lec 6-12: Basics of scientific computing using python
- Lec 12-20: Use of Python for Machine Learning/Data Science.

Track 2

About the workshop

workshop content

Basic Python programming

- (i) Python variables, data types, numbers, castings, Strings etc.
- (ii) if-else, for loop, while loop, numpy arrays etc.

Basics of Scientific Computing

- (i) Introduction to scipy
- (ii) numerical differentiation, integration, and solution of ODE using scipy.
- (iii) root finding using scipy and different matrix operations.

Use of Python for ML

- (i) Introduction to sklearn
- (ii) Basics of Linear regression, classification problems using different algorithms.

About the workshop

Technicalities

- Platform – Google Colab.
- Mode - Online
- Intended audience – B. Tech students of CSE/ECE/ME or any related branch.

VALUE ADDED COURSE

Sub:- Web Designing

Course Time:45 Hours

Syllabus:-

UNIT-1:

Introduction to IOT , Understanding IoT fundamentals, IOT Architecture and protocols, Various Platforms for IoT, Real time Examples of IoT, Overview of IoT components and IoT Communication Technologies, Challenges in IOT.

UNIT-2:

Arduino Simulation Environment Arduino Uno Architecture, Setup the IDE, Writing Arduino Software, Arduino Libraries, Basics of Embedded C programming for Arduino, Interfacing LED, push button and buzzer with Arduino, Interfacing Arduino with LCD.

UNIT-3:

Sensor & Actuators with Arduino, Overview of Sensors working, Analog and Digital Sensors, Interfacing of Temperature, Humidity, Motion, Light and Gas Sensor, Interfacing of Actuators with Arduino, Interfacing of Relay Switch and Servo Motor with Arduino.

UNIT-4:

Creating a mini Robot project Using Arduino

COURSE OUTCOME

At the end of the Course, the Student will be able to:

- Describe the concepts of IoT along with its applications.
- Build a prototype using Arduino Uno.
- Identify different types of sensors, actuators and communication Protocols.
- Build a mini Robot using Arduino

VALUE ADDED COURSE

Sub:- Web Designing

Course Time:45 Hours

Syllabus:-

Unit-I:

The Basics: The Head, the Body, Colors, Attributes, Lists, ordered and unordered

Unit-II:

Links: Introduction, Relative Links, Absolute Links, Link Attributes, Using the ID Attribute to Link within a Document.

Unit-III:

Images: Putting an Image on a Page, Using Images as Links, Putting an Image in the Background

Unit-IV:

Tables, Creating a Table , Table Headers, Captions, Spanning Multiple Columns, Styling Table

Unit V:

Forms: Basic Input and Attributes, Other Kinds of Inputs, Styling forms with CSS

Course Description

This course is designed to introduce the student to the tools and facilities of web design: page composition, HTML, CSS, web design and code validation. Students will use these software technologies together to produce web design projects. Students will cover the Web design/development process, with Macromedia Dreamweaver as the primary Web development tool. Topics covered include basic and enhanced site structure, local and remote site management, and optimization of Web graphics.

Course learning outcomes

Upon successful completion of the Certificate, graduates should be able to:

- Use their learned skills, knowledge and abilities to develop web sites for the internet
- Apply basic design principles to present ideas, information, products, and services on websites
- Apply basic programming principles to the construction of websites
- Effectively manage website projects using available resources
- Demonstrate communication skills, service management skills, and presentation skills
- Complete job preparation tasks including writing resumes and cover letters, conducting job interviews and developing an ePortfolio
- Apply employability skills including fundamental skills, personal management skills, and teamwork skills

Objectives

35 hour

- To give an idea about to concept of IPR.
- To know the different types of IPR and different convention related to IPR.

Unit-1 Introduction

I: - Introduction of IPR: basic concept, need.

II: - Genesis and development of IPR.

Unit-2 Types of IPR

I: - IP-Patents and trademarks: concept and important.

II: - Copyright and related rights.

Unit-3 National and International convention related to IPR

I:- Establishment of WIP: Mission, activities and history.

II: - GATT (General argument on trade and tariff, its mission, concept & activates.)

III: - The Indian copy right Act 1957-original, creates etc.

Unit-4 Digital products and law

I: - Digital Innovations and dev. as Knowledge Assets.

II: - IP laws, cyber law and digital content protection.

Assessment-

- Presentations

-Assignment

Dept. of mathematics
Value added course

Benefits of Vedic Maths to the students:

- They acquire new skills, increasing their educational Performance and building their self-esteem.
- They're upskilled and avail to handle the problem with different Methodology and Tricks, which keeps them motivated and fresh.
- Deriving enjoyment from the interactive realization of practices and methods.
- Systematic acquisition of knowledge.

Better Concentrate on the study.

- Memory Improvement activities.
- Develop Creativity and Confidence.
- Acquiring knowledge and improving skills through shared experience among trainees.
- Get comprehensive, lucid study material during Class & for later Revision & Exercise.

VEDIC MATHEMATICS

Syllabus covered in Level 1

- ❖ Number Patterns
 - ❖ Complements & Vinculum Numbers
 - ❖ Subtraction
 - ❖ Multiplication by 11
 - ❖ Multiplication by 12
 - ❖ Multiplication by 9, 99, 999, etc
 - ❖ Base Multiplication
 - ❖ Vertical & Crosswise (2-digit by 2-digit)
-

Syllabus covered in Level 2

- ❖ Vertical & Crosswise (3-digit by 3-digit)
 - ❖ Multiplication by Duplex Numbers 22, 33, 44
 - ❖ Working base Multiplication
 - ❖ Simple Algebra
 - ❖ Digital Roots
 - ❖ Division by numbers close to the base
 - ❖ Squares of 2 digit numbers
-

Syllabus covered in Level 3

- ❖ Vertical & Crosswise (4- digit by 4-digit)
- ❖ Algebra
- ❖ Squares of three digit numbers
- ❖ Cubes of two digit numbers
- ❖ Square Roots
- ❖ Cube Roots

Participatory Rural Appraisal

Course Structure

Unit 1: Introduction

Concept of Participatory Research: Concepts, Meaning and Definitions, Concept of PRA: Purpose, PRA pillars, principles, Role and Qualities of PRA facilitator, Use of PRA in CD Projects

Unit2: PRA Methods and Techniques

PRA Space Related Methods

Space Related PRA - Transect Walk, Social Mapping, Resource Map, Services and Opportunities Map, Institutional Map

Unit 3: Time Related PRA

Time Line, Trend Analysis, Seasonal Diagram, Daily Activity Schedule

Unit 4: PRA Relation Methods

Cause Effect Diagram, Well-Being Ranking Method, Body Mapping , SWOT and STEEP (Social Technological Economical Environmental and Political) Analysis

Unit 5: Practical Application of PRA methods in a village. Lessons from the Field: Prepare a project/need assessment of the village based on the PRA Experiences.

VALUE ADDED COURSE – ODIA

ଓଡ଼ିଆ ଭାଷା ଓ ସଂସ୍କୃତି

୧ମ ଏକକ/ ଯୁନିଟ୍-୧ -ପ୍ରାୟୋଗିକ ଓଡ଼ିଆ ଭାଷା- ଦରଖାସ୍ତ ଲିଖନ

ସମ୍ବାଦ ପ୍ରସ୍ତୁତି , ବକୃତା ଲିଖନ , କବିତା ଓ ଗଳ୍ପ ଲିଖନ କଳା।

୨ୟ ଏକକ / ଯୁନିଟ୍-୨ ଓଡ଼ିଆ ପର୍ବ ପର୍ବାଣିର ସୂଚନା - ରଜ ପର୍ବ
ରଥଯାତ୍ରା , ମକର ସଂକ୍ରାନ୍ତି , ମହାବିଷୁବ ସଂକ୍ରାନ୍ତି , ଦୁଆଖାଇ , ମାଣବସା ,
ପ୍ରଥମାଷ୍ଟମୀ ।

୩ୟ ଏକକ / ଯୁନିଟ୍-୩- ଲୋକ ଗୀତ , ଲୋକ କାହାଣୀ , ପ୍ରବାଦ ଓ
ପ୍ରବଚନର ସ୍ଵରୂପ ।

P.G. DEPARTMENT OF BOTANY
VALUE ADDED COURSE
PLANT TISSUE CULTURE
PAPER-I (THEORY)

20hrs

Course Objectives: The paper will deal plant cell, tissue & organ culture, somatic hybridization & cybridization, micropropagation, plant transformation & development of herbicide resistance varieties.

SD
UNIT-I

Conventional plant breeding, Introduction to cell & tissue culture as a technique to produce novel plants & hybrids. Morphogenesis & Organogenesis in plants, tissue culture media (composition of media), initiation & maintenance of callus & suspension culture; single cell clones.

SP
UNIT-II

Shoot tip culture: Rapid clonal propagation & production of Virus-free plants. Anther, pollen & ovary culture for production of haploid plants & homozygous lines. Embryo culture & embryo rescue. Protoplast isolation, culture & fusion; biochemical & physical selection of hybrid cells & regeneration of somatic hybrids & cybrids.
Cryopreservation, slow growth & DNA banking for germplasm conservation.

SLS
AM
UNIT-III

Plant transformation technology: Basis of tumor formation, features of Ti & Ri plasmids, mechanism of DNA transfer, role of virulence genes, use of Ti & Ri plasmids as vectors. Use of promoters, genetic markers, use of reporter genes with introns, use of scaffold attachment regions. Methods of nuclear transformation, viral vectors & their applications, multiple gene transfers, direct DNA transfer. Electroporation, microinjection, transgenic stability & gene silencing.

AD
UNIT-IV

Application of Plant transformation for productivity & performance: Herbicide resistance, atrazine, insect resistance, Bt-genes, disease resistance. Virus resistance, Chitinase, 1-3 Beta glucanase, antifungal proteins, thionins, nematode resistance. Abiotic stress, use of ACC synthase, ACC oxidase, male sterile lines, carbohydrate composition & storage.

BB
PAPER-II (PRACTICAL)

10hrs

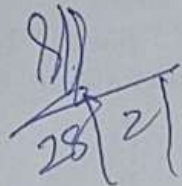
PRACTICALS PERTAINING TO THEORY COURSE

Course learning outcomes: Students will learn about clonal propagation, production of haploids, somaclonal varieties, development of somatic hybrids & cybrids for crop improvement.

REFERENCE BOOKS

- ❖ Glick, B. R. and Pasternak (2003). Molecular Biotechnology: Principles and Applications of Recombinant DNA. ASM Press, Washington, D. C., USA.
- ❖ Kyte, L. and Kleyn, J. (1996). Plants From Test Tube to: an Introduction to Micropropagation, 3rd Ed. Timber press, Port land, USA.
- ❖ Pollard, W. J. and Walker (1990). Plant Cell and Tissue Culture Vol VI. Humana press Clifton, USA.
- ❖ Subramanyam N.S. (1995). Modern Plant Taxonomy, 1st Edition, Vikas Publication House Pvt. Ltd. Publisher.

Date of commencement 09/03/2023


28/2/23

VALUE ADDED COURSE ON SOLID WASTE MANAGEMENT

UNIT:1

Sources of Solid waste, Types of solid waste, Physical and Chemical composition of municipal solid waste. Generation rate, Numerical Problems.

Transportation: Need of transfer operation, transfer station, transport means and methods, route optimization. Solid waste management 2000 rules with, 2016 amendments.

UNIT-2

Processing techniques: Purpose of processing, Volume reduction by incineration, Process description, Mechanical volume reduction (compaction), Mechanical size reduction (shredding), component separation (manual and mechanical methods).

UNIT-3

Composting Aerobic and anaerobic method - process description, process microbiology, design consideration, Mechanical composting, Vermi composting, Numerical Problems. Sanitary land filling: Definition, advantages and disadvantages, site selection, methods, reaction occurring in landfill- Gas and Leachate movement, Control of gas and leachate movement, Design of sanitary landfill. Numerical Problems.

UNIT-4

Sources, collection, treatment and disposal: - Biomedical waste, E-waste, construction and demolition waste.

UNIT-5

Incineration -3Ts factor affecting incineration, types of incinerations, Pyrolysis, Energy recovery technique from solid waste management. Hazardous waste.

COURSE OUTCOME

After studying this course, students will be able to:

- Analyse existing solid waste management system and to identify their drawbacks.
- Evaluate different elements of solid waste management system.
- Suggest suitable scientific methods for solid waste management elements.
- Design suitable processing system and evaluate disposal sites.

REFERENCES

1. Municipal Solid Wastes (Management and Handling) Rules, 2000. Ministry of Environment and Forests Notification, New Delhi, the 25th September, 2000. Amendment – 1357(E) – 08-04-2016
2. Municipal Solid waste management manual, Part II published under Swachh Bharat Mission, Central Public Health and Environmental Engineering Organization (CPHEEO), 2016, Ministry of Urban Development, Government of India.
3. Handbook of Solid waste management, second edition, George Tchobanoglous, Frank Kreith, published by M/c Graw hill Education, 2002. ISBN-13 978-0071356237 ISBN -10 0071356231.

SYLLABUS..VAC PG POL. SC.

DEMOCRACY IN INDIA

Introduction: This paper deals with concepts and different dimensions of democratic governance highlighting the major debates in the contemporary India. There is a need to understand the importance of the concept of governance in the context of a globalizing world, environment, administration, development. The essence of governance is explored through the various good governance initiatives introduced in India.

Learning Objectives: To introduce students:

- i. to different dimensions of democratic governance
- ii. to major debates on governance in the contemporary times
- iii. to the concept of governance in the context of a globalizing world
- iv. to good governance practices in India

Expected Outcomes: Students will be able to:

- i. Understand different dimensions of governance in the context of Globalization
- ii. Understand good governance practices in India

Unit-I: Democracy in India: Origin and Growth;

Unit-II: Democracy: A Historical Overview, Democracy and its Types.

Unit-III: Grass-roots Democracy: Rural Local Self-Governments: Urban Local Self-Governments

Unit-IV: Democracy in India: Issues and Challenges.



VALUE-ADDED COURSE

CRITICAL THINKING



Department of Philosophy

U.N. (Auto.) College of Sci. & Tech., Adaspur, Cuttack

VALUE-ADDED COURSE (30 hours)

CRITICAL THINKING

Course Objectives:

1. The course will primarily aim at helping students to cultivate rational acumen.
2. Acquire the ability to ask questions, and find issues where there are none.
3. Help students enrich their ability for reflective thinking, which will help them have a vision roadmap to translate the vision, and anticipate and address issues encountered.
4. To understand the nature of reasoning and the limit of reasoning as well.

Course Content

Unit-I

What is Critical Thinking? Who is a Critical Thinker? Standards of Critical Thinking, Benefits and Barriers, Exercises

Unit-II

Critical Thinking and Logic: what is an argument? Truth Content and Logical Content; Validity: Deductive and Inductive

Unit-III

Evaluating Arguments: Inferences and Fallacies; Impediments to Good Reasons

Unit-IV

Information and Its Evaluation: sources of information; Reason and Social Influences; means of social influences, critical writing, and critical reading.

Basic Study Materials:

1. John Hospers: *An Introduction to Philosophical Analysis*.
2. Richard Feldman, *Reason and Argument*.
3. M.R. Cohen and E. Nagel, *An Introduction to Logic and Scientific Method*.
4. Madhuchhanda Sen, *Critical Thinking*

Course Outcome(s):

1. To develop the spirit of questioning and critical inquiry
2. To cultivate an objective and secular attitude towards problems in life.
3. To listen, understand, and re-examine articles of faith by the parameters of reason.
4. To bring clarity in thinking and understanding of issues and avoid confusion or ambiguity.
5. To develop the skills of observation, analysis, and assessment by the touchstone of reason.
6. To make the right choice and move ahead in real-life situations with the strength of self-direction and self-evaluation from time to time.

Course Designed

SL. NO.	Program	Periods allotted
01	Interactive Session on Critical Thinking, Critical Thinker, Standards of Critical Thinking	2 hr.
02	Benefits and Barriers	1 hr.
03	Assignment: Short Stories, Passages, Extempore	2 hr.
04	Critical Thinking and Logic	2 hr.
05	Argument, Truth Content, and Logical Content	2 hr.
06	Validity: Deductive & Inductive	2 hr.
07	MCQ Test	1 hr.
08	Inferences & Fallacies	1 hr.
09	Impediments to Good Reasons	1 hr.
10	Group Discussion and Interaction	1 hr.
11	Information and its Evaluation	2 hr.
12	Poster Presentation and Interaction	1 hr.
13	Critical Writing: Essay Writing, Satire Writing, Preparation of Article for Publication	2 hr.
14	Debates on Social Issues like, Communal Feeling, Gender Discrimination, Constitutional Values, Duties and Rights, Abortion, Euthanasia, Corporate Social Responsibilities, Environmental Issues, Intrinsic and instrumental Values	5 hr.
15	Critical Reading: Editorial Reading, Novels, Poems, Features reading, Magazines and Journals	3 hr.
16	Evaluation and Certificate Distribution	2 hr.

Department of Logic and Philosophy
Value Added Course
on
Professional Ethics

- Unit-I:** - What is Applied Ethics: Nature & Scope of Applied Ethics- Ethical Theories- Deontology, Utilitarianism, Relativism & Subjectivism
- Unit-II:** Taking Life: Animals- Animals rights, Reverence for life
Taking Life: Humans- Types of Euthanasia, Abortion
- Unit-III:** Environmental Ethics: Anthropocentrism, Non-anthropocentrism, Deep Ecology
- Unit-IV:** Professional Ethics: (a) Business Ethics- Rights and Obligations, Justice & Honesty in Ethics. (b) Bio-medical Ethics- Hippocratic Oath, Rights and Obligations of Health- Care Professionals, Doctor- Patient-Relationship

Prescribed Book-

1. Peter Singer- Practical Ethics

Reference Books-

1. J. Jagadeb- Bio-medical Ethics
2. Tom Regan - Animal Rights
3. J. P. Theroux- Ethics: Theory & Practice
4. P.K Mohapatra :Ethics and Society

- Class- 1- Concepts of basic Electricity : Ohms Law, Kirchoff's Law. Simple applications.
- Class -2- Single phase and Three phase line,Voltage,Current,resistance,Impedance,Power Factor.
- Class-3- Connections Using Single phase and Three phase Multimeter.
- Class-4- Measurements of Voltage, Current, resistance etc.
- Class-5- Introduction to Capacitor,Choke coil,Diode,Transistor,thyristor.Assembly symbol &diagram.
- Class-6- Basic Electrical circuits symbols and wiring ,installation.
- Class-7- Colour code of Carbon Resistor.General Electricity Practicing the colour coded resistor values. Verifying with multimeter.
- Class-8- Series and Parallel circuits. Direct Current Polarity Testing. AC and identifying phase,neutral and earth component.
- Class-9- Circuit connecting number of lamps in series and Parallel ,Neutral and earth terminals in three phase supply.
- Class-10- interpretation of components ads per circuit and lying components on PCB.
- Class-11- Laying components as per layout 7 soldering on PCB shooting of assembled circuit.
- Class-12- Concepts of Earthing , purpose , types .Pipe Earthing, Plate Earthing.
- Class-13- House wiring and its concepts.
- Class-14- Conductor,Insulator &its types.
- Class-15- Skinning different types of cable ends joints like twist joint.
- Class-16- Joints in Electrical Conductor, Married Joint.
- Class-17- Tea joint in standard conductors.
- Class-18- Concepts of gauge of wire. conductor material & its current carrying capacity.
- Class-19- Making the wiring layout for a bedroom .The load of circuit and its location with light,fan&power point.
- Class-20&21- Carry out the wiring,house wiring,PVC casing and capping &test lamps in fault ,concealed as per layout.
- Class-22- Location,assembly and installation of single and twin energy meter,installation of fluorescent lamp.
- Class-23- Use of two way & different types of switches.Switch gear used ingeneral electrical wiring in two way or three way system installation.
- Class-24- As prescribed and makes electricalconnections through plugs and switches to different points.
- Class-25&26 - Series connections for a particular supply voltage for making decorative serial lamps of switch board.
- Class-27- Fixing of switch box casing cleats,conduit ceilingroses,switches etc.
- Class-28&29- Installation of electrical equipments &locating Faults Megger ,Test lamps & its removal.
- Class-30-Dismantling and assembling oswitchgears in simple electrical installations.

Value Added Course for P.G. Department of Political Science

Human Rights : Ideas and Concepts

Unit I : Protection of Human Rights Act,1993. (5 Hrs)

Unit II : Universal Declaration of Human Rights (5 Hrs)

Unit III : Issues and Challenges : Part- (I) (12 Hrs)

- (a) Refuges and Displaced persons
- (b) Tribals, Landless , Bonded Labours , Unorganised labours and Peasants
- (c) Under trials, Prisoners and P.O.W

Unit IV : Issues and Challenges : Part- (II) (10 Hrs)

- (a) Women
- (b) Children
- (c) Minorities
- (d) Caste & Religion

(To be implemented from March 1st Week)

Jnananjali Parida

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**Value Added Course for
Constitutional Values and Fundamental Rights**

Unit I : Constitution of India- An Introduction (10 Hrs)

- Sovereignty
- Socialism
- Secularism
- Democracy
- Republic

Unit II : Constitutional Values (10 Hrs)

- Justice : Social, Political and Economic
- Liberty : Thought, Expression, Belief, Faith, Worship
- Equality : Equality before law and equal application of laws
- Fraternity : Dignity, Unity and Integrity

Unit III : Fundamental Rights (10 Hrs)

- Fundamental Rights
- Legal status of rights in India

Jnananjali Parida

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Political Science is titled to be "Political Communication."

This shall be a Thirty hours course to be conducted on blended mode.

The syllabus is designed as such:

Unit One

- i. Political Communication: Concepts and issues
- ii. Understanding of Political communication : national and international contexts

Unit Two

- i. Actors and agencies involved in the production of political news and information
- ii. Impact of media coverage of politics on audiences

Unit Three

- i. Youth and Political journalism- As a career option
- ii. Importance of Political journalism in a democratic set up

Unit Four

- i. Relevance of Political Communication
- ii. Way Forward

Chinashree Lakshmi

VALUE ADDED COURSE

PERSONALITY DEVELOPMENT: A WAY TO NURTURE YOUR FUTURE

SYLLABUS

Objective: To provide knowledge regarding the role of personality to get success and its development strategies.

Outcome: student will get to know about their own personality and will try to bring development within them.

UNIT 1 : INTRODUCTION TO PERSONALITY DEVELOPMENT

The concept of personality- Dimensions of personality: Theories of Freud & Erickson- Significance of personality development. The concept of success and failure: what is success? Hurdles in achieving success- overcoming hurdles in achieving success- overcoming hurdles_ factors responsible for success- what is failure? Causes of failure. SWOT analysis.

UNIT 2: OTHER ASPECTS OF PERSONALITY DEVELOPMENT

Body language- problem solving – conflict and stress management – decision making skills- Leadership and qualities of a successful leader- character building – Team work – Time management – work ethics – good manners and etiquette.

UNIT 3: EMPLOYABILITY QUOTIENT

Resume building – The art of participating in group discussion – facing the personal (HR & Technical) Interview- frequently asked questions. Psychometric analysis- Mock interview sessions.

PRACTICAL: (I) PERSONALITY TYPE

(II) EPQ

REFERENCE BOOKS :

- (1) Andrews, sudhir. How to succeed at interview, 21st (rep.) New Delhi. Tata McGraw Hill 1988
- (2) Hindle, Tim, Reducing stress. Essential Manager Series. DK Publishing, 2003
- (3) Robert Baron, Psychology (5th edition) New Delhi, Tata McGraw Hill

S. 2023/24

Value Added Course for U.G.

GROUP-V

COURSE CODE	COURSE NAME	MARKS	CREDITS
Sans- 2.3.16.5 May be opted as AE/FE	Yoga for Personality Development and Stress Management	100-70 (End- Sem)+30 (Mid- Sem)	4cr 2Cr.
Unit-I	Concept of Yoga- meaning and Definition, Types and Techniques of Yoga, 1 Long question-10 1 Short question- 4	14 08	
Unit-II	Personality Development through Yoga, Yogic Techniques to develop Attention, Memory and Concentration , 1 Long question-10 1 Short question- 4	14 08	
Unit-III	Concept of Stress according to Indian and Western Psychology and its Impact. 1 Long question-10 1 short question- 4	14 08	
Unit-IV	Stress management through Yogic Techniques- Pranayama, Dhyana, Chanting of Mantra, Yoganidra etc. 1 Long question-10 1 Short question- 4	14 08	
Unit-V	Yogic way of Life with Special Reference to <i>Srimadbhagavadgita</i> and <i>Charakasamhita</i> 1 Long question-10 1 Short question- 4	14 08	

Practical - Practice of Asanas, Pranayama,
& Meditation. 10

Books Recommended

1. Swami Satyananda, *Asana, Pranayama, Mudra and Bandha*, Bihar Yoga Bharati, Bihar
2. Elizabeth B. Hurlock, *Personality Development*
3. Travis Bradberry, Jean Greaves and Patrick Lencioni, *Emotional Intelligence*
4. Marilyn Gordon, *The Wise Mind: The Brilliant Key to Life Transformation and Healing*
5. Cannon, W. (1939). *The Wisdom of the Body*, 2nd ed., NY: Norton Pubs.
6. George Feuerstein, *The Yoga Tradition* (its history, literature, philosophy and practice)
7. Sri Ananda, *The Complete Book of Yoga Harmony of Body and Mind*, Orient Paper backs: Vision Books Pvt. Ltd, 1982
8. Selye, H (1950). "Stress and the general adaptation Syndrome". *Br. Med. J.* 1 (4667): 1383-92. PMC 2038162.
9. Lazarus, R.S., & Folkman, S. (1984). *Stress, Appraisal and Coping*. New York: Springer.
10. Mills, R.C. (1995). *Realizing Mental Health: Toward a new Psychology of Resiliency*. Sulberger & Graham Publishing, Ltd.
11. Lehrer, Paul M. and David H. (FRW) Barlow, Robert L. Woolfolk, Wesley E. Sime (2007). *Principles and Practice of Stress Management, Third Edition*. pp. 46-47

25/11/23

25/10/23

25/11/23

25/11/23

25/11/23

25/01/23

Value Added Course? Department of Sociology

Climate Change and Sustainability

Value Added Course

Course Name

**Climate
Change and
Sustainability**

Duration:
30 hrs

Offered by:

Department of Sociology



Udayanath (Auto) College of Sc. & Tech.

Prachi Jnanapitha, Adaspur, Cuttack, 754011

Value Added Course : Department of Sociology

Climate Change and Sustainability

The Importance of the Course:

Problems of Climate change and questions about a sustainable future concerns all of us, and it is a task for all of us and at different levels. Therefore, the SDGs have a major focus on Localization and Coproduction as important elements of the local architecture of the SDGs, and a “credible means of its implementation”. Localization involves embedding it in the vernacular epistemologies and local sociologies at the grassroots and empowering communities to stimulate a bottom-up change to drive the SDGs through local co-production. Results have to be coproduced by various players and at different levels. Thus, educational institutions (Schools, Colleges, and Universities) have a very important role to steer the process by creating a “critical mass” of students empowered with the cognitive capacities and behavioral orientations as “ecological citizens”, who, in turn, will play a leadership role in the community as change agents.

Design of the Course:

The course is intended for an audience from various academic backgrounds, and is designed for an interdisciplinary group of students. Thus, it is a course where passionate and committed students of diverse backgrounds and perspectives are welcome. It takes a “think globally, act locally” approach to inspire active ecological citizenship.

Course Objectives:

The course will help students understand the problems of climate crisis, its various dimensions, causal factors, their impacts, policy approaches and frameworks, action plans for possible solutions. Thus, the course is intended to:

- i. Deepen the understanding and awareness of students about the Climate crisis and the debates about a sustainable future
- ii. Impart the students the learning to be able to understand what it takes to really make a difference in the world and what they need to do in order to make a difference
- iii. Promote Leadership, Civic Engagement and Responsibility: Create a critical mass of students and youth leaders equipped with the motivation, knowledge, skills and capacities to

play a leadership role within the college, and in their communities to inspire wider debates and action at the local level to address the problems of the climate crisis.

iv. Build up a nucleus of environmental volunteers to engage in effective local collective action driving innovative sustainability and climate solutions making a shift to a green economy toward a just, inclusive and sustainable future.

Course outline:

UNIT I -The Anthropocene and the Anthropogenic Climate crisis: Globalwarming, Biodiversity Loss, Resource depletion, Carbon Footprint, Ecosystems services.

UNIT II - Revisiting the Development Paradigm: Historical and Epistemological developments; Western Enlightenment and Man-Nature Dualism; Anthropocentrism as a worldview; Economy and Nature.

UNIT III - The Climate Debates: The IPCC and the UN Framework Convention on Climate Change, the Kyoto Protocol, Paris Agreement, and Other International Conferences on Climate Change, North-South divide in Climate Negotiations.

UNIT IV - Approaches to Sustainability: Weak sustainability vs Strong sustainability, sociotechnocratic and Social Ecological Approaches, Deep Ecology, Regenerative sustainability.

UNIT V -Climate Action: Repairing the Damage and Building a Better Future, Sustainability Development Goals (SDGs), Policy Development, Social change, Technological innovation vs. Social mobilization.

Detailed Syllabus for Value Added Course
On
Data Analysis Using SPSS/R
(2022-23)
(Duration-30 hrs)

Unit-1: Descriptive Statistics: Data, primary and secondary data, Sources of Data Collection, Tabulation and Graphical Representation of Data, Frequency Distribution, Measures of Central Tendency, Measures of Dispersion, Skewness and Kurtosis.

Unit-2: Correlation and Regression Analysis: Definition, Scatter Diagram, Correlation Coefficient, Rank Correlation Coefficient (with and without tie), Properties, Regression coefficient, Lines of Regression, Properties of Regression.

Unit-3: Introducing R: Getting R, Running R Programming, Finding your way in R. Common Packages, Reading and Getting Data into R, Viewing Named Objects, Types of Data Items, Structure of Data Items, Examining Data Structure, Constructing Data Objects, Different Forms of Data Objects, Descriptive Statistics and Tabulation.

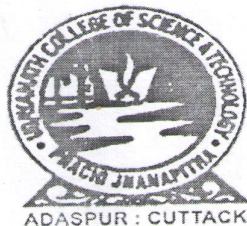
Unit-4: Using SPSS Data Analysis: SPSS Menu and Menu Function, Different Windows of SPSS, Data Entry, Data Screening, Graphical Presentation and Summary Statistics.

Books Recommended:

1. Gupta, S. C: **Fundamental of Mathematical Statistics, Himalaya Publishing House.**
2. Gardener, M: **Beginning R: The Statistical Programming Language, Wiley India.**
3. Landau, Sabine & Everill S. Brian: **A Handbook of Statistical Analysis Using SPSS.**

UG DEPARTMENT OF BOTANY,

U.N. AUTONOMOUS COLLEGE, ADASPUR, CUTTACK



VALUE ADDED COURSE

PRESERVATION TECHNIQUES FOR PLANTS

DURATION 30 Hours

Objectives

- Preserve specimens for practical's in schools and colleges
- Identify plant material using herbarium specimens as reference material
- Develop techniques for understanding the phylogeny of plants.
- Acquire skills essential for a curator.

SYLLABUS

UNIT 1: Introduction of specimens, targeting collection locations and date with permits, study of types of pressed, dried and wet plant.

UNIT 2: Herbarium for algae with collection, cleaning, pressing, mounting, storage and conservation with all details.

UNIT 3: Herbarium for Pteridophytes and flowering plant with collection, cleaning, pressing, mounting, drying, storage and conservation with all details.

UNIT 4: Key to use of Herbarium details; Operation and maintenance importance.

PRACTICAL
preparation of herbarium.

GENDER AND HUMAN RIGHTS

This shall be a 30 hours course which may be conducted through blended mode.

Unit-1:

- B1-** Understanding Human rights and women's rights.
- B2-** Women's rights are human rights.

Unit-2:

- B1-** Universal declaration of human rights.
- B2-** Special consideration of women in UDHR

Unit-3:

- B1-** Rights in Indian Constitution.
- B2-** Fundamental duties in Indian Constitution.

Unit-4:

- B1-** Political rights of women: History and issues.
- B2-** Women in Grass root democratic institutions.

Unit-5:

- B1-** Human rights Commission and Women's Commission.
- B2-** CEDAW and Beijing platform for action.

VALUE ADDED COURSE

DEPT. OF ZOOLOGY

SESSION- 2022-23

NAME OF THE COURSE-MANAGEMENT OF SNAKE BITE

SYLLABUS-

Unit-1

- 1) Classification of snakes found in India
- 2) Identification of poisonous snakes and non- poisonous snakes
- 3) Biting mechanism of snakes
- 4) Categories of snake bite and its identification

Unit-2

- 1) Categories of snake venom
- 2) Morphological and physiological changes in snake bite
- 3) Symptoms of patients

Unit-3

- 1) Management options for snake bite
- 2) Investigation and laboratory tests
- 3) First aid methods on snake bite
- 4) Methods of treatment
- 5) Antivenom

Practicals - (Photographs and Illustration)

- 1) Identification of poisonous and non-poisonous snakes
- 2) Biting apparatus/mechanism
- 3) Identification of snake bite
- 4) Morphological features in snake bite
- 5) First aid management strategies
- 6) Simple laboratory tests for snake bite
- 7) Change in physiological parameters on snake bite
- 8) Collection of venom
- 9) Possible use of anti-venoms in treatment
- 10) Causes of death and their management