B.C.A.

PROFESSIONAL ETHICS

I SEMESTER

COURSE CODE: 22SCCCA1

CORE COURSE: PROGRAMMING IN C AND DATA STRUCTURES

Objectives:

- To know about the basics of C Programming, Control and Looping Structures and programming with it.
- To understand Arrays, Pointers and String Processing in Clanguage
- To know about the basic concepts in Data Structures

Unit I

Basic of C: History of C and its importance – Structure of a C program – Data Types – Constants and Variables – Operators and Expressions – Order of Precedence, Evaluating of Arithmetic Expressions – Type Conversion- Decision Statements: if, if-else, and nested if statements.

Unit II

Loops Structures: For Loop, While, Do-while loop – Arrays: - One Dimensional Array, Two-dimensional Arrays, Character Arrays and Strings – Functions: Function with arrays - Function with decision and looping statements - Recursion.

Unit III

Pointers: Introduction – Pointer Expressions – Chain of Pointers – Pointers and Arrays – Array of Pointers – Pointers as function arguments – Functions returning Pointers – Pointers to Functions – Function pointer – Structures - declaration, initialization, Array of Structures – Pointer to structures, Structures and functions – Typed of, Enumerated data types, Unions.

Unit IV

Strings Processing, Standard string library functions – Files: introduction and files functions – Writing and reading in Text mode – Simple application: Display the contents of a file. Write data to a file. Append data to an existing file – File IO – Reading and writing structures.

Unit V

Stack: LIFO concept, Stack operations, Array implementation of stack – Queue: FIFO concept, Queue operations, Array implementation of queue – ingly Linked List: concepts, operations – Doubly Linked List: concepts, operations – Trees: General trees, Binary trees.

Reference Books

1. E. Balagurusamy, "Programming in ANSI C", Tata McGraw Hill, New Delhi, Seventh Edition, 2016.
2. E.Horowitz, S.Sahni and Susan Anderson Freed, "Fundamental Data Structures in C", 2ed, Orient BlackSwan Publisher, 2009.
3. Byron S. Gottfried, "Programming with C", Schaum's Outline Series, Tata- McGraw Hill Edition, New Delhi, 1991.
4. E. Karthikeyan, "A Textbook on C Fundamentals, DataStructures and Problem Solving",Prentice-Hall of India Private Limited, New Delhi, 2008.
5. YashavantKanetkar, "Let us C", BPB Publications, Tenth Edition, New Delhi, 2010.
6. Szuhay, Jeff, and Szuhay, Jeff, "Learn C Programming: A Beginner's Guide to Learning C Programming the Easy and Disciplined Way", Packt Publishing, 2020.
7. Jena, Sisir Kumar, and Jena, Sisir Kumar, "C Programming: Learn to Code", CRC Press, 2021.
8. https://www.tutorialspoint.com/cprogramming/index.htm
9. https://www.w3schools.in/data-structures/intro

PROFESSIONAL ETHICS

I SEMESTER

COURSE CODE: 22SCCCA1P

CORE COURSE: PROGRAMMING IN C LAB

Objectives:

- To understand the programming fundamentals of C language
- To impart writing skill of C programming and data structures for a list of problems.
- To impart hands on training for writing a C program using computers.

1. Write a Program
   (i) To convert temperature from degree Centigrade to Fahrenheit,
   (ii) Find whether given number is Even or Odd,
   (iii) Find the greatest of Three numbers.
2. Write a Program to display Monday to Sunday using switch statement
3. Write a Program to display first Ten Natural Numbers and theirsum.
4. Write a Program to perform Multiplication of Two Matrices.
5. Write a Program
   (i) To find the maximum number in an Array using pointer.
   (ii) To reverse a number using pointer.
   (iii) To add two numbers using pointer.
6. Write a Program to solve Quadratic Equation using functions.
7. Write a Program to find factorial of a number using Recursion.
8. Write a Program to demonstrate Call by Value and Call by Reference.
9. Write a Program to create a file containing Student Details.
10. Write a program to Implement a stack using singly linked list, ImplementQueue using Linked List

PROFESSIONAL ETHICS

I SEMESTER
COURSE CODE: 22SCACMM2A
ALLIED COURSE I: ALGEBRA AND CALCULUS

Objects:

To lean the basic concepts in the integration
To train the students to solve the problems in Theory of Equations

Unit I

Theory of Equations: Relation between roots & coefficients – Transformations of Equations – Diminishing ,Increasing & multiplying the roots by a constant- Forming equations with the given roots –Rolle's Theorem, Discrete's rule of Signs(statement only) –simple problems.

Unit II

Matrices : Singular matrices – Inverse of a non-singular matrix using adjoin method - Rank of a Matrix – Consistency - Characteristic equation, Eigen values, Eigen vectors – Cayley Hamilton's Theorem (proof not needed) –Simple applications only

Unit III

Differentiation: Maxima & Minima – Concavity, Convexity – Points of inflexion - Partial differentiation – Euler's Theorem - Total differential coefficients (proof not needed) –Simple problems only.

Unit IV

Integration: Evaluation of integrals of types

1 $\int \frac{px+q}{ax^2+bx+c}dx$ 1. $\int \frac{px+q}{\sqrt{ax^2+bx+c}}dx$ 2. $\int \frac{dx}{a+b\sin x}$

3. $\int \frac{dx}{a+b\cos x}$

Evaluation using Integration by parts – Properties of definite integrals – Fourier Series in the range $(0 , 2\pi)$ – Odd & Even Functions – Fourier Half range Sine & Cosine Series

Unit V

Differential Equations: Variables Separable – Linear equations – Second orderof types ($aD^2 + bD + c$)y =F(x) where a,b,c are constants and F(x) is one of the following types (i) e^{Kx} (ii) sin (kx) or cos (kx) (iii) x^n , n being an integer (iv) e^{Kx} f (x)

Unit VI Current Contours (For Continuous Internal Assessment Only): Derivatives of Implicit and parametric Functions

Text Book(S)

1. T.K. Manickavasagam Pillai & others, Algebra, Volume I, S.V Publications ,1985 Revised Edition (Units I, II)
2. S. Narayanan, T.K.Manicavachagam Pillai, Calculus,Vol.II, S.Viswanathan Pvt Limited, 2003. (Units III, IV and V)

Reference(S)

1. M.L. Khanna, Differential Calculus, Jaiprakashnath and Co., Meerut-2004.

PROFESSIONAL ETHICS

I SEMESTER

COURSE CODE: 22UGVED

PART IV - VALUE EDUCATION

Objectives:

- To understand the philosophy of life and values through Thirukural
- To analyse the components of values education to attain the sense of citizenshipTo understand different types of values towards National Integration and internationalunderstanding
- To learn yoga as value education to promote mental and emotional health
- To understand human rights, women rights and other rights to promote peace and harmony

Unit I Philosophy of Life and Social Values

Human Life on Earth (Kural 629) -Purpose of Life (Kural 46) -Meaning and Philosophy of Life (Kural 131, 226) -Family (Kural 45), Peace in Family (Kural 1025) Society (Kural 446), The Law of Life (Kural 952), Brotherhood (Kural 807) Five responsibilities / duties of Man (a) to himself (b) to his family (c) to his environment (d) to his society, (e) to the Universe in his lives (Kural 43, 981).

Unit II Human Values and Citizenship

Aim of education and value education: Evolution of value oriented education, Concept of Human values: types of Values- Character Formation – Components of Value education- A P J Kalam's ten points for enlightened citizenship- The role of media in value building

Unit III Value Education towards National and GlobalDevelopment

Constitutional or national values: Democracy, socialism, secularism, equality, Justice, liberty, freedom and fraternity - Social Values: Pity and probity, self-control, universal brotherhood - Professional Values - Knowledge thirst, sincerity in profession, regularity, punctuality and faith -Religious Values: Tolerance, wisdom, character - Aesthetic Values- Love and appreciation of literature and fine arts and respect for the same- National Integration and International Understanding.

Unit IV Yoga and Health

Definition, Meaning, Scope of Yoga - Aims and objectives of Yoga - Yoga Education with modern context - Different traditions and schools of Yoga - Yoga practices: Asanas, Pranayama and Meditation.

Unit V Human Rights

Concept of Human Rights: Indian and international perspectives- Evolution of Human Rights- definitions under Indian and International documents -Broad classification of Human Rights and Relevant Constitutional Provisions: Right to Life, liberty ad Dignity- Right to equality- Right against exploitation- Cultural and Educational Right- Economic Rights- Political Rights- Social Rights - Human Rights of Women and Children – Peace and harmony.

Unit VI Current Contours: (for continuous internal assessment only):

Books for References

1. Thirukkural with English Translation of Rev. Dr. G.U. Pope, Uma Publication, 156, Serfoji Nagar, Medical College Road, Thanjavur 613004
2 Leah Levin, Human Rights, NBT,1998
3. V.R. Krishna Iyer, Dialetics and Dynamics of Human Rights in India, Tagore Law Lectures.
4. Yogic Thearpy - Swami Kuvalayananda and Dr.S.L.Vinekar, Government of India, Ministry of Health, NewDelhi.
5. SOUND HEALTH THROUGH YOGA - Dr. K.Chandrasekaran, Prem Kalyan Publications, Sedaptti,1999.
6. Grose. D. N – "A text book of Value Education' New Delhi (2005)
7. Gawande . EN – "Value Oriented Education" – Vision for better living. New Delhi (2002) Saruptsons
8. Brain Trust Aliyar- "Value Education for Health, Happiness and Harmony" Erode (2004) Vethathiri publications

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PROFESSIONAL ETHICS

II SEMESTER

COURSE CODE: 22SCCCA2

CORE COURSE: II PROGRAMMING IN JAVA

Objectives:

- To acquire the programming skills with java.
- To implement the object oriented concepts with java language
- To learn the art of GUI programming with Applet.

Unit I

Foundation, Essentials, Control Statement and Classes & Objects. Stage of Java – origin of Java – challenges - features - Object-Oriented Programming; Java Essentials: Elements - API - variables - primitive data types – String Class - operators –combined assignment operators - conversion –scope – comments - keyboard input; Control Statements: if, if-else, nested if & if-else- if statements – logical operators – comparison – conditional operator – switch– increment and decrement – while, do-while & for loops – nested loops – break and continue; Classes and Objects: classes and objects -modifiers - passing arguments– constructors - package & import - static class members –method overloading– constructor overloading –returning objects – this variable – recursion – nested & inner classes – abstract classes & methods.

Unit II

Arrays, String Handling, Inheritance, Interface and Packages. Introduction – processing array – passing arrays – returning arrays – String arrays – two Dimensional Arrays - Arrays with Three or More Dimensions; String Handling : String class – concatenation – comparison – substring – methods – other methods–String Buffer, String Builder & String Tokenizer classes; Inheritance: basics – inheriting and overriding superclass methods – calling superclass constructor – polymorphism – inherit from different classes – abstract classes – final Class; Interfaces: Basics – multiple Interfaces – multiple inheritance using interface – multilevel interface – Packages – Create and access packages in Net Beans IDE – static Import and package class – access specifiers.

Unit III

Exception Handling, I/O and File Handling and Multi threading. Introduction - try and catch block - multiple catch block - nested try - finally Block – throw Statement – exception propagation – throw Clause - custom exception – built-in exception; Multithreading: Introduction – threads – thread creation – life cycle – joining a thread – scheduler &priority – synchronization – inter- thread communication –

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thread control – thread Pool – thread group – daemon thread; Files and I\O Streams: file Class – streams – byte streams – filtered byte streams – Random Access File class – character streams.

Unit IV

Applet and GUI Part I. Fundamentals – applet class – life cycle – steps for applet program – passing values through parameters – graphics – event handling; GUI I:GUI – creating windows – dialog boxes – layout managers – AWT component classes – Swing component classes – applications of AWT controls.

Unit V

GUI Part II and Java Database Connectivity Event handling – AWT components – AWT graphics classes – Swing controls – application using Swing and AWT; Java Database Connectivity: types of drivers – JDBC architecture – JDBC classes &interfaces – steps in JDBC applications – creating a new Database and table with JDBC.

References

1. S.Sagayaraj, R.Denis, P.Karthik & D.Gajalakshmi, "Constructive Java Programming", Universities Press, 2021.
2. E. Balagurusamy, "Programming with JAVA", Tata McGraw Hill, New Delhi, 2019.
3. C. Muthu, "Programming with JAVA", Vijay Nicole Imprints Private Limited, Chennai, Second Edition, 2011.
4. Bruce Eckel, Chuck Allison, "Thinking in Java", Prentice Hall Publications, 2006
5. Malina Pronto, "Java: How To Learn Java Programming: How To Improve Your Java Coding In 2020/2021: 5 Programming Languages To Learn For Beginners In Tech", Independently Published, 2020.
6. Nick Samoylov, "Learn Java 12 Programming: A Step-by-step Guide to Learning Essential Concepts in Java", Packt Publishing, 2019.
7. https://www.javatpoint.com/java-tutorial

PROFESSIONAL ETHICS

II SEMESTER

COURSE CODE: 22SCCCA2P

CORE COURSE: II PROGRAMMING IN JAVA LAB

Objectives:

- To understand the basics of JAVA programs and their execution.
- To learn concepts like inheritance, packages and interfaces.
- To understand the life cycle of the applets, databaseconnectivity and their functionality.

1. Write a program to sort the given numbers using arrays.
2. Write a program to implement the FIND and REPLACE operations in the given text.
3. Write a program to implement a calculator to perform basic arithmetic Operations, doing with constructers
4. Write a program to find the student's percentage and grade using command line arguments.
5. Write a program to draw circle or triangle or square using polymorphism and inheritance.
6. Implement multiple inheritance concepts in java using interface, you can choose your own example of a company or education institution or a general concept which requires the use of interface to solve a particular problem.
7. Write a program to create threads and perform operations like start, stop, suspend, resume
8. Write a program to develop an applet to play multiple audio clips using multithreading.
9. Write a program to retrieve employee data from a file
10. Write a program to retrieve student data from a Database

PROFESSIONAL ETHICS

II SEMESTER

COURSE CODE: 22SCACMM2B

ALLIED COURSE II NUMERICAL ANALYSIS AND PROBABILITY

Objectives:

- To learn knowledge about an algebraic and transcendental equations.
- To make the students gain wide knowledge in probability which plays a main role in solving real life problems.

Unit I

Algebraic & Transcendental equations: Bisection Method, Newton Raphson Method, Iteration method - Finite differences – Forward, Backward differences – Newton's forward & backward difference interpolation formulae – Lagrange's interpolating polynomial.

Unit II

Numerical differentiation - Numerical Integration using Trapezoidal rule and Simpson's first & second rules (proof not needed) - Solutions to Linear Systems – Gaussian Elimination Method – Jacobi & Gauss Siedal iterative methods – Theory and problems.

Unit III

Numerical solution of ODE: Solution by Taylor Series Method, Euler's Method, Runge - Kutta 2nd order method- Adam's Predictor Corrector Method and Milne's Predictor Corrector Methods.

Unit IV

Arithmetic Mean – Geometric Mean – Harmonic Mean - Median, Mode , Standard Deviation - Quartile Deviation – Percentiles - Expectation – Variance and covariance.

Unit V

Correlation and Regression –Properties of Simple Correlation and regression coefficients – Simple Numerical Problems only.

Unit VI

Current Contours (For Continuous Internal Assessment Only):

An introduction to MATLAB

References

1. S.S. Sastry, Numerical Analysis (Unit 1 , 2 , 3)
2. Gupta. S.C & Kapoor, V.K, Fundamentals of Mathematical Statistics, Sultan Chand & sons, New Delhi -1994. (Units 4 & 5)
3. M.K. Jain, S.R.K. Iyengar and R.K. Jain, Numerical Methods for Scientific and Engineering Computation, New Age International Private Limited, 1999.
4. C.E. Froberg, Introduction to Numerical Analysis, II Edn., Addison Wesley, 1979.

PROFESSIONAL ETHICS

II SEMESTER

COURSE CODE: 22SCACMM2C

ALLIED COURSE III – OPERATIONS RESEARCH

Objects:

- To learn the basic concepts about Linear Programming Problem, Transportation Problem Assignment Problem, Sequencing Problem andNetwork.
- To make students solve real life problems in Business and Management.

Unit I

Operations Research: Introduction - Basics of OR – OR & decision making – Role of Computers in OR - Linear programming formulations & graphical solution of two variables – Canonical & standard forms of LPP

Unit II

Simplex Method: Simplex Method for <, =, > constraints – Charne's method of penalties– Two phase Simplex method.

Unit III

Transportation problem: Transportation algorithm –Degeneracy algorithm – Degeneracy in Transportation Problem, Unbalanced transportation problem- Assignment algorithm –Unbalanced Assignment problem

Unit IV

Sequencing problem: Processing of n jobs through two machines – Processing of n jobs through 3 machines – processing of two jobs through m machines.

Unit V

Networks: Network – Fulkerson's rule - measure of activity – PERT computation – CPM computation - Resource scheduling.

Unit VI

Current Contours (For Continuous Internal Assessment Only):

Integer and Dynamic programming.

References

1. Manmohan & Gupta , Operations Research, Sultan Chand Publishers, New Delhi

2. Prem Kumar Gupta and D.S. Hira, Operations Research : An Introduction,

3. S. Chand and Co., Ltd. New Delhi,

4. Hamdy A. Taha, Operations Research (7th Edn.), McMillan Publishing Company, New Delhi, 1982.

PROFESSIONAL ETHICS

II SEMESTER

COURSE CODE: 20PELAS1

Part III - Professional English for Arts and Sciences I

PROFESSIONAL ENGLISH FOR PHYSICAL SCIENCES-I

Objectives:

- To develop the language skills of students by offering adequate practicein professional contexts.
- To enhance the lexical, grammatical and socio-linguistic and communicative competence of first year physical sciences students
- To focus on developing students' knowledge of domain specific registers and therequired language skills.
- To develop strategic competence that will help in efficient communication
- To sharpen students' critical thinking skills and make students culturally aware ofthe target situation.

Unit I COMMUNICATION

1. **Listening**: Listening to instructions

2. **Speaking**: Telephone etiquette and Official phone conversations

3. **Reading** short passages (3 passages, one from each – Physics, Chemistry, Mathematics /Computer Science)

5. **Writing:** Letters and Emails in professional context

6. **Grammar in Context:**
   - Wh and yes or no,
   - Q tags
   - Imperatives

7, **Vocabulary in Context:** Word formation - .

i) Creating antonyms using Prefixes

ii) Intensifying prefixes (E. g inflammable)
Changing words using suffixes

A) Noun Endings
B) Adjective Endings
C) Verb Endings

Unit II - DESCRIPTION

Listening – Listening to process description

Speaking - Role play

Formal: With faculty and mentors in academic environment, workplace communication

Informal: With peers in academic environment, workplace communication

Reading –Reading passages on products, equipment and gadgets

Writing – Writing sentence definitions (e.g. computer) and extended definitions(e.g. artificial intelligence) Picture Description – Description of Natural Phenomena

Grammar **in Context**: Connectives and linkers.

Vocabulary – Synonyms (register) - Compare & contrast expressions.

Unit III - NEGOTIATION STRATEGIES

Listening - Listening to interviews of specialists / inventors in fields (Subjectspecific)

Speaking – Brainstorming. (mind mapping). Small group discussions (subject-specific)

Reading – longer Reading text. (Comprehensive passages)

Writing – Essay Writing (250 word essay on topics related to subject area, like pollution, use of pesticides in cultivation, merits and demerits of devices like mobile phones, merits and demerits of technology in development)

Grammar in Context: Active voice & Passive voice – If conditional -Collocations – Phrasal verbs

Unit IV - PRESENTATION SKILLS

Listening - Listening to presentation. Listening to lectures. Watching –documentaries (discovery / history channel)

Speaking –Short speech

- Making formal presentations (PPT)

Reading – Reading a written speech by eminent personalities in the relevantfield /Short poems / Short biography.

Writing - Writing Recommendations

Interpreting visuals - charts / tables/flow diagrams/charts

Grammar in Context – Modals

Vocabulary (register) - Single word substitution

Unit IV - CRITICAL THINKING SKILLS

Listening - Listening to advertisements/news and brief documentary films (withsubtitles)

Speaking – Simple problems and suggesting solutions.

Reading: Motivational stories on Professional Competence, Professional Ethicsand Life Skills (subject-specific)

Writing Studying problem and finding solutions- (Essay in 200 words)

Grammar-Make simple sentences

Vocabulary -Fixed expressions

SUGGESTED ACTIVITIES

Unit I

Listening: Links for formal conversation can be given - Gap filling exercises –Multiple Choice questions – Making notes.

Speaking - Role play activity

Reading – Note making. Note-Taking.

Writing: Guided Writing (developing hints)Email

Grammar: Vocabulary – Worksheets – Games.

Unit II

Listening-

Process Descriptions (Processes of Condensation and Evaporation./Process of Measuring the thickness of a wire using a Screw -Gauge./process of Exaction of sugar from sugarcane)

Speaking – Role Play

Reading – Multiple choice questions - Evaluative answers – Classifying and labeling

Writing - Picture description – Description of natural phenomena (rainbow, earthquake, volcanic eruption, erosion, natural disasters in 150 to 200 words).

Vocabulary: Expansion of compound nouns

Unit III

Listening- Gap fill exercises – Listening comprehension

Speaking -Debates

Reading -Reading comprehension

Writing – Essay Writing

Grammar - Vocabulary, Activities, Worksheets & Games.

Unit IV

Listening - Note taking (of listening & viewing items) - Filling a table based onthe listening item.

Speaking – JAM, Presentations. (PPT-TECHNICAL)

Reading-Reading comprehension

Writing– Difference between recommendations and instructions Questions/MCQs based on graphs/flow diagrams/charts

Grammar: Vocabulary – Activities, Worksheets & Games.

Unit V

Listening – Radio News/ TV-News telecast /

Speaking - Watch or listen to documentaries and ask questions

Reading - Readingmotivational stories (success stories in subject area)

Writing - Essay writing.

Grammar -Vocabulary –Activities, Worksheets & Games

PROFESSIONAL ETHICS

II SEMESTER

COURSE CODE: 22UGCES

CORE COURSE: ENVIRONMENTAL SCIENCE

Objectives:

- To appreciate the scope of Environmental Studies, Community ecology and the interdisciplinary nature of environmental issues
- To have a basic knowledge of Natural resources its classification, concepts, and naturalresources of India.
- The course designed to gain knowledge on values of biodiversity and conservation on global,national, and local scales
- To study about sources and effects of environmental pollution like air, water, soil, thermal,marine, nuclear and noise
- To understand the concerns related to Sustainable Development on environment and health
- To introduce the students in the field of Law and Policies and Acts both at the national and international level relating to environment.

Unit 1 The Multidisciplinary nature of environmental studies

Definition, scope and importance. (2 lectures)

Need for public awareness

Unit 2 Natural Resources:

Renewable and non-renewable resources:

Natural resources and associated problems.

a) Forest resources: use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forests and tribal people.

b) Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams benefits and problems.

c) Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies.

d) Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.

e) Energy resources: Growing energy needs, renewable and non renewable energy sources, use of alternate energy sources. Case studies.

f) Land resources: Land as a resources, land degradation, man induced Landslides, soil erosion and desertification.

Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

(8 lectures)

Unit III Ecosystems

- Concept of an ecosystem.
- Structure and function of an ecosystem.
- Producers, consumers and decomposers
- Energy flow in the ecosystem
- Ecological succession.
- Food chains, food webs and ecological pyramids
- Introduction, types, characteristic features, structure and function of the following ecosystem:-
- a. Forest ecosystem
- b. Grassland ecosystem
- c. Desert ecosystem
- d. Aquatic ecosystems, (ponds, streams, lakes, rivers, oceans, estuaries)

(6 lectures)

Unit IV Biodiversity and its conservation

- Introduction – Definition : Genetic, species and ecosystem diversity
- Biogeographical classification of India
- Value of biodiversity : consumptive use, productive use, social, ethical, aesthetic and option values
- Biodiversity at global, National and local levels
- India as a mega-diversity nation
- Hot-spots of biodiversity
- Threats to biodiversity : habitat loss, poaching of wildlife, man-wildlife conflicts.
- Endangered and endemic species of India
- Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.
- Biological Diversity Act 2002/ BD Rules, 2004

(8 lectures)

Unit V Environmental Pollution

Definition

Causes, effects and control measures of

a. Air Pollution
b. Water Pollution

c. Soil Pollution
d. Marine Pollution
e. Noise pollution
f. Thermal Pollution
g. Nuclear hazards

- Solid waste Management: Causes, effects and control measures of urban and industrial wastes.
- Role of an individual in prevention of pollution
- Pollution case studies
- Disaster management: floods, earthquake, cyclone and landslides.
- Ill-Effects of Fireworks: Firework and Celebrations, Health Hazards, Types of Fire, Firework and Safety

(8 lectures)

Unit VI Social Issues and the Environment

- From Unsustainable to Sustainable development.
- Urban problems related to energy.
- Water conservation, rain water harvesting, watershed management.
- Resettlement and rehabilitation of people; its problems and concerns.

Case studies

- Environmental ethics: Issues and possible solutions.
- Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case studies.
- Wasteland reclamation.
- Consumerism and waste products.
- Environment Protection Act.
- Air (Prevention and Control of Pollution) Act.
- Water (Prevention and Control of Pollution) Act.
- Wildlife Protection Act.
- Forest Conservation Act.
- Issues involved in enforcement of environmental legislation
- Public awareness.

(7 lectures)

Unit VII Human Population and the Environment

- Population growth, variation among nations.
- Population explosion – Family Welfare Programmes
- Environment and human health
- Human Rights - Value Education
- HIV/ AIDS - Women and Child Welfare
- Role of Information Technology in Environment and human health
- Case studies.

Unit VIII Field Work

- Visit to a local area to document environmental assets-river / forest/ grassland/ hill / mountain

References:

1. Agarwal, K.C. 2001 Environmental Biology, Nidi Public Ltd Bikaner.
2. Bharucha Erach, The Biodiversity of India, Mapin Publishing Pvt ltd, Ahamedabad – 380013, India, E-mail: mapin@icenet.net(R)
3. Brunner R.C. 1989, Hazardous Waste Incineration, McGraw Hill Inc 480 p
4. Clark R.S. Marine Pollution, Clanderson Press Oxford (TB)
5. Cunningham, W.P.Cooper, T.H.Gorhani E & Hepworth, M.T. 2001.
6. De A.K. Environmental Chemistry, Wiley Eastern Ltd
7. Down to Earth, Centre for Science and Environment (R)
8. Gleick, H.P. 1993. Water in crisis, Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute Oxford University, Press 473p.
9. Hawkins, R.E. Encyclopedia of India Natural History, Bombay Natural History Society, Bombay (R)
10. Heywood, V.H & Watson, R.T. 1995. Global Biodiversity Assessment. Cambridge University Press 1140 p.
11. Jadhav, H & Bhosale, V.M. 1995. Environmental Protection and Laws Himalaya Pub. House, Delhi 284 p.
12. Mckinney, M.L. & Schoch R.M. 1996. Environmental Science systems & Solutions, Web enhanced edition 639 p.
13. Mhaskar A.K. Matter Hazardous, Techno-Science Publications (TB)
14. Miller T.G. Jr. Environmental Science, Wadsworth Publishing Co. (TB)
15. Odum, E.P. 1971 Fundamentals of Ecology. W.B. Saunders Co. USA. 574 p
16. Rao MN & Datta, A.K. 1987 Waste Water treatment, Oxford & IBH Publication Co. Pvt Ltd 345 p.
17. Sharma B.K. 2001 Environmental chemistry Goel Publ House, Meerut.
18. Survey of the Environment, The Hindu (M).
19. Townsend C. Harper, J and Michael Begon, Essentials of Ecology, Blackwell science (TB)
20. Trivedi R.K. Handbook of Environmental Laws, Rules, Guidelines, Compliances and Standards, Vol. I and II, Enviro Media (R).
21. Trivedi R.K. and P.K. Goel, Introduction to air pollution, Techno-Science Publications (TB).
22. Wagner K.D. 1998 Environmental Management. W.B. Saunders Co. Philadelphia USA 499 p

(M) Magazine (R) Reference (TB) Textbook

23.http://nbaindia.org/uploaded/Biodiversityindia/Legal/33%20Biological%20Diversity%

24.Rules,%202004.pdf.

PROFESSIONAL ETHICS

Second Year | **CORE COURSE III** | **Semester III**

PROGRAMMING IN PYTHON

Code: 22SCCCA3 | **(Theory)** | **Credit: 5**

COURSE OBJECTIVES:

- To develop programs using functions and pass arguments in Python.
- To write programs using loops and decision statements in Python.
- To design and program Python applications.

UNIT - I:

Introduction to Python: Features of Python - How to Run Python - Identifiers - Reserved Keywords - Variables - Comments in Python - Indentation in Python - Multi-Line Statements - Multiple Statement Group (Suite) - Quotes in Python - Input, Output and Import Functions - Operators. Data Types and Operations: Numbers – Strings – List – Tuple – Set – Dictionary – Data type conversion.

UNIT - II:

Flow Control: Decision Making – Loops – Nested Loops – Types of Loops. Functions: Function Definition – Function Calling - Function Arguments - Recursive Functions - Function with more than one return value.

Unit - III:

Modules and Packages: Built-in Modules - Creating Modules - import Statement - Locating Modules - Namespaces and Scope - The dir() function - The reload() function - Packages in Python - Date and Time Modules. File Handling- Directories in Python.

UNIT - IV:

Object-Oriented Programming: Class Definition - Creating Objects - Built-in Attribute Methods - Built-in Class Attributes- Destructors in Python – Encapsulation - Data Hiding – Inheritance - Method Overriding- Polymorphism.

UNIT - V:

Exception Handling: Built-in Exceptions-Handling Exceptions- Exception with Arguments - Raising Exception - User-defined Exception - Assertions in Python. Regular Expressions: The match() function - The search() function - Search and Replace - Regular Expression Modifiers: Option Flags-Regular Expression Patterns- Character Classes-Special Character Classes - Repetition Cases - findall() method - compile()

method.

UNIT – VI CURRENT CONTOURS (For continuous internal assessment only):

An Introduction to Interactive Programming in Python - Study on Julia – an high level language approach.

REFERENCES:

1. Jeeva Jose and P. Sojan Lal, "Introduction to Computing and Problem Solving with PYTHON", Khanna Book Publishing Co, 2016.
2. Mark Summerfield. —Programming in Python 3: A Complete introduction to the Python Language, Addison-Wesley Professional, 2009.
3. Martin C. Brown, —PYTHON: The Complete Reference‖, McGraw-Hill, 2001
4. Wesley J. Chun, "Core Python Programming", Prentice Hall Publication, 2006.
5. Timothy A Budd, "Exploring Python", Tata McGraw Hill, New Delhi, 2011
6. Jake Vander Plas, "Python Data Science Handbook: Essential Tools for Working with Data", O'Reilly Media, 2016.
7. Allen B. Downey, ``Think Python: How to Think Like a Computer Scientist, 2nd edition, Updated for Python 3, Shroff/O Reilly Publishers, 2016
8. Guido van Rossum and Fred L. Drake Jr, —An Introduction to Python – Revised and updated for Python 3.2, Network Theory Ltd., 2011.

COURSE OUTCOMES:

Upon successful completion of this course the students would be able:

- To recall and understand the features of python programming language
- To illustrate various programming mechanism used in python
- To apply various language construct to write simple programs in python
- To examine the application of object oriented concept in python
- To distinguish the various constructs used in python.

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CORE PRACTICAL III

Second Year | **PROGRAMMING IN PYTHON LAB** | **Semester III**

Code :22SCCCA3P | **(Practical)** | **Credit: 4**

COURSE OBJECTIVES:

- To write, test, and debug simple Python programs.
- To implement Python programs with conditionals and loops.
- To represent compound data using Python lists, tuples, and dictionaries.

1. Flow controls, Functions and String Manipulation
2. Operations on Tuples and Lists
3. Operation on sets
4. Operations on Dictionary
5. Simple OOP– Constructors – create a class for representing a car
6. Method Overloading – create classes for vehicle and Bus and demonstrate method overloading
7. Files – Reading and Writing – perform the basic operation of reading and writing with student file
8. Regular Expressions
9. Modules
10. Packages
11. Exception Handling

COURSE OUTCOMES:

Upon successful completion of this course the students would be able to:

- Write simple programs using control structures, functions and strings
- Develop programs using tuples, lists, sets and dictionary
- Write simple programs using Constructors, Method overloading and inheritance
- Develop programs using files and regular expressions
- Write simple programs using packages and exception handling.

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PROFESSIONAL ETHICS

Second Year **Semester III**

ALLIED COURSE-I PRINCIPLES OF ACCOUNTING

Code: 22SCACAOB1 **(Theory)** **Credit: 4**

LEARNING OBJECTIVES:

- To enable the students to understand the basic principles and concepts of Accountancy.
- To gain the knowledge to prepare the Cash Book and Bank Reconciliationstatement.
- To enhance the students to prepare the Final accounts for Sole Traders
- To help students gain knowledge about Rectification of errors.
- In overall students can acquire conceptual knowledge and prepare the Bills ofExchange.

UNIT- I:

Accounting concepts -Conventions - Rules of Double entry book keeping.Journal -Ledger – Trial Balance.

UNIT -II:

Cash Book – Three Column Cash Book Bank Reconciliation statement.

UNIT -III:

Final Accounts of Sole Traders: Trading and Profit and Loss Account, BalanceSheet.

UNIT -IV:

Errors disclosed by Trial Balance and Not disclosed by Trial Balance - Rectification of errors, Suspense Account.

UNIT -V:

Bills of Exchange - Renewal of Bill - Retiring of Bills - Notary charges.

UNIT –VI CURRENT CONTOURS (For continuous Internal Assessment Only):

Contemporary Development related to the course during the Semester concerned.

TEXT AND REFERENCE BOOKS (Latest revised edition only)

1. R.L. Gupta and Radhaswamy- Financial Accounting - S.Chand Publishers-Delhi.
2. S.P. Jain and K.L. Narang, **"Advanced Accounting**," Kalyani Publishers,New Delhi

3. RSN. Pillai, Bagavathi S. Uma, "Advanced **Accounting**," S. Chand &Co, New Delhi.
4. M.C. Shukla, **"Advanced Accounts**," S. Chand and Co., New Delhi.
5. Mukerjee and Haneef, **Advanced Accountancy,** Tata McGraw Hill, New Delhi.
6. Arulanandam**, "Advanced Accountancy**," Himalaya Publication,Mumbai.
7. R.L. Gupta & V.K. Gupta "**Principles and practice of Accountancy"**, Eleventh edition-2005 Sultan & Sons, New Delhi
8. S.Manikandan& R.Rakesh Sankar**," Financial Accounting**," Scitech Publications Pvt Ltd, Chennai. Volume I & II.
9. T.S.Reddy & Dr.A.Murthy, **"Financial Accounting**," Margham Publications, Chennai.
10. Tulsian., P.C.(2016) Financial Accounting, Tata Mcgraw-Hill, New Delhi.

LEARNING OUT COMES:

On successful completion of the subject, the students acquired knowledge about:

- The Concepts and Conventions of Financial Accounting.
- Preparation of Accounts of cash book.
- Accounting for sole traders with adjustment entries.
- Rectification of Errors.
- Preparation of Bills of Exchange.

PROFESSIONAL ETHICS

Second Year **Semester III**

PROFESSIONAL ENGLISH-SEMESTER-II

[PART-III -ADD ON COURSE]

Weightage: 4 Credits **Duration: 90hrs**

Code: 22PELPS2

Objectives:

The Professional Communication Skills Course is intended to help Learners in Arts and Science colleges

- Develop their competence in the use of English with particular reference to the workplace situation.
- Enhance the creativity of the students, which will enable them to think of innovative ways to solve issues in the workplace.
- Develop their competence and competitiveness and thereby improve their employability skills.
- Help students with a research bent of mind develop their skills in writing reports and research proposals.

Unit 1- Communicative Competence **(18 hrs)**

Listening – Listening to two talks/lectures by specialists on selected subject specific topics - (TED Talks) and answering comprehension exercises (inferential questions)

Speaking: Small group discussions (the discussions could be based on the listening and reading passages- open ended questions

Reading: Two subject-based reading texts followed by comprehension activities/exercises

Writing: Summary writing based on the reading passages.

Grammar and vocabulary exercises/tasks to be designed based on the discourse patterns of the listening and reading texts in the book. This is applicable for all the units.

Unit 2 - Persuasive Communication **(18 hrs)**

Listening: listening to a product launch- sensitizing learners to the nuances of persuasive communication

Speaking: debates – Just-A Minute Activities

Reading: reading texts on advertisements (on products relevant to the subject areas) and answering inferential questions

Writing: dialogue writing- writing an argumentative /persuasive essay.

Unit 3- Digital Competence (18 hrs)

Listening to interviews (subject related)

Speaking: Interviews with subject specialists (usingvideo conferencing skills)

Creating Vlogs (How to become a vlogger and use vlogging tonurture interests – subject related)

Reading: Selected sample of Web Page (subject area) Writing: Creating Web Pages

Reading Comprehension: Essay on Digital Competence for Academic and Professional Life.

The essay will address all aspects of digital competence in relation to MS Office and how they can be utilized in relation to work in the subject area

Unit 4 - Creativity and Imagination (18 hrs)

Listening to short (2 to 5 minutes) academic videos (prepared by EMRC/ other MOOC videos on Indian academic sites – E.g. https://www.youtube.com/watch?v=tpvicScuDy0)

Speaking: Making oral presentations through short films – subject based Reading: Essay on Creativity and Imagination (subject based)

Writing – Basic Script Writing for short films (subject based)

- Creating blogs, flyers and brochures (subject based)
- Poster making – writing slogans/captions(subject based)

Unit 5- Workplace Communication& Basics of Academic Writing (18 hrs)

Speaking: Short academic presentation using PowerPoint

Reading & Writing: Product Profiles, Circulars, Minutes of Meeting. Writing an introduction,

paraphrasing

Punctuation(period, question mark, exclamation point, comma, semicolon, colon, dash, hyphen, parentheses, brackets, braces, apostrophe, quotation marks, and ellipsis)

Capitalization (use of upper case)

Outcomes of the Course.

At the end of the course, learners will be able to,

- Attend interviews with boldness and confidence.
- Adapt easily into the workplace context, having become communicatively

competent.

- Apply to the Research &Development organisations/ sections in companies and offices with winning proposals.

Instruction to Course Writers:

1. **Acquisition of subject-related vocabulary should not be overlooked**. Textboxes with relevant vocabulary may be strategically placed as a Pre Task or in Summing Up
2. Grammar may be included if the text lends itself to the teaching of a Grammatical item. However, testing and evaluation does not include Grammar.

PROFESSIONAL ETHICS

Second Year **NON MAJOR ELECTIVE COURSE - I** **Semester – III**

1. E-COMMERCE

Code:22BNMEBB1 **(Theory)** **Credit: 2**

COURSE OBJECTIVES:

- To understand the conceptual foundations of marketing management as afunctional area ofbusiness.
- Analyse the impact of E-commerce on business models and strategy.
- Explain the process that should be followed in building an E-commerce presence.

UNIT- I:

Introduction to E-Commerce– Electronic Commerce Framework– Electronic commerce and Media convergence – The anatomy of E-Commerce Applications – Components of the I Way – Network Access Equipment – Global Information Distribution Networks – Internet Terminology –NSF NET: Architectureand Components- National Research and Educational Network.

UNIT- II:

Electronic Commerce and World Wide Web: Architectural Frame work for E-Commerce – WWW Architecture – Hypertext Publishing – Consumer Oriented Applications–Mercantile Process Models – Consumer's Perspective – Merchant's Perspective – Electronic Payment Systems (EPS) –Types-Designing EPS -Smart Cards and EPS – Credit Cards and EPS.

UNIT- III:

Electronic Data Interchange (EDI): Applications – Security and Privacy Issues–Software Implementations – Value Added Networks – Internal Information System – Work-flow Automation and Coordination – Customization– Supply Chain Management.

UNIT- IV:

Marketing on the Internet: Advertising on the Internet – Charting the On-Line Marketing Process –E- Commerce Catalogs or Directories – Information Filtering – Consumer-Data Interface:Emerging Tools.

UNIT- V

Multimedia and Digital Video: Concepts – Digital Video and E-Commerce – VideoConferencing–Frame Relay– Cell Relay – Mobile Computing -Frame Work –Wireless Delivery Technology –Cellular Data Communication Protocols.

UNIT-VI CURRENT CONTOURS (For Continuous Internal Assessment Only) :

Contemporary Developments Related to the E - Commerce- Studying: Electronic data interchange,Security and Privacy Issues - Group Discussion ethical issues on E – Commerce.

TEXT BOOKS:

1. Turban, E., Outland, J., King, D., Lee, J. K., Liang, T., & Turban, D. C. Electronic Commerce: A Managerial and Social Networks Perspective (Springer Texts in Business and Economics) Springer, 2017.
2. Chaffey, D., Hemphill, T., & Edmundson-Bird, D. (2019). Digital Business and E-Commerce Management (7th ed.). Pearson 2018.

REFERENCES BOOKS:

1. Pribyl, I., & Pribyl, R. From Nothing: Everything You Need to Profit from Affiliate Marketing, Internet Marketing, Blogging, Online Business, e-Commerce and More. The Free Internet MarketingProject, 2019.
2. Frontiers of Electronic Commerce- Ravi Kalakota, Andrew Winston, 2018.
3. Chakraborty, S., & Tyagi, P. E-Commerce for Entrepreneurs. BPB PUBN, 2021.

E - RESOURCES

1. https://www.edx.org/learn/ecommerce/
2. https://www.coursera.org/courses?query=e-commerce/
3. https://www.udemy.com/topic/e-commerce/

COURSE OUTCOMES:

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

- To identify core concepts of marketing and the role of marketing in business and society. Knowledge of social, legal, ethical and technological forces on marketing decision-making.
- Appreciation for the global nature of marketing and appropriate measures to operate effectively in international settings.
- Ability to develop marketing strategies based on product, price, place and promotionobjectives.
- Ability to create an integrated marketing communications plan which includespromotional strategiesand measures of effectiveness.
- Ability to communicate the unique marketing mixes and selling propositions forspecific product offerings.

PROFESSIONAL ETHICS

Second Year | **CORE COURSE IV** | **Semester IV**

DATABASE MANAGEMENT SYSTEMS

Code 22SCCCA4 | **(Theory)** | **Credit: 5**

COURSE OBJECTIVES:

- To impart the basic database concepts, applications, data models, schemas and instances.
- To familiarize Entity Relationship model for a database.
- To Demonstrate the use of constraints and relational algebra operations.

UNIT - I:

Introduction: Database-System Applications- Purpose of Database Systems - View of Data -Database Languages - Relational Databases - Database Design -Data Storage and Querying Transaction Management -Data Mining and Analysis - Database Architecture - Database Users and Administrators - History of Database Systems.

UNIT - II:

Relational Model: Structure of Relational Databases -Database Schema - Keys – Schema Diagrams - Relational Query Languages - Relational Operations Fundamental Relational- Algebra Operations Additional Relational-Algebra Operations- Extended Relational-Algebra Operations - Null Values - Modification of the Database.

UNIT - III:

SQL Overview of the SQL Query - Language - SQL Data Definition - Basic Structure of SQL Queries - Additional Basic Operations - Set Operations - Null Values Aggregate Functions - Nested Subqueries - Modification of the Database - Join Expressions - Views - Transactions - Integrity Constraints - SQL Data Types and Schemas – Authorization.

UNIT - IV:

Relational Languages: The Tuple Relational Calculus - The Domain Relational Calculus Database Design and the E-R Model: Overview of the Design Process - The Entity-Relationship Model - Reduction to Relational Schemas - Entity- Relationship Design Issues - Extended E-R Features - Alternative Notations for Modeling Data - Other Aspects of Database Design

UNIT - V:

Relational Database Design: Features of Good Relational Designs - Atomic Domains and First Normal Form - Decomposition Using Functional Dependencies - Functional-Dependency Theory - Decomposition Using Functional Dependencies - Decomposition Using Multivalued Dependencies-More Normal Forms - Database-Design Process

UNIT - VI: CURRENT CONTOURS (for Continuous Internal Assessment Only):

Contemporary Developments Related to the Course during the Semester Concerned.

REFERENCES:

1. Database System Concepts, Sixth edition, Abraham Silberschatz, Henry F. Korth, S. Sudarshan, McGraw-Hill-2010.
2. Jagdish Chandra Patni, Hitesh Kumar Sharma, Ravi Tomar, Avita Katal., "Database Management System: An Evolutionary Approach", CRC Press, 2022.
3. Abraham Silberschatz, Hendry F. Korth, S Sudharshan," Database System Concepts", 6th Edition, McGraw Hill International, 2019.
4. Blokdyk, Gerardus, and Blokdyk, Gerardus, "RDBMS Relational Database Management System a Complete Guide", 2020 Edition, Emereo Pty Limited, 2019.
5. Wilfried Lemahieu, Seppevanden Broucke, Bart Baesens, "Principles of Database Management: The Practical Guide to Storing, Managing and Analyzing Big and Small Data", Cambridge University Press, 2018.
6. C.J. Date, "An Introduction to Database Systems" Addison Wesley, 2000.
7. https://tutorialspoint.dev/computer-science/dbms

COURSE OUTCOMES:

Upon successful completion of this course the students would be able to:

- Understand the basic concepts of Database Systems
- Know about SQL queries to interact with Database
- Design a Database using ER Modelling
- Apply normalization on database design to eliminate anomalies
- Analyze database transactions and to control them by applying ACID properties.

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PROFESSIONAL ETHICS

Second Year | **CORE PRACTICAL IV** | **Semester IV**

DATABASE MANAGEMENT SYSTEMS LAB

Code 22SCCCA4P | **(Practical)** | **Credit: 4**

COURSE OBJECTIVES:

- To understand the basic concepts and the applications of database systems using MYSQL.
- To create and perform basic operation with MYSQL.
- To interact with MYSQL by using nested queries, set of aggregate operations and views.

1. Create a table and perform the following basic mysql operations
   a) Set the primary key
   b) Alter the structure of the table
   c) Insert values
   d) Delete values based on constraints
   e) Display values using various forms of select clause
   f) Drop the table

2. Develop mysql queries to implement the following set operations
   a) Union
   b) Union all
   c) Intersect
   d) Intersect all

3. Develop mysql queries to implement the following aggregate functions
   a) Sum
   b) Count
   c) Average
   d) Maximum
   e) Minimum
   f) Group by clause & having clause

4. Develop mysql queries to implement following join operations
   a) Natural join
   b) Inner join
   c) Outer join-left outer, right outer, full outer
   d) Using join conditions

5. Develop mysql queries to implement nested subqueries
   a) Set membership (int, not int)
   b) Set comparison (some, all)
   c) Empty relation (exists, not exists)
   d) Check for existence of Duplicate tuples(unique, not unique)

6. Develop mysql queries to create a views and expand it.

7. Develop mysql queries to implement

a) String operations using %
b) String operations using '_'
c) Sort the element using asc,desc
[*create necessary reletions with requires attribute]

8. Consider the following database for a banking enterprise
BRANCH(branch-name:string, branch-city:string, assets:real)
ACCOUNT(accno:int, branch-name:string, balance:real)
DEPOSITOR(customer-name:string, accno:int)
CUSTOMER(customer-name:string, customer-street:string, customercity: string)
LOAN(loan-number:int, branch-name:string, amount:real)
BORROWER(customer-name:string, loan-number:int)
   i. Create the above tables by properly specifying the primary keys and the foreign keys
   ii. Enter at least five tuples for each relation
   iii. Find all the customers who have at least two accounts at the Main branch.
   iv. Find all the customers who have an account at all the branches located in a specific city.
   v. Demonstrate how you delete all account tuples at every branch located in a specific city.
   vi. Generate suitable reports.
   vii. Create a suitable front end for querying and displaying the results.

COURSE OUTCOMES:

Upon successful completion of this course the students would be able to:

- Write queries to manipulate data.
- Demonstrate the aggregate functions and set operations.
- Apply the join operations.
- Know about usage of nested subqueries
- Understand the method to create views

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PROFESSIONAL ETHICS

Second year **Semester IV**

ALLIED COURSE-II COMPUTER APPLICATION IN BUSINESS

Code:22SCACAOB2 **(Theory and Practical)** **Credit:2**

LEARNING OBJECTIVES:

- To enable the students to know the importance of computer application in business. andMS word
- To learn MS Excel
- To understand computerized accounting particularly Tally
- To familiar with accounting of inventories
- To know computerization of final account

UNIT –I:

Computer – Meaning – Characteristics – Areas of application – Components – Memory control unit – Input and output devices – Ms Word – Creating word documents – creating business letters using wizards – editing word documents– inserting objects – formatting documents – spelling and grammar check – word count – thesaurus, auto correct workingwith tables – opening, savings and closing documents – mail merge.

UNIT –II:

Spread sheet – Spread sheet programmes and applications – Ms Excel and features –Building work sheets – entering data in work sheets, editing and formating work sheets – creating and formatting different types of charts - application of financial and statistical function – creating, analyzing and organizing data – opening and closing work books – Introduction to Pivot tables.

UNIT –III:

Fundamentals of Computerized accounting – Computerized accounting Vs manual accounting - Architecture and customization of Tally – Features of Tally – latest version
– Configuration of Tally – Tally screens and menus – Creation of company – Creation of groups – Editing and deleting groups – Creation of ledgers – Editing and deleting ledgers – Introduction to vouchers – Vouchers entry – Payment vouchers – Receipt vouchers – Sales vouchers – Purchase vouchers – Contra vouchers – Journal vouchers – Editing and deleting vouchers.

UNIT –IV:

Introduction to Inventories – Creation of stock categories – Creation of Stock groups – Creation of Stock items- Configuration and features of stock item– Editing and deleting stocks – Usage of stocks in Vouchers entry. Purchase orders – Stock vouchers – Sales orders
– Stock vouchers – Introduction to cost – creation of cost category – Creation cost centres –
Editing and deleting cost centres & categories – Usage of cost category and cost – centres in vouchers entry – Budget and controls – Creation of budgets ~~1~~ Editing and deleting budgets – Generating and printing reports in detailed and condensed format.

UNIT- V:

Day books– Trial balance – Profit and Loss account – – Balance sheet . Ratio analysis, Cash flow statement – Fund flow statement – Cost centre report – Inventory report - Bank Reconciliation Statement.

UNIT- VI CURRENT CONTOURS (For continuous Internal Assessment Only):

Contemporary Development related to the course during the Semester concerned.

(Theory - 100 marks; UE: 75; IA: 25)

TEXT AND REFERENCE BOOKS (Latest revised edition only)

1. Computer Applications in Business – S.V. SrinivsasaVallabhan – Sultan & ChandPublication.
2. Microsoft office – Jones & Derek – John wiley & sons inc.
3. Implementing Tally – A.K. Nadhani, BPB Publications.
4. Computer Application in Business – R. Paramasivam – S.Chand & Co, New Delhi.
5. Computer Application in Business: Dr.Joseph Anbarasu, Learntech Press.

LEARNING OUTCOMES:

On successful completion of the course, the students will acquire knowledge on:

- Basics of computer application in business. and Creating and editing of word documents,opening, savings and closing documents; and mail merge
- Spread sheet programmes and applications, creating and formatting different types ofcharts, and application of financial and statistical function.
- Architecture and customization of Tally, Editing and deleting ledgers, and Vouchers entry
- Accounting of inventories, Budget and controls
- Day books, Trial balance, final account and Bank Reconciliation Statement

PROFESSIONAL ETHICS AND HUMAN VALUE

Second Year **Semester IV**

ALLIED COURSE-III

ORGANISATIONAL BEHAVIOR

Code:22SCACAOB3 **(Theory)** **Credit:4**

OBJECTIVES:

- To know the basic concepts of Organisational Behaviour.
- To know about Fundamentals of Individual behaviour.
- To understand the students Concept of Attitude
- To make the students aware of Group Behaviour and group cohesiveness
- To enhance the students to know about the functions and styles of Leadership

UNIT –I:

Organisational Behaviour : Definition, Nature and scope Models

UNIT –II:

Fundamentals of Individual behaviour, Human behaviour, Theories of personality -perceptions.

UNIT- III:

Concept of Attitude, concepts of value - Learning theories.

UNIT- IV:

Group Behaviour - reasons for group formation - Formaland informal groups - group cohesiveness - Job stress - Meaning, different kinds of stressors, coping strategies.

UNIT –V:

Leadership - Meaning, definition, functions and styles. Power and Politics - meaning,distinction between power and politics - Organisational politics.

UNIT -VI CURRENT CONTOURS (For continuous Internal Assessment Only):

Recent Trends, assignments and Seminars

TEXT AND REFERENCE BOOKS :(Latest revised edition only)

1. L.M. Prasad – OrganisationalBehaviour – Sultan Chand & Sons, Delhi.
2. K. Aswathappa – Essentials of OrganisationalBehaviour, McGraw Hill, Delhi.
3. Fred Luthans, Organisation Behaviour, McGraw Hill, Delhi.
4. Hell Riegel, Slocum and Woodman, OrganisationBehaviour, South Western, ThomsonLearning.
5. R.S. Dwivdi, Human Relations and Organizational Behaviour, Mc Millan India Ltd., 5thEdition.
6. Stephen P. Robbins, Organizational Behaviour, 9th Edition, Pearson Education, NewDelhi,
7. P.Subba Rao, Essentials of Human Resource Management and Industrial Relations,Himalaya Publishing House.

8. C.S. VenkataRatnam and B.K.Srivastava, "Personnel Management and HumanResources, TMH.
9. P.C. Tripathi, Personnel Management and Industrial Relations , Sultan Chand & Sons.
10. B.S.Bhatia and G.S.Batra Human Resource Management –– Deep & Deep Publications.

OUTCOMES :

On successful completion of the subject, the students acquired knowledge about:

- The meaning and concept of Organisational Behaviour..
- Fundamentals of Individual behavior and Theories of personality
- Attitude, concepts of value and Learning.
- Group Behaviour, group formation and Job stress
- Leadership and styles of Leadership.

PROFESSIONAL ETHICS

Second Year | **NON MAJOR ELECTIVE COURSE - II** | **Semester-IV**

BUSINESS ETHICS

Code: 22NMEBB3 | **(Theory)** | **Credit: 2**

COURSE OBJECTIVES:

- To understand the concept of Ethical value
- Analyze the ethical issues involved in business
- The best way to manage ethical conduct in business

UNIT – I:

Business Ethics - Meaning – Definition – Nature – Importance – Ground Rules – Myths – Methodology – Characteristics of Managerial Ethics - Factors Influencing Business Ethics - Types Of Ethical Issues- Corruption In Businesses.

UNIT – II:

Ethical Values - Work Ethics – Work Culture – Ethical Theories – Ethical values Environmental Ethics – Consumer Protection..

UNIT – III:

Managing Ethical Conduct - Skills for Managers - Whistle Blowing - Individual differences and Ethical Judgments – Cognitive Barriers to Ethical Judgment- Corporate Social Responsibility towards the community.

UNIT – IV:

Corporate Governance - Issues – need - corporate governance code - transparency & disclosure - role of auditors - board of directors and share holders - corporate scams - Committees in India.

UNIT – V:

Consumerism – unethical issue in sales, marketing and technology – competitive strategy.

UNIT-VI CURRENT CONTOURS (For Continuous Internal Assessment Only) :

Practical: Collection of data about unethical strategy followed in the products 34

TEXT BOOKS:

1. Dr. S. Sankaran., Business Ethics & Values, 2010, Margham Publication.
2. Fernando. A. C., Business Ethics – An Indian Perspective, 3rd Edition, Pearson Publication

REFERENCE BOOKS:

1. Hasnian Baber, Business Ethics and Corporate Governance, 2nd Edition, Global Vision Publishing House
2. Chakraborty, S.K., Management by Values, 2014, Oxford Univ.Press.
3. Velasquez, Business Ethics - Concepts and Cases, Prentice Hall, 5th Edition.

E – RESOURCES:

- https://www.economicsdiscussion.net/business/business-ethics/31798
- https://tsubakimoto.com/sustainability/governance/corporate/control-policy/
- https://elink.io/p/consumerism-9a251f9

COURSE OUTCOME:

- □ To outline the significance of ethics in business.
- □ To known the culture of organisation
- □ To appreciate the best ethical practices in every actions of organization
- □ To recognize the importance of Corporate Social Responsibility.
- □ Students can the understand the unethical issues in the environment

V SEMESTER
COURSECODE:22SCCCA5
CORE COURSE: FUNDAMENTALS OF ALGORITHMS

COURSEOBJECTIVES:

- To study the fundamentals of algorithms.
- To understand trees, traversals and about shortest path.
- To know about the different algorithms related to sorting, optimality and back tracking.

UNIT-I:

Introduction – Algorithm Specification, Pseudo code for expressingalgorithms, Performance Analysis-Space complexity, Time complexity, Asymptotic Notation-Big oh notation, Omega notation, Theta notation and Little oh notation, Performance Measurement, Randomized algorithms.

UNIT-II:

Trees–Binary tree representations–Tree Traversal – Threaded Binary Trees – Binary Tree Representation of Trees – Graphs and Representations –Traversals, Connected Components and Spanning Trees – Shortest Paths and Transitive closure– Activity Networks–Topological Sort and Critical Paths.

UNIT-III:

Algorithms – Priority Queues – Heaps – Heap Sort – Merge Sort – Quick Sort –Binary Search– Finding the Maximum and Minimum.

UNIT-IV:

Greedy Method: The General Method – Optimal Storage on Tapes – Knapsack Problem – Job Sequencing with Deadlines – Optimal Merge Patterns.

UNIT-V:

Back tracking :The General Method –The 8-Queens Problem – Sum of Subsets– Graph Coloring.

UNIT-VI: CURRENTCONTOURS (for Continuous Internal Assessment Only):

Contemporary Developments Related to the Course during the Semester Concerned.

REFERENCES:

1. Ellis Horowiz, SartajSahni, "Fundamentals of Data Structure",Galgotia Publications, 2008.

2. Ellis Horowiz,Sartaj Sahni and Sanguthevar Rajasekaran,"Computer Algorithms", University Press, 2008.
3. SeymourLipschutz,"DataStructures",TataMcgrawHill,Schaum'sOutlineSeries, 2014.
4. ThomasH.Cormen,CharlesE.Leiserson,RonaldL.RivestandCliffordStein, "Introduction to Algorithms", Third Edition, PHI Learning Private Limited, 2012.
5. Alfred V. Aho, John E. Hopcroft and Jeffrey D. Ullman, "Data Structures and Algorithms
6. AnanyLevitin,"IntroductiontotheDesignandAnalysisofAlgorithms",Third Edition, Pearson Education, 2012.
7. ThomasH.Cormen,CharlesE.Leiserson,RonaldL.Rivest,CliffordStein, "IntroductiontoAlgorithms",MITPress,2022.
8. https://www.tutorialspoint.com/data_structures_algorithms/algorithms_basics.htm
9. https://www.tutorialspoint.com/design_and_analysis_of_algorithms/index.htm

COURSEOUTCOMES:

Upon successful completion of this course the students would be able to:

- Know the basic concepts of algorithms.
- Understand trees and shortest path algorithms.
- Compare and contrast different sorting algorithms.
- Comprehend greedy and optimality algorithms.
- Appreciate the back tracking concept and its different algorithms.

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PROFESSIONAL ETHICS

V SEMESTER
COURSECODE:22SCCCA6
CORECOURSE: COMPUTERNETWORKS

COURSEOBJECTIVES

- To describe the general principles of Computer Networks.
- To describe how the different layers in a computer network work.
- To know about Wired LAN: IEEE Standards and Satellite networks.

UNIT-I:

Data Communication – Networks – The Internet – Protocols and Standards –OSI Model- Layers in OSI Model - TCP/IP Protocol Suite – Addressing.

UNIT-II:

Analog and Digital – Digital Signals – Transmission Impairment – Performance– Multiplexing – Guided Media – Unguided Media. Switching: Circuit SwitchedNetworks– Datagram Networks–Virtual Circuit Networks

UNIT-III:

DataLinkLayer:ErrorDetectionandCorrection-Introduction–BlockCoding: Error detection, Error correction – Data Link Control: Framing – Flow and Error Control–Protocols– Noiseless Channels–Noisy channels–HDLC–Point to Point Protocol.

UNIT-IV:

Wired LAN: IEEE Standards – Standard Ethernet. Wireless LAN: IEEE 802.11– Bluetooth. Connecting LANs: Connecting Devices – Virtual LANs. Wireless WAN: Cellular Telephony – Satellite Networks. Network Layer-Logical Addressing: IPv4 Addresses – IPv6 Addresses.

UNIT-V:

Transport Layer: Process to Process Delivery – User Datagram Protocol - TCP. ApplicationLayer:DomainNameSpace–DNSintheInternet–ElectronicMail– File Transfer. WWW: Architecture – HTTP.

UNIT-VI CURRENT CONTOURS (for Continuous Internal Assessment Only):

ContemporaryDevelopmentsRelatedtotheCourseduringtheSemesterConcerned.

REFERENCES:

1. BehrouzA.Forouzan,“Data Communications and Networking”,McGraw-Hill Companies, New York, 5th Edition, 2017.

2. WilliamStallings“Dataandcomputercommunications”,PrenticeHallofIndia,7th Edition, 2004.
3. AndrewSTanenbaum,“ComputerNetworks”,PrenticeHallofIndia,NewDelhi,2013.
4. DrM.P.Vani,"DataCommunicationandComputerNetwork",NotionPress,2019.
5. HazimGaber,"UnderstandingComputerNetworks2020",IndependentlyPublished, 2020.
6. Grigorios N. Beligiannis, Ram Palanisamy, S. Smys, Álvaro Rocha,"ComputerNetworksandInventiveCommunicationTechnologies", Springer, 2021.
7. https://www.guru99.com/data-communication-computer-network-tutorial.html

COURSEOUTCOMES:

Upon successful completion of this course the students would be able to:

- Recall the basic concepts of computer networks.
- SummarizethetechnicalspecificationsofvariouslayersoftheOSImodelina computer network.
- Identify the appropriate protocols and standards for computer networks.
- Classify technical factors of cellular networks and satellite communication.
- Know about the different functionalities of an application layer.

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PROFESSIONAL ETHICS

V SEMESTER
COURSE CODE: 22SCCCA7
CORE COURSE :Web Technology

COURSEOBJECTIVES:

- To understand the basic concepts related to HTML, JavaScript and VB script.
- To familiarize various concepts associated with Dynamic web pages.
- To know about data representation with XML and XSL.

UNIT-I:

HTML: Introduction – SGML – Outline of an HTML Document – Head Section–Body Section – HTML Forms.

UNIT-II:

Java Script: Introduction – Language Elements – Objects of Java Script – Other Objects – Arrays.

UNIT-III:

VB Script: Introduction –Embedding VB Script Code in an HTML Document –Comments – Variables – Operators – Procedures – Conditional Statements– Looping Constructs– Object and VBScript –Cookies.

UNIT-IV:

Dynamic HTML(DHTML): Introduction – Cascading Style Sheets(CSS) – DHTML Document Object Model and Collections – Event Handling.

UNIT-V:

Extensible Mark-Up Language (XML): Introduction – HTML vs XML – Syntax of the XML Document – XML Attributes – XML Validation – XML DTD – The Building Blocks of XML Documents – DTD Elements – DTD Attributes – DTD Entities – DTD Validation – XSL – XSL Transformation.

UNIT-VI CURRENT CONTOURS (for Continuous Internal Assessment Only):

Contemporary Developments Related to the Course during the Semester Concerned.

REFERENCES:

1. N.P. Gopalan and J.Akilandeswari, Web Technology – ADeveloper's Perspective, Prentice Hall of India Private Ltd, New Delhi, Second Edition, 2016.

2. C.Xavier,WebTechnologyandDesign,NEWAGE;Firstedition,2018
3. StevenM.Schafer,"HTML,XHTML,andCSSBible",WileyPublication,2011
4. KeithGrant,"CSSinDepth",ManningPublication,2018.
5. WilliamAlvinNewton,StevenWebber,"ComputerProgrammingJavaScript, Python, HTML, SQL, CSS", Independently Published, 2019.
6. HasanrazaANSARI,"LearnVBScript",IndependentlyPublished,2021.
7. https://www.geeksforgeeks.org/web-technology/

COURSEOUTCOMES:

Upon successful completion of this course the students would be able to:

- Understand and apply the web page concepts.
- Develop static and dynamic web pages.
- Understand the feature of Java Script and VB Script.
- Develop knowledge about XML fundamentals and usage of XML technology.
- Understand about the web design with XSL and data validation with DTD.

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V SEMESTER
COURSE CODE: 22SCCCA5P
CORE PRACTICAL: Web Technology Lab

COURSEOBJECTIVES:

- To teach the basics involved in publishing content on the World Wide Web.
- To design and implement static and dynamic website.
- To understand, analyze and create XML documents and XML Schema.

1. Design the following static web pages required for an online books to rewebsite.

   a. HOME PAGE: The static home page must contain three frames.
   b. LOGINPAGE
   c. CATOLOGUE PAGE: The catalogue page should contain the Details of all the books available in the web site in a table.
   d. REGISTRATIONPAGE

2. Write Java Script to validate the following fields of the Registration page.

   a. First Name (Name should contains alphabets and the length should not be less than 6 characters).
   b. Password(Passwordshouldnotbelessthan6characterslength).
   c. E-mailid(shouldnotcontainanyinvalidandmustfollowtheStandardpattern name@domain.com)
   d. Mobile Number(Phonenumbershouldcontain10digitsonly).
   e. Last Name and Address(should not be Empty).

3. Develop and demonstrate the usage of inline, internal and external style sheet using CSS

4. Write an HTML page including any required JavaScript that takes anumber from text field in the range of 0 to 999 and shows it in words. It should not accept four and above digits, alphabets and special characters.

5. To convert the static web pages online library into dynamic web pages using servlets and cookies.

6. Write a java script program to test the first character of a string is uppercase or not.

7. Write a program to find the Fibonacci series for n series using VB-Script

8. Write a program to display Date &Time using VB-Script.

9. Write a program to convert the string to lowercase using VB-Script.

10. Create a well-formed XML document to represent ten students' information, store it as XML file and display the document in a browser.

COURSEOUTCOMES:

Upon successful completion of this course the students would be able to:

- Develop web pages using HTML, DHTML and Cascading Styles sheets.
- Develop a dynamic web pages using Java Script(client side programming).
- Develop an interactive web applications using VBScript.
- Build and consume web services.
- Develop a Program using XML.

PROFESSIONAL ETHICS

V SEMESTER
COURSE CODE: 22SMBECA1A
MAJOR BASED ELECTIVE I COURSE: Multimedia Technologies

COURSEOBJECTIVES:

- To learn the creation of interactive media using industry – standard authoring tools.
- To impart knowledge on the integration of text, images ,animation, audio, and video into Web-based applications
- To study on the deployment of multimedia applications.

UNIT-I:

INTRODUCTION TO MULTIMEDIA: Introduction to making Multimedia-Multimedia Skills and training-Text: Using text in Multimedia-Computerand Text-Font Editing and Design Tools- Hypermedia and Hypertext.

UNIT-II:

MULTIMEDIA FILE HANDLING: Sound – Images – Animation –Video.

UNIT-III:

DIGITAL VIDEO AND IMAGE COMPRESSION :Evaluating a compression system – Redundancy and Visibility-Video compression techniques-Standardization of an algorithm – The JPEG image compression standard-ITU –T Standards – MPEG motion video compression standard-DVI Technology.

UNIT-IV:

HARDWARE , SOFTWARE AND MULTI MEDIA AUTHORING TOOLS: Multimedia Hardware: Macintosh and Windows production Platforms- Hardware Peripherals: Memory and Storage Devices, Input Devices, Output Devices, Communication Devices .Basic Software Tools.

UNIT-V:

MULTIMEDIAANDINTERNET: Internet working–connections–Internetservices– Tools for WWW – Designing WWW.

UNIT-VI CURRENT CONTOURS (for Continuous Internal Assessment Only):

ContemporaryDevelopmentsRelatedtotheCourseduringtheSemesterConcerned.

REFERENCES:

1. TayVaughan, Multimedia: MakingItWork,7thEdition,TataMc-GrawHill.,2008.
2. JohnF.KoegelBuford, Multimedia Systems,Pearsonedition,2003.

3. Ranjan Parekh,Principles of Multimedia,TMH,2006.
4. Ralf Steinmetz and Klara Nahrstedt, Multimedia: Computing, Communication and applications, Pearson Edition, 2001.
5. Syed, Mahbubur Rahman, Multimedia Technologies: Concepts, Methodologies, Tools, and Applications, Information Science Reference, 2008.
6. Banerji, Multimedia Technologies, McGraw-Hill Education (India) Pvt Limited, 2010.
7. Ze-Nian Li, Mark S. Drew, Jiangchuan Liu, Fundamentals of Multimedia. Germany, Springer International Publishing, 2014.

COURSEOUTCOMES:

Upon successful completion of this course the students would be able to:

- Apply the knowledge of the basic fundamental components of Multimedia.
- Apply the animation effects for basic multimedia formats.
- Identify compression and applying the video settings.
- Explain hardware components and software tool devices.
- Design and create web pages for different applications.

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V SEMESTER
COURSECODE:22SSBECA1
SKILL BASED ELECTIVE I COURSE: Mobile Application Development

COURSEOBJECTIVES:

- To gain a basic knowledge of Android application development
- To understand about user Interfaces for the Android platform.
- To familiarize of the Android Studio development tool.

UNIT-I:

Introduction to Android: The Android Platform, Android SDK, Eclipse Installation, Android Installation, building you First Android application, Understanding Anatomy of Android Application, Android Manifest file.

UNIT-II:

Android Application Design Essentials: Anatomy of an Android applications, Androidterminologies,ApplicationContext,Activities,Services,Intents,Receiving and Broadcasting Intents, Android Manifest File and its common settings, Using Intent Filter, Permissions.

UNIT-III:

Android User Interface Design Essentials: User Interface Screen elements, Designing User Interfaces with Layouts, Drawing and Working with Animation.

UNIT-IV:
Testing Android applications, Publishing Android application, Using Android preferences, Managing Application resources in a hierarchy, working with different types of resources.

UNIT-V:

Using Common Android APIs: Using Android Data and Storage APIs, managing data using Sqlite, Sharing Data between Applications with Content Providers, Using Android Networking APIs, Using Android Web APIs, Using Android Telephony APIs, Deploying Android Application to the World.

UNIT-VICURRENTCONTOURS(for Continuous Internal Assessment Only):

Contemporary Developments Related to the Course during the Semester Concerned

REFERENCES:

1. Lauren Darcey and Shane Conder, “Android Wireless Application

Development",PearsonEducation,2011.

2. Reto Meier, "Professional Android 2 Application Development", Wiley IndiaPvt Ltd,2010
3. MarkLMurphy,"BeginningAndroid3",ApressPublications,2011.
4. Bill Phillips, Chris Stewart, Kristin Marsicano, Brian Gardner,"Android Programming", Big Nerd Ranch, 2019.
5. Barry Burd, John Paul Mueller, "Android Application Development All in one for Dummies",Wiley Publications, 2020.
6. NamrataBandekar, Darryl Bayliss, Fuad Kamal,"Android Apprentice(Fourth Edition) Beginning Android Development with Kotlin", R R BOWKER LLC, 2021.
7. https://www.javatpoint.com/android-tutorial

COURSEOUTCOMES:

Upon successful completion of this course the students would be able to:

- Identify various concepts of mobile application programming in Android platform
- Implement the business logic in an app with java
- Understand Android User Interface Design with XML
- Know about Common Android APIs
- Deploy applications to the Android market place for distribution.

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PROFESSIONAL ETHICS & HUMAN VALUES

V SEMESTER
COURSE CODE:RUGSDC
CORE COURSE : Soft Skills Development

COURSEOBJECTIVES:

- To Develop communicative competence among the Students.
- To enhance the learner's softskills by giving adequate exposure in LSRW and subskills.
- To enable learner stoput the lifeskills into practice with confidence.

UNIT-I:KNOWTHYSELF/UNDERSTANDINGSELF:

Introduction to Soft skills - Selfdiscovery - Developing positive attitude-Improving perceptions - Forming values.

UNIT-II:INTERPERSONALSKILLS/UNDERSTANDINGOTHERS:

Developing interpersonalrelationship -Teambuilding-groupdynamics-Net working- Improved work relationship.

UNIT-III:COMMUNICATIONSKILLS/COMMUNICATIONWITHOTHERS:

Artoflistening – Artofreading –Artofspeaking –Artofwriting - Artofwriting e-mails e-mail etiquette.

UNIT-IV:CORPORATESKILLS/WORKINGWITH OTHERS:

OralPresentation–Memos– Notetaking–Notemaking andpreparing Minutes- Reports, Proposals ,Abstracts - Technical Writing.

UNIT-V:SELLINGSELF/JOBHUNTING

Writingresume/cv– interviewskills–Groupdiscussion–Mockinterview–MockGD– Goal setting - Career planning.

UNIT-VI: CURRENT CONTOURS:(for continuous internal assessment only):

REFERENCES:

1. N.Krishnasamy,Manju Dhariwel and Lalitha Krishnasamy(2015).Mastering Communication Skills and Soft Skills – Bloomburg.
2. Meena.K and V.Ayothi(2013) A Book on Development of Soft Skills(Soft Skills:A Road Map to Success), P.R. Publishers & Distributors,
3. Meera Banerjee and Krishna Mohan: Developing Communication Skills,Trinity Publishers- (Lakshmi Publications.
4. AlexK.(2012)Soft Skills– KnowYourself&KnowtheWorld,S.Chand&Company LTD, Ram Nagar, New Delhi- 110 055.

COURSEOUTCOMES:

- Develop listening, speaking, reading and writing skills in English.
- Enhance softskills and engage in arrange of communicative tasks and activities.
- Comprehend a text and identify specific and global information.
- Promote communicative abilityin both spoken and written form of the language.
- Develop interpersonalskills to maintain human relationship.
- Develop corporate skills to promote leadership qualities and team spirit.

PROFESSIONAL ETHICS

VI SEMESTER
COURSECODE:22SCCCA8
CORECOURSE:OperatingSystems

COURSEOBJECTIVES:

- To understand the basics of Operating systems and their working.
- To Learn and understand operating system services and methods.
- To understand the different types of devices connected with Operating systems.

UNIT-I:

Introduction - What Is an Operating System-Operating System Software -ABrief History of Machine Hardware -Types of Operating Systems - Brief History of Operating System Development - Object-OrientedDesign.

UNIT-II:

Early Systems: Single-User Contiguous Scheme -Fixed Partitions-Dynamic Partitions- Best-Fit versus First-Fit Allocation - Deallocation – Relocatable Dynamic Partitions. Virtual Memory: Paged Memory Allocation-Demand Paging - Page Replacement Policies and Concepts - Segmented Memory Allocation - Segmented/Demand Paged Memory Allocation - Virtual Memory - Cache Memory.

UNIT-III:

Overview- About Multi - Core Technologies - Job Scheduling Versus Process Scheduling- Process Scheduler - Process Scheduling Policies –Process Scheduling Algorithms – A Word About Interrupts – Deadlock -Seven Cases of Deadlock - Conditions for Deadlock- Modeling Deadlock-Strategies for Handling Deadlocks – Starvation - Concurrent Processes: What Is Parallel Processing - Evolution of Multiprocessors - Introduction to Multi-Core Processors - Typical Multiprocessing Configurations - Process Synchronization Software.

UNIT-IV:

Types of Devices - Sequential Access Storage Media - Direct Access Storage Devices - Magnetic Disk Drive Access Times- Components of the I/O Subsystem - Communication among Devices - Management of I/O Requests.

UNIT-V:

The File Manager - Interacting with the File Manager -File Organization – Physical StorageAllocation -AccessMethods-LevelsinaFileManagement System – Access Control Verification Module.

UNIT-VICURRENTCONTOURS(forContinuousInternalAssessment Only):

Contemporary Developments Related to the Course during the Semester Concerned.

REFERENCES:

1. AnnMcIverMcHoes,IdaM.Flynn,"UnderstandingOperatingSystems",Course Technology, Cengage Learning, 2011.
2. GregTomsho,"GuidetoOperatingSystems",CengageLearning,2020.
3. Cesar Herrera, Darrell Hajek, Flor Narciso, "Principles of OperatingSystems", Amazon Digital Services LLC - KDP Print US, 2020.
4. CesarHerrera,DarrellHajek,"PrinciplesofOperatingSystems",Independently Published,2019.
5. RemziH.Arpaci-Dusseau,AndreaC.Arpaci-Dusseau,"OperatingSystems: ThreeEasyPieces",CreateSpaceIndependentPublishingPlatform,2018.
6. AbrahamSilberschatz,PeterB.Galvin,GregGagne,"OperatingSystem Concepts", Wiley Publisher, 2018.
7. https://www.guru99.com/os-tutorial.html

COURSEOUTCOMES:

Upon successful completion of this course the students would be able to:

- Recall the basic principles and importance of the operating system in a computer.
- Illustrate the objectives and functions of the operating system components
- Identify the various operating system techniques.
- Analyse the issues and challenges of the operating system and security mechanisms.
- Evaluate the functions and features of file management in operating systems.

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PROFESSIONAL ETHICS

VI SEMESTER
COURSECODE:22SCCCA9
CORECOURSE: ProgramminginPHP

COURSEOBJECTIVES:

- To understand the basics of PHP and Ajax.
- To know about various constructs available in PHP.
- To understand and implement the AJAX based dynamic client-server interaction.

UNIT-I:

Essentials of PHP – Operators and Flow Control – Strings and Arrays.

UNIT-II:

Creating Functions – Reading Data in Web Pages – PHP Browser – Handling Power.

UNIT-III:

Object – Oriented Programming – Advanced Object – Oriented Programming.

UNIT-IV:

File Handling – Working with Databases – Sessions, Cookies,and FTP.

UNIT-V:

Ajax – Advanced Ajax – Drawing Images on the Server.

UNIT-VICURRENTCONTOURS(forContinuousInternalAssessment Only):

Contemporary Developments Related to the Course during the Semester Concerned.

REFERENCES:

1. StevenHolzner ,ThePHPCompleteReference,McGrawHill Education,2007.
2. VikramVaswani,PHP:ABeginner'sGuide,McGrawHillEducation,2008.
3. Don Gosselin, Diana Kokoska, Robert Easterbrooks,"PHP

ProgrammingwithMySQL",CourseTechnology,2010.
4. Kevin Tatroe, Peter MacIntyre, Rasmus Lerdorf," Programming PHP:Creating Dynamic Web Pages", O'Reilly Media, 2013.
5. Alan Forbes,"The Joy of PHP: A Beginner's Guide to ProgrammingInteractiveWebApplicationswithPHP andMySQL, CreateSpace Independent Publishing Platform, 2015.
6. AntonioLopez,"LearningPHP7,PacktPublishing,2016.
7. https://www.guru99.com/php-tutorials.html

COURSEOUTCOMES:

Upon successful completion of this course the students would be able to:

- Understand the fundamental knowledge of developing web applications with PHP.
- Illustrate the advanced concepts like strings,arrays and functions.
- Design Web based applications.
- Analyze and solve various database tasks usingPHP.
- Develop AJAX based applications.

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PROFESSIONAL ETHICS

VI SEMESTER
COURSECODE:22SCCCA6P
CORE PRACTICAL COURSE: Programming in PHP Lab

COURSEOBJECTIVES:

- To acquire the programming experience in PHP.
- To apply variables, strings, and constants to a PHP a script and test it with a program.
- To design an authentication web page in PHP with MySQL.

1. Write a program to find the factorial of a number.
2. Write a program using Conditional Statements need a number N and check whether it is divisible by M.
3. Write a program to find the maximum value in a given multi-dimensional array.
4. Write a program to find the GCD of two numbers using user-defined functions.
5. Design a simple web page to generat emultiplication table for a given number.
6. Design a webpage that should compute one's age on a given date.
7. Write a program to download a file from the server.
8. Writea program to store the currentdate and time in a COOKIEanddisplay the 'Last Visited' date and time on the webpage.
9. Write a program to store page views count in SESSION,to increment the count on each refresh and to show the count on webpage.
10. Write a program to design a simple calculator.
11. Design an authentication webpage in PHP withMySQL to check username and password.

COURSEOUTCOMES:

Upon successful completion of this course the students would be able to:

- Learn PHP programming on handling strings and arrays.
- Design web pages for different applications with MYSQL.
- Handlefiles, sessions and cookies by downloading a file from the server.
- Develop real-time applications.
- Gain experience in drawing images using Ajax.

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PROFESSIONAL ETHICS

VI SEMESTER
COURSE CODE: 22SMBECA2A
MAJOR BASED ELECTIVE II COURSE: Software Project Management

COURSEOBJECTIVES:

- To understand the fundamental principles of Software Project management.
- To be familiar with the different methods and techniques used for project management.
- To understand the software project failure reasons and mitigation techniques.

UNIT-I:

Introduction –Software Engineering Technology – Software process – Software process models – The prototyping. Requirement Engineering - System modeling– Requirements analysis and elicitation for software - software prototyping – data dictionary–elements of analysis model – data modeling – functional modeling and information flow.

UNIT-II:

The system design process – software design and software engineering –The design process – Design principles – Design concepts – Effective modular design – Design heuristics for effective modularity-User interface Design.

UNIT-III:

Software testing techniques – Software testing fundamentals – White box testing– Basis path testing – Control structure testing–Black box testing. Software testing strategies – A strategic approach to s/w testing – Validation testing – System testing – The Art of debugging.

UNIT-IV:

Software Configuration Management–Definitions and terminology–processes and activities .Software Quality assurance – definitions –quality control and assurance – Organization of Structures – Risk Management – Risk Identification, quantification Monitoring – Mitigation. Project initiation – Project Planning and tracking– organizational processes–assigning resources–project tracking– project closure.

UNIT-V:

Software requirements gathering – steps to be followed – skills sets required – challenges.Estimation:Threephasesofestimation.DesignandDevelopment

phases – reusability, Technology choices, Standards, Portability user interface – testability–diagnosisability–Maintainability –Installability-TheEffectofInternet on Project Management.

UNIT-VICURRENTCONTOURS(forContinuousInternalAssessment Only):

Contemporary Developments Related to the Course duringthe Semester Concerned.

REFERENCES:

1. Roger S. Pressman: Software Engineering, Tata McGraw Hill Publication Company Pvt. Ltd., V Edition. Year
2. Gopalaswamy Ramesh, "Managing Globle Software Projects" TataMcGrawHill Publishing Company Ltd, New Delhi, 2002.
3. Watts S Humbhrey: A Discipline for Software Engineering, Pearson education Publ., 2001.
4. Bob Hughes and Mike Cotterell "Software Project Management"2ndedition, Tata McGraw Hill Publishing Company Ltd., New Delhi, 2002
5. Pressman, RogerS., and Maxim, BruceR., Software Engineering: A Practitioner's Approach. Singapore, McGraw-Hill Education, 2015.
6. Hodges, Jason Lee. Software Engineering from Scratch: A Comprehensive Introduction Using Scala, Apress, 2019.
7. Rath, Amiya Kumar, and Mohapatra, Hitesh, Fundamentals of Software Engineering: Designed to Provide an Insight Into the Software Engineering Concepts, BPB PUBN, 2020.
8. https://www.javatpoint.com/software-project-management

COURSEOUTCOMES:

Uponsuccessfulcompletionofthiscoursethestudentswouldbeableto:

- Identify the different project contexts and suggest an appropriate management strategy.
- Understand why and how at failure probability can be reduced effectively
- Determine an appropriate project management approach through an evaluation of the business context and scope of the project.
- Practice the successful software development with professional ethics. Identify and describe the key phases of project management.
- Demonstrate through application, knowledge of the key project management skills, such as product and work break-down structure, schedule, governance including progress reporting, risk and quality management.

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VI SEMESTER
COURSE CODE: 22SCAPW
CORE COURSE: Mini Project

Code:

The candidate shall be required to take up a Project Work by group or individual and submit it at the end of the final year. The Head of the Department shall assign the Guide who, in turn, will suggest the Project Work to the students in the beginning of the final year. A copy of the Project Report will be submitted to the University through the Head of the Department on or before the date fixedby the University.

The Project will be evaluated by an internal and an external examiner nominated by the University. The candidate concerned will have to defend his/her Project through a Viva-voce.

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ASSESSMENT/EVALUATION/VIVAVOCE:

1. PROJECT REPORTE VALUATION(Both Internal&External)

I. Plan of the Project -20marks

II. Execution of the Plan/collection of 45marks Data / Organisation of Materials / Hypothesis, Testingetc. and Presentation of the report. -

III. Individualinitiative -15marks

2. Viva-Voce/Internal&External - 20marks

TOTAL **-100marks**

PASSINGMINIMUM:

	Vivo-Voce20Marks	**Dissertation80Marks**
Project	40%outof20Marks (i.e.8Marks)	40%outof80marks (i.e.32marks)

A candidate who gets less than 40% in the Project must resubmit the Project Report. Such candidates need to defend the resubmitted Project at the Viva-voice within a month. A maximum of 2chanceswill be given to the candidate.

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PROFESSIONAL ETHICS

VI SEMESTER
COURSECODE:22SSBECA2
SKILL BASED ELECTIVE II COURSE: Internet ofThings

COURSEOBJECTIVES:

- TolearntheconceptsofIoT anditsprotocols.
- Tolearnhow toanalyse thedatainIoT.
- TostudyIoT&Securityinfrastructureforpopular applications.

UNIT-I:

INTRODUCTION-Definition&characteristicsofIoT-physicaldesignofIoT - logical design of IoT - IoT enabling Technologies - IoT levels& Deployment templates. Domain specific IoT : Home Automation - cities - Environment-Energy - retail - logistics - Agriculture - Industry Health and life style.

UNIT-II:

IOT andM2M–DeferencebetweenIot andM2M–SDNandNFVforlot– IoT systems management - SNMP - YANG – NETOPEER.

UNIT-III:

IOT SPECIFICATION IoT platforms design Methodology - purpose and specification - process specification - Domain model specification - Information model specification - Service specification - IoT level specification - functional view specification - operational view specification - Device and component Integrators - Application Development.

UNIT-IV:

LOGICALDESIGNUSINGPYTHONLogicaldesignusingpython-Installing python - type conversions - control flow - functions - modules - File handling -classes. IoT physical devices and End points, building blocks of IoT device-RaspberryPi-LinuxonRaspberryPi-RaspberryPiinterfaces.

UNIT-V:

IOT AND CLOUD COMPUTING IoT physical servers& cloud computing - WAMP – Xively cloud for IoT- python Web application framework-Amazon webservices for IoT.

UNIT-VICURRENTCONTOURS(forContinuousInternalAssessment Only):

ContemporaryDevelopmentsRelatedtotheCourseduringtheSemester Concerned.

REFERENCES:

1. ArshdeepBahga,VijayMadisetti,InternetofThings-AhandsonApproach, Universities Press.2015.
2. SamuelGreengard,TheInternetofThingsMITPress,2015.
3. BK Tripathy, J Anuradha, Internet of Things (IoT): Technologies, Applications, Challenges and Solutions,CRC Press,2017.
4. SrinivasaK.G., SiddeshG.M.HanumanthaRajuR, InternetofThings, CengageLearningIndiapvt.Ltd2018
5. JamilY.Khan,MehmetR.Yuce,InternetofThings(IoT):Systemsand Applications, Jenny Stanford Publishing, 2019.
6. Kumar,Sudhir,FundamentalsofInternetofThings,CRCPress,2021.https://www.tutorialspoint.com/internet_of_things/index.htm#:~:text=IoT%20(Internet%20of%20Things)%20is,to%20any%20industry%20or%20system

COURSEOUTCOMES:

Uponsuccessfulcompletionofthiscoursethestudentswouldbeableto:

- UnderstandthefundamentalsofInternetof Things.
- KnowthebasicsofcommunicationprotocolsandthedesigningprinciplesofWeb connectivity.
- GaintheknowledgeofInternetconnectivityprinciples.
- Designanddevelopsmartcityin IoT.
- AnalyseandevaluatethedatareceivedthroughsensorsinIoT.

PROFESSIONAL ETICS , GENDER & HUMANVALUES

Third Year	**PART-V**	**Semester-VI**
	GENDER STUDIES	
Code: 22UGGS	**(Theory)**	**Credit: 2**

OBJECTIVES:

- To make students to aware of Gender constructions and gendering Process
- To explore existing gender biases in the society and to understand the need to work towards
- the inclusive society
- To inculcate sensitivity and build gender perspectives.
- To use the course to bring attitudinal cum behavioral changes towards gender neutral ambience and promote the humanistic values

UNIT- I INTRODUCTION TO GENDER STUDIES CONCEPTS

Gender Spectrum.-Sex – Gender distinction – Biological Determinism – Patriarchy – Feminism –Gender Socialization and Stereotyping-Gender Discrimination – Gender Division of labour and roles– Gender Sensitivity and awareness – Gender Equity – Equality – Gender Main streaming and Gender Analysis.

UNIT- II UGC INITIATIVES ON WOMEN'S STUDIES

Definition of Women's Studies –Gender Studies –UGC Initiatives and guidelines on Women's Studies - Beijing Conference, UN Initiatives – Convention on Elimination of All forms of Discrimination Against Women (CEDAW)- Sustainable Development Goals on Gender Equality (SDG 5) and targets

UNIT- III AREAS OF GENDER DISCRIMINATION

Gender Socialization- Sex Ratio– Health and Nutrition– – Literacy and Education - Employment- Governance – participation in decision making- politics- property rights and access to credit- gender based violence- Social institutions –Family, Caste, Class, religion, gender, State. Market – Media – Politics – Judiciary

UNIT -IV WOMEN DEVELOPMENT AND GENDER EMPOWERMENT

Towards Equality Report of Status of Women in India 1974 – International Women's Decade – International Women's Year – National Policy for Empowerment of Women 2001

UNIT -V WOMEN'S MOVEMENTS AND SAFEGUARDING MECHANISM :

In India National /State Commission for Women(NCW) – All Women Police Station – Family Court Legislations safeguarding women –Transgender Policy—Constitutional amendments for women's political participation

UNIT - VI CURRENT CONTOURS: (for continuous internal assessment only):
Tamil Nadu State Policy for Women 2021- National Policy for Women 2015 – Prevention of Sexual Harassment at Work places Act 2013- Protection of Children from Sexual Offences Act, 2012 - Analysis of regressive and progressive High court and supreme court judgments- women proactive policies, programmes, interventions

REFERENCE :

1. Bhasin Kamala, Understanding Gender : Gender Basics , New Delhi : Women Unlimited , 2004
2. Bhasin Kamala, Exploring Masculinity: Gender Basics , New Delhi: Women Unlimited,2004
3. Bhasin Kamala , What is Patriarchy? : Gender Basics, New Delhi :Women Unlimited ,1993
4. Arya Sadhna Women ,Gender Equality and the State ,New Delhi :Deep & Deep Publication,2000
5. பாலியலை புரிந்து கொள்வோம் மதுரை ஏக் தா
6. Mishra .O.P,Law Relating to Women &Child ,Allahabad :Central Law Agency ,2001
7. Uma Chakravarti, Gendering Caste Through a Feminist Lens, Sage Publication 2003
8. Bhattacharya Malini , Sexual Violence and Law ,Kolkata; West Bengala Commission for Women ,2002
9. Sexual Harassment at the Workplace – A Guide , New Delhi ;Sakshi,1999
10. அஜித்தா குடும்ப வன்முறையிலிருந்து பெண்களை பாதுகாக்கும் சட்டம் 2005 மதுரை ஏக் தா 2005
11. பொன் கிருஷ்ணசாமி ஜே பால் பாஸ்கர் & ஆ ஜான் வின்சென்ட் பெண்களும் உச்ச நீதிமன்றமும் மதுரை சொகோ வாசகர் வட்டம் ,2004
12. குடும்ப வன்முறையிலிருந்து பெண்களை பாதுகாக்கும் சட்டம் 2005 Women's Integrated National Development Trust
13. https://www.schooloflegaleducation.com/women-and-law-in-india-e-book/

COURSE OUTCOMES:

- Students would have gained a perspective and understood the social reality of gender society

understood the differences of gender and sex and may resort to building alternative perspectives and critical thinking.

- Gained knowledge on the various social institutions governing gender and the intersectionality.
- Exposed to the kind of initiatives of the State towards gender equality