Holy Cross College (Autonomous)
Nagercoil – 629 004
Affiliated to Manonmaniam Sundaranar University, Tirunelveli
Nationally Accredited with A+ Grade (CGPA 3.35) by NAAC IV Cycle
An ISO 9001:2015 Certified Institution

SSR
2019-2020
to
2023-2024

VALUE ADDED SYLLABUS

SPECIFIC VALUE-ADDED COURSE–WEB DESIGNING USING HTML

Course Code	Credit	Total Hours	Total Marks
MU231V01	1	30	100

Pre-requisite:

Basic knowledge of Matrices and Programming languages.

Learning Objectives:

1. To understand the importance of the web as a medium of communication.
2. To create an effective web page with graphic design principles**.**

Course Outcomes

On the successful completion of the course, student will be able to:		
1	define modern protocols and systems used on the web (such as HTML, HTTP).	K2
2	employ fundamental knowledge on web designing with makeup language.	K3
3	gain strong knowledge in HTML.	K2
4	use critical thinking skills to design and implement an interactive websites with regard to issues of usability, accessibility and internationalism.	K4
5	pursue future courses in website development and design.	K3

K1-Remember; **K2**-Understand; **K3** -Apply; **K4** –Analyze

Units	Contents	No. of Hours
I	Introduction to HTML–Designing a Home Page-History of HTML– HTML Generations –HTML Documents – Anchor Tag – Hyper Links – Sample HTML Documents.	6
II	Head and Body Sections –Header Sections–Title–Prologue–Links – Colorful Web Page–Comment Lines–Some Sample HTML Documents.	6
III	Designing the Body Section- Heading Printing-Aligning the Headings – Horizontal Rule – Paragraph – Tab Setting -Images and Pictures-Embedding PNG Format Images.	6
IV	Ordered and Unordered Lists –Lists–Unordered Lists–Headings in a List – Ordered Lists-Nested Lists.	6
V	Table Handling-Tables-Table Creation in HTML- Width of the Table and Cells-Cells Spanning Multiple Row/Columns Coloring Cells - Column Specification – Some Sample Tables.	6

Self-study	Sample HTML Documents

Text Book:

1. Xavier, C. World Wide Web Design with HTML. Tata McGraw Hill Publishing Company Limited.

Reference Books:

1. Castro.,Elizabeth.,& Hyslop.(2013).HTML 5,and CSS:Visual Quickstart Guide.(Eight Edition).Peachpit Press.

2. Devlin., &Ian. (2011).HTML 5 Multimedia: Develop and Design.Peachpit Press.

3. Felke., &Morris. (2013). Basics of Web Design: HTML 5 & CSS3. (Edition). Addition-Wesley.

4. Felke.,& Morris.(2014).-Web Development & Design Foundations With HTML 5.(7th Edition). Addition-Wesley.

5. John Duckett. (2011).HTML and CSS: Design and Build Website. (Edition). Johnwiley and sons.

Value Added - BUSINESS STATISTICS

Course Code	Total Hours	Marks
VAM2013	30	100

Objectives:

1. To help students apply statistical tools and mathematical principles in real-life problems, particularly in business.

2. To enable students to describe data with descriptive statistics and to perform statistical analysis.

Course Outcomes:

➢ To understand about the data and sampling methods.

➢ To explain the primary concepts of measures of central tendency.

➢ To demonstrate the ability to solve problems in Correlation and Regression.

➢ To know the index numbers and their uses.

➢ To apply the concepts to solve problems in commerce and business.

➢ To understand the uses of averages and Rank correlation coefficient.

Unit I Introduction to Statistics:

Statistics – Definition – Functions – Limitations – Distrust – Importance – Statistical Enquiry – Collection of Data –Primary data – Secondary data – Sampling – Methods – Classification and Tabulation.

Unit II Measures of Central Tendency:

Measures of Central Tendency -Definitions – Functions of averages – Characteristics of a good Average – Types of Averages – Mean - Median – Mode.

Unit III Correlation:

Correlation – Definitions – Importance of Correlation – Types of Correlation – Methods of studying Correlation – Scatter Diagram– Karl Pearson's coefficient of Correlation – Spearman's Rank Correlation.

Unit IV Regression:

Regression – Meaning – Definition– Differences between Correlation and Regression – Uses of Regression Analysis.

Unit V Index Numbers:

Index numbers – Definitions – Characteristics of Index Numbers – Uses of Index Numbers – Kinds of Index Numbers.

Text Book:

1. Pazhani, K (2013*). Statistics* (Third Edition), Sivakasi, AnnaiNilayam.

Chapters: 1- 6, 7, 8, 10 -12.

Reference Books:

1. Shenoy, G.V., Srivastava, U.K., Sharma, S.C. (1988). *Business Statistics*. (First Edition). New Delhi: Wiley Eastern Limited.
2. Arumugam, A. ThangapandiIsaac, A. (2013*). Statistics*. (First edition). Palayamkottai: New Gamma Publishing House.
3. Wilson, M. (2000). *Business Statistics*. (First Millennium edition). New Delhi: Himalaya Publishing House.
4. Vittal, P. R. (2012). *Mathematical statistics*. (First edition). Chennai: Margam Publications.
5. Pillai, R.S.N.& Bagavathi, V(1986).*Statistics*. (Second Edition.). New Delhi: S. Chand& Company Ltd.

Value Added – OFFICE AUTOMATION

Course Code	Total Hours	Marks
VAM2015	30	100

Objectives:

1. To familiarize the students in preparation of documents and presentations with office automation tool.

2. To train them to work on the comment-based activities in MS-office system.

Course Outcomes

➢ To give hands on training to the students to create table and sorting of a Table Detain MSWord.

➢ To understand and discuss about the use of Office Package in daily life.

➢ To construct worksheet in MS-Excel.

➢ To design presentation with efficient slides.

➢ To acquire knowledge video conferencing platforms.

Unit I Formatting in Microsoft Word File

Introduction - Formatting in Microsoft Word File - Page Break and Cover Page Microsoft Word File - Customizing the Word - Printing of Document in Microsoft Word - Paragraph Formatting in MS Word - Tab Formatting in Word - Borders and Shading in Word - Bullets and Styles in Word - Graphical Objects and Charts in MS Word.

Unit II Advance Formatting in Microsoft Word File

Introduction to Table in Word, creating a New Table in Word, Formatting a Table in Word, Insert and Delete Row/Column in Table in Word, Merge and Split Cell in Table in Word, Modify Height and Width of Row and Column in Table, Position and Alignment of a Table in MS Word, Sorting of a Table Data in MS Word, Formula for Table Data in Word, Convert Table to Text in Word, Mail Merge in MS Word.

Unit III Introduction to Microsoft Excel 2010

Introduction to Excel 2010 - Entering Data and formatting - Saving File in MS Excel - Printing File in MS Excel.

Unit IV Formulas and Functions in MS Excel 2010

Introduction - Calculating with the help of Formulas and Functions - Working with Worksheet, Rows, Columns and Cells - Table Format - Sorting - Filter - Data Tools.

Unit V Advance Features of Microsoft Power Point 2010

Introduction - Usage of Table in a Slide - Usage of Smart Art in a Slide - Usage of Chart in a Slide - Inserting Hyperlink in a Slide - Inserting Symbol in a Slide - Inserting Equation in a Slide - Add an Animation to Slide - Start a Slide Show (Run Your Show) - Slide Master

Text Book:

1. Dr. DarshnaDalvadi and Himanshu (2021). *Office Automation Tools*. Ahmedabad: Dr. BabasahebAmbedkar Open University.

Reference Books:

1. YatendraKumar(2018). *Office Automation Tools*.Uttar Pradesh: NageenPrakashan.
2. P. Rizwan Ahmed (2016).*Office Automation*. Chennai: Margham Publications.
3. D. K. Girija, M. Rashmi and H. K. Shilpa (2022). *Office Automation*. New Delhi:Himalaya Publishing House Pvt. Ltd.

SPECIFIC VALUE-ADDED COURSE – SCILAB

Course Code	Credit	Total Hours	Total Marks
MP231V01	**1**	**30**	**100**

Pre-requisite:

Basic knowledge of Matrices and Programming languages.

Learning Objectives:

1. To make the students aware of SCILAB programming environment.
2. To acquire the practical knowledge of SCILAB for solving the matrices, polynomials and differential equations.

Course Outcomes

	On the successful completion of the course, student will be able to**:**	
1	learn basic SCILAB programming.	**K1**
2	understand the basic mathematical operations using SCILAB software.	**K2**
3	execute SCILAB codes for vectors, matrices, plotting lines, polynomial and differential equations	**K3**
4	implement simple mathematical functions/ equations in numerical computation environment such as SCILAB.	**K4**
5	interpret and visualize simple mathematical functions and operations by using plots.	**K5**

K1-Remember; **K2**-Understand; **K3** -Apply; **K4** –Analyze; **K5** – Evaluate

Units	Contents	No. of Hours
I	Login - Talking between SCILAB and the Editor - Basic Commands - Linear Algebra - Loops and Conditionals - Help in SCILAB. (Chapter 1: Sections 1.1 to 1.7)	6
II	Matrices and Vectors - Solving Equations - Creating Matrices - Systems of Equations. (Chapter 2: Section 2.2)	6
III	Plotting Lines and Data - Adding a Line - Hints for Good Graphs – Graphs - Function Plotting - Component Arithmetic - Printing Graphs - Saving Graphs. (Chapter 3: Sections 3.2, 3.3).	6
IV	Evaluation of Polynomials – Polynomials - Linear Least Squares (Heath Computer Problem). (Chapter 6: Sections 6.2, 6.3, 6.4).	6
V	Differential Equations - Scalar ODE"s - Order 2 ODE"s. (Chapter 8: Sections 8.2).	6

Self-study	Carrying On - Defining Commands and Environments

Text Book:

1. Graeme Chandler and Stephen Roberts. (2002). *Scilab Tutorials for Computational Science*.

Reference Books:

1. Sandeep Nagar. (2017). *Introduction to Scilab: For Engineers and Scientists*. Apress publisher, New York.
2. Nair,A.S. (2012).*SCILAB* (*A free software to MATLAB*). S. Chand Publishing, New Delhi.
3. Anil Kumar Verma. (2018). SCILAB – A Beginners Approach (1st Edison). Cengage India.
4. Surendran, K. S. (2007). *SCILAB FOR DUMMIES* (Version 2.6).

Value Added - INTRODUCTION TO LATEX USING OVERLEAF

Course Code	Total Hours	Marks
VAM2017	30	100

Objectives:

1. To understand LaTeX, a document preparation system for high-quality typesetting.
2. To have hands on experience to become a user of LaTeX.

Course Outcomes

➤ To typeset complex mathematical formulae using LaTeX.
➤ To use tabular and array environments within LaTeX.
➤ To prepare a LaTeX document, to make scientific article and project report.
➤ To create automatic generation of table of contents, bibliographies.
➤ To learn about graphics in LaTex.

Unit I

Introduction to LaTeX, Overleaf and Mathcha - Basic structure of LaTeX document - Basic text typing and formatting

Unit II

Math equation typing - Listing items

Unit III

Table creation - drawing and inserting Figure

Unit IV

Article preparation - Thesis Preparation

Unit V

Presentation Creation - Beamer Class

Text Book:

1. Leslie Lamport, LATEX A Document Preparation System, Addison Wesley Publishing, Second Edition, 1994

Reference Books:

1. H. Kopka and P. W. Daly, A Guide to LaTeX, Addison- Wesley, 2003
2. Getting Started with LaTeX, David R. Wilkins
3. LaTeX Tutorial, Jeff Clark
4. LaTeX Tutorials — A Primer Indian TEX Users Group.
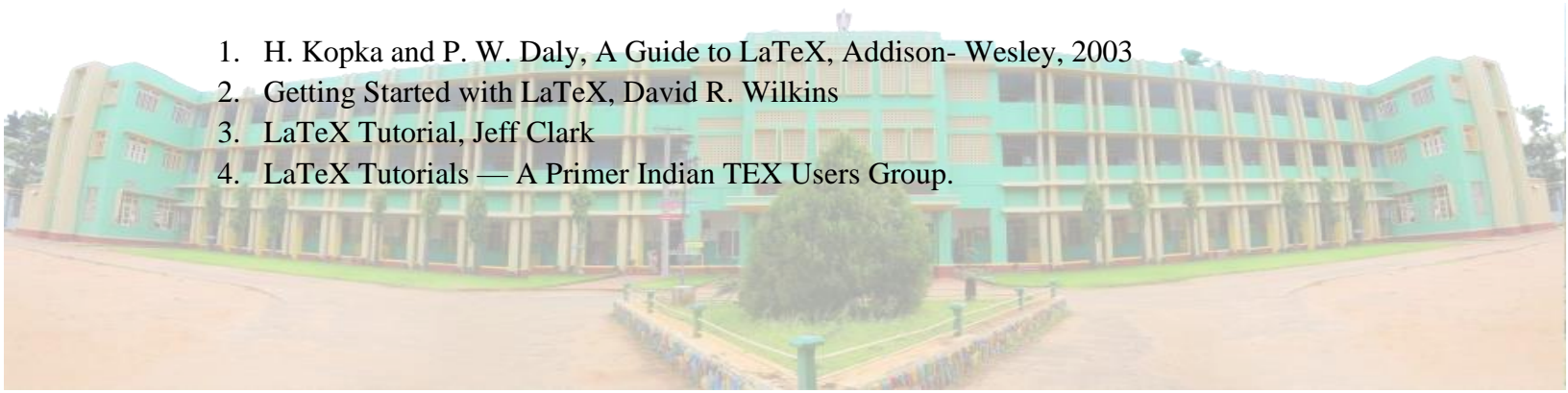
Value Added - CHALLENGING PUZZLES AND PERPLEXING MATHEMATICAL

PROBLEMS

Course Code	Total Hours	Marks
VAM2019	30	100

Objectives:

1. To improve memory skills and concentration.
2. To enhance problem-solving ability.

Course Outcomes

➢ To remember the basic concept of simple mathematics.
➢ To understand the concepts of mathematics.
➢ To apply the possible solutions to the problems.
➢ To analyze the strategies for solving puzzle type problems.
➢ To create new puzzle and magic square problems.

Unit I

Locomotion and Speed Puzzles, Digital Puzzles- Various Arithmetical and Algebraical Problems

Unit II

Geometrical Problems- Dissection Puzzles, Joiner's Problem, Cardboard Chain.

Unit III

Points and Lines Problems, Moving Counter Problems- Unicursal and Route Problems.

Unit IV

Combination and Group Problems, Crossing River Problems.

Unit V

Problem Concerning Games, Puzzle Games, Magic Square Problems.

Text Book:

1. H.E. Dudeney, Challenging Puzzles, Summersdale Publishers Ltd., UK (2007).

Reference Books:

1. Dr.J.Subramani, Mathematical Puzzles for everyone, a book 2 read.com Driven by Life of Riley Productions Ltd, London.

2. Shakuntala Devi, Puzzles to Puzzles You, Published by orient paper backs, New Delhi.

3. Henry Ernest Dudency, 36 Puzzles and Curious Problems, Charles Scribner's Sons, NewYork.

4. Joan Acosta,Word Games and Puzzles, bestofthereader.ca (2013).
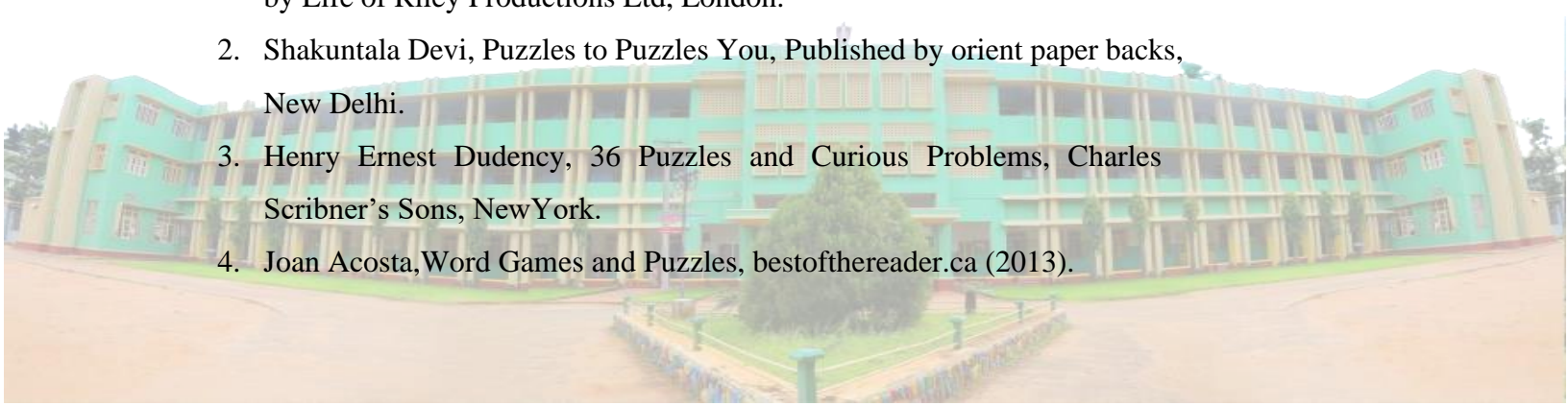
SPECIFIC VALUE-ADDED COURSE– CREATING DOCUMENTS USING LATEX

Course Code	Credit	Total Hours	Total Marks
MP231V02	**1**	**30**	**100**

Pre-requisite:

Basic understanding of Mathematics and related commands, Idea of Microsoft Word

Learning Objectives:

1. To understand LaTeX, a document preparation system for high-quality typesetting.
2. To have hands on experience to become a user of LaTeX.

Course Outcomes

On the successful completion of the course, student will be able to**:**		
1	typeset complex mathematical formulae using LaTeX	**K2 & K3**
2	use tabular and array environments within LaTeX	**K2 & K3**
3	prepare a LaTeX document, to make scientific article and project report	**K3 & K6**
4	create automatic generation of table of contents, bibliographies	**K6**
5	learn about graphics in LaTex	**K2 & K3**

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6**– Create

Units	Contents	No. of Hours
I	**Getting Started:** Preparing an Input File - The Input – Sentences and Paragraphs - The Document – Sectioning. Chapter 2 - 2.1, 2.2 - 2.2.1, 2.2.2, 2.2.3	**6**
II	**Getting Started:** Displayed Material - Running Latex **Carrying On:** Changing the Type Style - Mathematical formulas – Some Common Structures - Mathematical Symbols. Chapter 2- 2.2.4, 2.3; Chapter 3 - 3.1, 3.3- 3.3.1, 3.3.2	**6**
III	**Carrying On:** Arrays – Delimiters - Multiline Formulas – Putting One	**6**

	Thing Above Another - Spacing in Math mode - Defining Commands and Environments – Defining Commands - Defining Environments. Chapter 3 - 3.3.3 to 3.3.7, 3.4 – 3.4.1, 3.4.2	
IV	**Carrying On:** Figures and Other Floating Bodies – Figures and Tables – Marginal Notes - Lining it up in Columns - The tabbing Environment- The tabular Environment **Moving Information Around:** The Table of Contents - Cross-References – Bibliography and Citation. Chapter 3 - 3.5 – 3.5.1, 3.5.2, 3.6 – 3.6.1, 3.6.2 Chapter 4 - Sections 4.1, 4.2, 4.3	**6**
V	**Designing it yourself:** Document and Page Styles- Document-Class Options, Page Styles - Title Page and Abstract, Customizing the Style, Line and Page Breaking – Line Breaking, Numbering, Centering and Flushing. Chapter 6 - 6.1- 6.1.1 to 6.1.4, 6.2 - 6.2.1, 6.2.2, 6.3, 6.5	**6**

Self study	Carrying On - Defining Commands and Environments

Text Book:

1. 1994, *LATEX A Document Preparation System, User's Guide and Reference Manual* (second edition), Addison-Wesley Publishing Company, New York

Reference Books:

5. Martin J. Erickson, Donald Bindner, 2011, *A Student's Guide to the Study, Practice,and Tools of Modern Mathematics*, CRC Press, Boca Raton, FL.

6. Griffits. D.F, Higham D.J, 1997, *Learning Latex*, Siam, Philadelpha

7. Kopka, Helmut, Daly P.W,2007, A *Guide to LATEX and Electronic Publishing*, (4th Edition), Addison Wesley Longman Limited.

8. Grätzer, G, 2007, *More Math Into LATEX*, (4th Edition), Springer Science + Business Media, LLC.

Value Added - MATHEMATICS FOR NET/SET EXAMINATIONS

Course Code	Total Hours	Marks
VAM2021	30	100

Objectives:

1. To help the students to practice their understanding and application of various mathematical concepts.

2. To equip the students to face the NET \ SET examinations confidently.

Course Outcomes

➢ To remember the basic concepts of sequences and series, continuous functions, groups, linear transformations, analytic functions and differential equations.

➢ To enrich knowledge in Analysis, Algebra and Differential Equations.

➢ To develop skills in mathematical reasoning, logical thinking and data interpretation.

➢ To analyze the usage of various methods and techniques in problem solving.

➢ To apply the concepts of sequences and series, continuous functions, groups and differential equations in problem solving.

Unit I

Problems in Sequences and Series - Convergence –Continuity - Uniform Continuity – Differentiability – Metric Spaces – Compactness - Connectedness

Unit II

Problems in Groups - Subgroups - Normal subgroups - Quotient groups - Homomorphisms - Cyclic groups - Permutation groups

Unit III

Problems in Vector Spaces – Basis – Dimension – Linear Transformations –Matrix Representation of Linear Transformations

Unit IV

Problems in Power series - Analytic functions - Cauchy Riemann equations – Cauchy's Integral Formula – Calculus of Residues

Unit V

Problems in Existence and uniqueness of solutions of initial value problems for first-order ordinary differential equations - singular solutions of first-order ODEs - the system of first order ODEs.

Text Book:

1. CSIR-UGC NET/JRF/SET - Mathematical Sciences - Dr. Alok Kumar - Upkar Prakashan, Agra-2

Reference Books:

1. UGC CSIR NET/SET - Mathematical Analysis- 'Akilesh Mmani Thirupathi and Sunil Kushwaha'- Kanika publishing company.
2. UGC CSIR NET/SET (JRF & LS) - Mathematical Sciences -Pawan Sharma, Neha Sharma, Suraj Singh, arihant publications.
3. CSIR-UGC- NET JRF- Mathematics - Descriptive Solutions -First Edition - Sukumar Kumar - KMS Publisher.

SPECIFIC VALUE-ADDED COURSE– PHOTOSHOP

Course Code	Credit	Total Hours	Total Marks
PU231V01	**1**	**30**	**100**

Learning Objectives:

1. To create images for web design, logos, graphics, layouts, image touch-ups, and colour enhancement.
2. To learn the principles of how different types of media can be processed and presented by computers.

Course Outcomes

On the successful completion of the course, student will be able to**:**		
1	use photoshop confidently and effectively.	**K3**
2	gain the skills and abilities to use photoshop that make them employable	**K6**
3	create and edit images	**K6**
4	use a range of tools and filters in *photoshop*	**K3**

**K1** - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6**– Create

Units	Contents	No. of Hours
I	**PHOTOSHOP** Introduction - Features of Photoshop - Key Board practice – Creationof new file - saving document - Inserting of Images	**6**
II	**GRAPHICS** Creating Graphics: Combining Photos, Text, & Graphics - Replacing Backgrounds - Colour Correction Using Colour Balance - Colour Correction Using Curves - Preparing Digital Photos for Print - Exporting Files	**6**

III	**SMART FILTERS** Sharpening Photos - Layer Masking - Masking Smart Filters - Converting to Black & White - Adjustment Layers & Mask - Retouching	**6**
IV	**MASKS** Changing Colour with a Blending Mode - Clipping Masks: Filling Shapes with Images - Using Adjustment Layers as Clipping Masks - Camera Raw Fundamentals	**6**
V	**PHOTOSHOP FOR DESIGN** Camera Raw Fundamentals – Photoshop for Design: Adding a Title & Layer Styles - Photoshop for Design: Creating Digital Art in Photoshop - Photoshop for Design: Compositing into a Photo	**6**

Reference Books:

1. Rafael Concepcion, Adobe Photoshop and Lightroom Classic Classroom in a Book 3rd Edition, Kindle Edition, Adobe Press, 2022

2. Tay Vaughan, "Multimedia making it work", Tata McGraw-Hill, 2021.

3. Li & Drew, "Fundamentals of Multimedia", Pearson Education, 2019.

4. Robin Nichols, "Mastering Adobe Photoshop Elements 2023", Fifth Edition, Packet Publisher, Dec 2022.
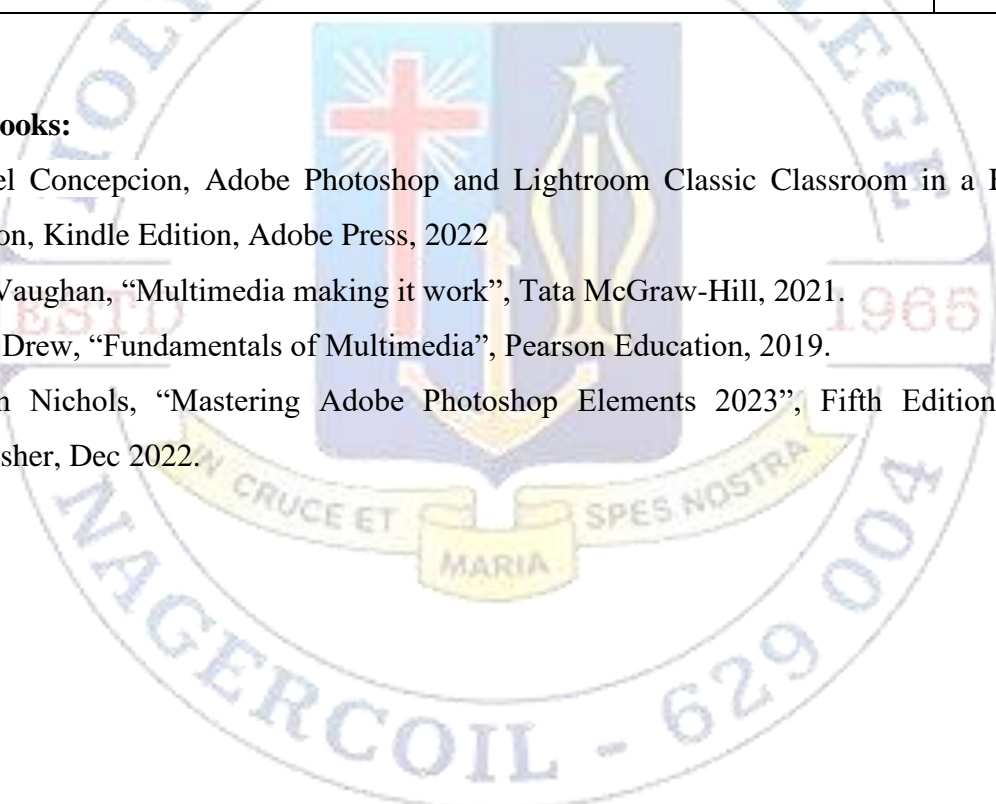
SPECIFIC VALUE-ADDED COURSE– COMPUTER MAINTENANCE

Course Code	Credit	Total Hours	Total Marks
PP231V01	**1**	**30**	**100**

Learning Objectives:

1. To analyse problems associated with PC components and provide solutions to troubleshoot and isolate the problems.
2. To identify early detection of issues.
3. To prevent Viruses and Malware and Speed up their computer.

Course Outcomes

On the successful completion of the course, student will be able to**:**		
1	understand the basic components of a computer	**K1**
2	install different types of operating systems	**K2**
3	assemble and disassemble a personal computer	**K3**
4	troubleshoot the problems	**K3**

K1-Remember; **K2**-Understand; **K3** –Apply

Units	Contents	No. of Hours
I	**Computer Hardware** Introduction to Computer Hardware - Parts of Computer - Motherboard: Block Diagram- Types -Identification of Ports, Chip, Slot, Connector - Computer Assembling & Dissembling - How to Upgrade Computer.	**6**
II	**Computer Software** Introduction to windows, Identification of windows - Windows Installation (win 7, 8, & 10) without data loss - Driver Installation (offline / online) - Software Installation - Hard Disk Partition - Windows Backup & Restore	**6**

III	**Soldering and DE soldering** Removing component from motherboard - Fixing component from motherboard - Changing Port & Slot from motherboard - Removing& fixing all ICs from motherboard	**6**
IV	**Fault Finding and Repairing in External Hardware** Keyboard Problem - Mouse Problem- Battery Problem - Overheating Problem - Hard Disk Problem - USB Problem - LAN Problem - Monitor Problem - Display White Problem - Blue Screen Problem - Shorting Problem	**6**
V	**Fault Finding and Repairing Computer Internal** Windows Problem - Software Problem - Network Problem - Virus Problem – Antivirus - RAM Problem - Slow Working Problem - Hang Problem – Restart Problem - Control Panel Setting- Data recovery -Password Breaking	**6**

Reference Books:

1. Upgrading and Repairing PCs 22nd Edition, First Edition (2017), Scott Muelle, McGraw Hill Education
2. Simple Practical Hacks to Optimize, Speed Up and Make Computer Faster (2019), Hack, Khanna Publishers
3. A Simple Guide to Computer Maintenance and Troubleshooting First Edition (2019), Adane Nega Tarekegn, Alemu Kumilachew Tegegne, McGraw Hill Education

Value Added - Domestic APPLIANCES AND SERVICE

Course Code	Total Hours	Marks
VAP202	30	100

Objectives:

1. To understand the working principles of different household domestic appliances.
2. To check the electrical connections at house-hold.
3. To learn the skill to repair the electrical appliances for the general troubleshoots and wiring faults.

Course Outcomes

- ➢ To explore the physics of home appliances and their functionality
- ➢ To understand key elements of electrical and electronics appliances.
- ➢ To understand the basic safety and servicing measures during the technical check.
- ➢ To do technical checks with electronic appliances

Unit I Electrical Connections

Voltage, Current, Resistance, Capacitance, Inductance, Electrical conductors and Insulators, Ohm's law, Series and parallel combinations of resistors, Connecters, Cables, Fuses, switches & Relays

Unit II Current

Galvanometer, Ammeter, Voltmeter, Multimeter (Analog & Digital) Transformers, Electrical energy, Power, Kilowatt hour (kWh), consumption of electrical power, direct current and alternating current, Single phase and three phase connections

Unit III Electric Shock

Basics of House wiring, Star and delta connection, Electric shock, first aid for electric shock, Overloading, Earthing and its necessity, Short circuiting, Fuses, Inverter, UPS

Unit IV Electrical Appliances

Principle, working and servicing of Electric fan, Electric Iron box, Water heater, Electric Mixer, Grinder and Blender, Microwave oven, Refrigerator

Unit V Bulbs

Concept of illumination, Electric bulbs, CFL, LED lights, Energy efficiency in electrical appliances

Reference Books:

1. Vincent Del Toro, Textbook of Principles of Electrical Eng., Prentice Hall of India Pvt. Ltd., New Delhi.
2. S. Samaddar, Textbook of Electric Wiring, New Central Book Agency (P) Ltd., Calcutta.
3. Surjit Singh, Textbook of Electrical Design Estimating and Costing, Dhanpat Rai & Sons.
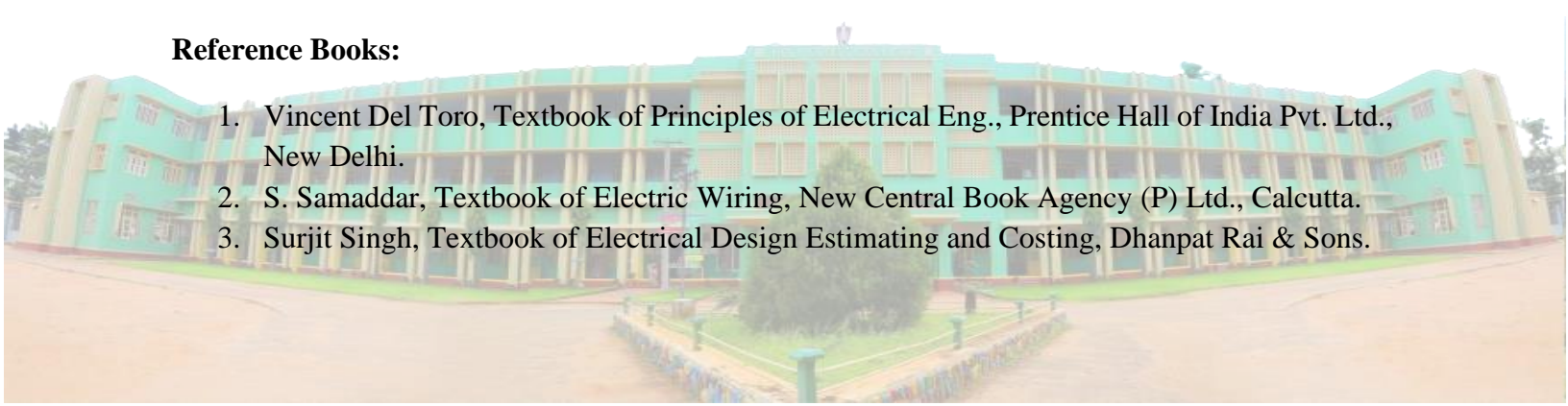
Value Added - COMPUTER HARDWARE TRAINING

Course Code	Total Hours	Marks
VAP203	30	100

Objectives:
1. To learn basic computer hardware and software installation procedures
2. To learn various hardware components
3. To learn different kinds of memory and storage devices.

Course Outcomes:
- To understand various hardware components, including CPUs, RAM, storage devices, motherboards, power supplies, and peripheral devices.
- To diagnose and repair hardware-related issues.
- To understand error codes using diagnostic tools and applying problem-solving techniques to fix hardware problems.
- To understand how different hardware components, work together and their importance of compatibility.

Unit I PC Hardware and Components

Fundamentals of Hardware, handling, testing and troubleshooting of personal computer problems

Unit II PC Architecture

Diagnose and repair problems of Desktop/Laptop/Mobiles

Unit III Advanced Networks and Networking Peripherals

Types of internet connections, network services, network security and General troubleshooting & maintenance of Networks and networking peripherals.

Unit IV Operating System, Software & Tools

Introduction of OS, File System, Memory Management, System Backup and Restore, Viruses and Anti Viruses, Knowledge of inbuilt Diagnostic Tools

Unit V Devices and Applications

Identify existing configuration of the computer and peripherals and to troubleshoot common problems

Reference Books:
1. PC Hardware: The Complete Reference, First Edition (2017), Craig Zacker and
2. John Rourke, McGraw Hill Education
3. Learning PC Hardware Second Edition (2012), Ramesh Bangia, Khanna Publishers
4. NETWORKING for Beginners, First Edition (2019), Dylan Mach.

Value Added - HOUSE WIRING

Course Code	Total Hours	Marks
VAP205	30	100

Objectives:

1. To learn basic wiring installation procedures
2. To learn various wiring components
3. To learn different kinds of wiring devices.

Course Outcomes:

➢ To understand domestic wiring and layout.
➢ To know the fundamental principles behind the electrical circuits
➢ To know the basics of electrical instruments and measurements
➢ To repair and do maintenance of the LED Bulbs, switches etc.,

Unit I Introduction to the House wiring

House Wiring, Employment opportunities; Dangers from misuse of electrical appliances and equipment; Responsibilities of Electrician and Wiremen

Unit II Introduction to Electricity and Electric Power

Definitions and Units; Static and Dynamic Electricity; Direct Current (DC) and Alternating Current (AC); Voltage Levels in AC; Advantages of AC

Unit III Common Electrical Appliance

Principles of AC Generators and Motors; Various Electrical Appliances; Measurement Methods of Electrical Parameters; Measuring Instruments of Electrical Parameters

Unit IV Safety Requirement

Safety and Precaution, General steps to ensure safety, Safety Sign, Electrical Safety, Extension Cord, Rules and Regulations; Hazards of Electricity: Fire Hazard, Electric Shock.

Unit V Electrical Wiring and Tools

Wiring and its Types: Cleat Wiring, Batten Wiring, Casing Capping Wiring, Conduit Wiring; Wiring Diagrams; Tools: Screw driver, Files, Chisel, marking punch, Calipers, Gauge, Hacksaw, Bench vice, Hammer, Taps, Wrench, Crimping tool, Drilling machine.

Reference Books:

1. Ramakant, A. Gayakwad. (2015) Basic Electrical House Wiring - Pearson Education: Fourth Edition.
2. 2. Mehta, V. K. (2001) Principles of Electronics. 6thRevised Edition, S. Chand and Company.
3. David A. Bell. (2007) Electronic Devices and Circuits. 4th Edition, Prentice Hall.
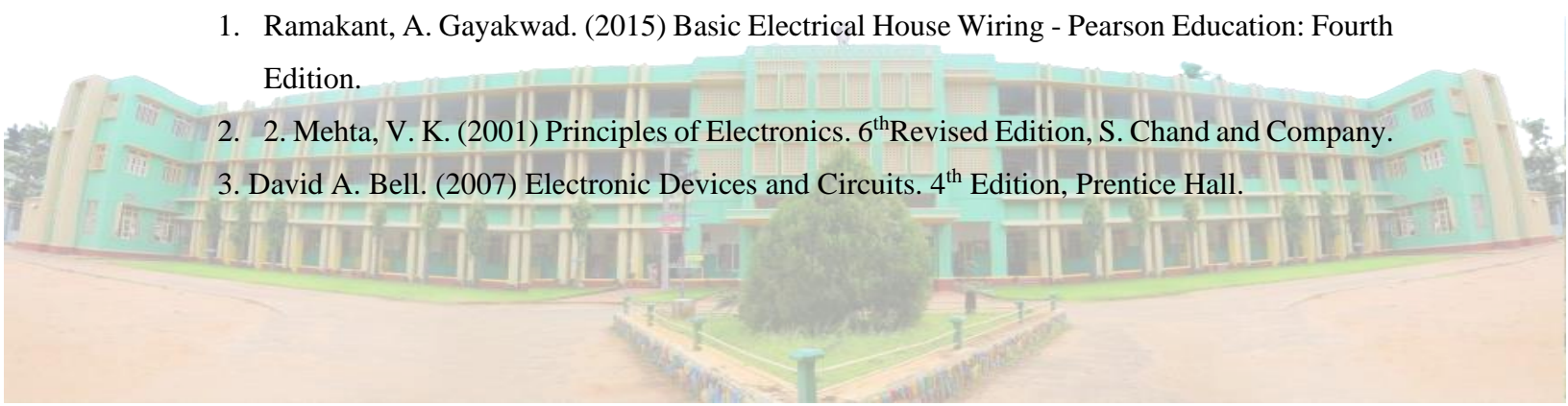
Value Added - IMAGE PROCESSING

Course Code	Total Hours	Marks
VAP206	30	100

Objectives:

1. To learn transformation of an image into digital form and obtain specific models
2. To learn the image enhancement techniques
3. To learn image restoration and compression procedures

Course Outcomes:

➢ To understand the fundamental concepts of Colour image Processing
➢ To understand the fundamental concepts of image processing, including image acquisition, representation, enhancement, and analysis
➢ To acquire hands-on experience with popular image processing tools like MATLAB and Python-based framework
➢ To gain insights into how image processing is used in various industries such as medical imaging, computer vision, remote sensing and entertainment.

Unit I Digital Image

Introduction: Digital Image Fundamentals: Brightness, Adaptation and Discrimination, Pixel adjacency connectivity

Unit II Image Restoration

Image Restoration: Image Degradation, Noise Restoration Filters. Image Compression: JPEG.

Unit III Colour Models

Colour Image Processing: Colour models, Colour transformation and segmentation.

Unit IV Morphological Operations

Morphological Image Processing: Erosion, Dilation, Opening, Closing.

Unit V Segmentation

Image Segmentation: Point, Line and Edge Detection, Thresholding.

Reference Books:

1. Digital Image Processing, Second Edition by Rafel C. Gonzalez and Richard E. Woods, Pearson Education
2. Digital Image Processing by Bhabatosh Chanda and Dwijesh Majumder, PHI
3. Fundamentals of Digital Image Processing by Anil K Jain, PHI.

Value Added - MOBILE PHONE SERVICE

Course Code	Total Hours	Marks
VAP207	30	100

Objectives:
1. To assemble and disassemble the parts of the mobile phone
2. To send and receive information wirelessly
3. To operate internal data storage.

Course Outcomes

➢ To understand the mobile technology.
➢ To know the components of mobiles and troubleshooting methods.
➢ To reassemble the repaired mobiles and do the troubleshooting.
➢ To diagnose and fix Smartphone issues.

Unit I Fundamentals of Mobile Phone

Introduction to GSM/CDMA - Working of GSM/CDMA Cellular Technologies - Information of Cell Sites & Base Station - Call Processing of a GSM –Smart Phones - APPs - GPRS - Mobile Software (PC suite)

Unit II Chip Level Study

Block Diagrams - Chip Level Information of Mobile Phones - BGA -SMD Reworking Station - Soldering lead -Soldering paste - De- Soldering wire - Identification of IC's - Assembling &Disassembling of Smart Phones.

Unit III Trouble Shooting

Causes for various problems & Troubleshooting of Problems in a Smart Phone - Network Problems - Display Problems –Touch Problems - Sim Card Problems – Charging problems - Battery Problems - Software Problems - IMEI information - Sim Card problems

Unit IV Practical 1

Tools and Test Equipment - Disassembling the cell phone –Testing of Battery, Display, Touch, Antenna, Mic, Speaker, Ringer, Charger, Vibrator and headset - SMD soldering.

Unit V Practical 2

Software Unlocking - User lock, SPC, MSL, FSC, OTKSL, Flashing - Downloads of logos and Ring tones - Hand set problems –Replacement of modules (display, touch screen, mic, speaker, antenna, amplifier, etc.).

Reference Books:

1. Khan F, M. (2018). Fundamentals of mobile phone, 3rded, USA: Lippincot Williams & Wilkins.
2. Livingstone R, S. (2017) Handbook of Physics in chip level study 1st ed, Chennai: B.I. Publication Pvt Ltd.
3. Johns, H, E. Cunningham J, R. (2021). The Physics of Smart Phone, 4thed, Springfield, U.S: Charles C Thomas Pub Ltd.
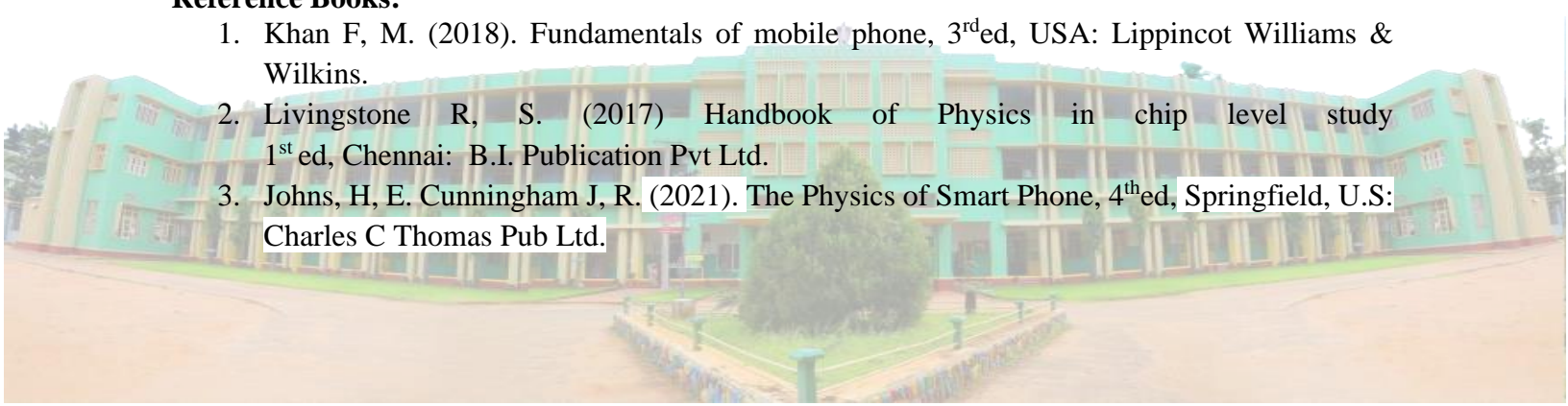
Value Added - UTILIZATION OF SOLAR ENERGY

Course Code	Total Hours	Marks
VAP208	30	100

Objectives:

1. To acquire knowledge on solar radiation principles with respect to solar energy estimation.
2. To get familiarised with various collecting techniques of solar energy and its storage.
3. To learn the solar photovoltaic technology principles and different types of solar cells for energy conservation and different photovoltaic applications.

Course Outcomes:

1. To understand the principles of solar cells.
2. To understand the benefits of harnessing solar power and efficient conversion of solar cells.
3. To set up photovoltaic solar cell.
4. To facilitate the sustainable development of energy related devices.

Unit I Solar Energy

Sun as a source of energy – Solar energy importance –Storage of Solar energy – Solar ponds – Uses of Solar energy

Unit II Solar Radiation

Solar radiation - Solar radiation at the Earth's surface - Measurement of Solar radiation – Predicition of available Solar radiation – Sunshine Recorder

Unit III Solar Thermal Systems

Principles of conservation of solar radiation into heat – Collectors used for solar thermal conservation – Flat plate collectors and concentrating collectors

Unit IV Solar Photovoltaic Systems

Conservation of solar energy into electrical energy – Photovoltaic effect – Solar photovoltaic cell and its working principle – Different types of solar cells

Unit V Applications of Solar Energy

Solar Thermal Plant – Solar Cookers – Solar hot water systems - Solar dryers - Solar distillation - Solar green house

Reference Books:

1. Jeffrey M. Gordon,(2013). Solar Energy: The State of the Art, Earthscan.

2. Kalogirou S.A, (2019). Solar Energy Engineering: Processes and Systems, 2nd Edition, Academic Press.

3. ZobaaA.F.and Ramesh Bansal, (2011). Handbook of Renewable Energy Technology, World Scientific.
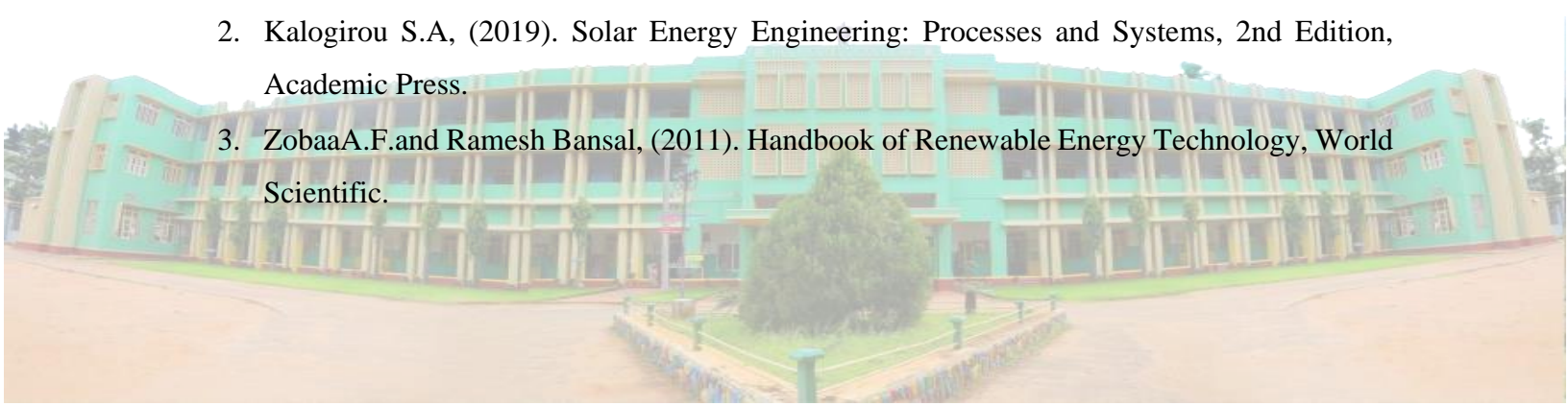
Value Added - **WEB DESIGNING**

Course Code	Total Hours	Marks
VAP209	30	100

Objectives:

1. To know fundamentals of Internet
2. To identify the principles of web design.
3. To construct basic websites using HTML and Cascading Style Sheets.

Course Outcomes

1. To understand the fundamental concepts of HTTP and XHTML Protocol.
2. To upgrade their skills in the production and maintenance of websites, including web graphic design, interface design, user experience design, and search engine optimization.
3. To inculcate better web designing which makes information more accessible to a wide range of users ensuring inclusivity.
4. To understand the basic concepts in creating links with the images, audio and video.

Unit I Introduction

Concept of WWW, Internet and WWW, HTTP Protocol: Request and Response, Web browser and Web servers, features of latest version of Web. Introducing HTML and XHTML - Basic Text Formatting - Presentational Elements–Phrase Elements - Lists - Core Elements and Attributes.

Unit II Links and Navigation

Basic Links - Creating Links with the <a> Element. Images, Audio, and Video: Adding Images Using the <img> Element - Using Images as Links - Image Maps.

Unit III Images

Audio, and Video: Adding Flash, Video and Audio to your web pages: Adding videos to your Site, Adding Audio to your Site.

Unit IV Server

Introducing Tables–Basic Table Elements and Attributes – Adding a caption to a Table - Grouping Section of a Table - Nested Tables. Forms: Introducing Forms - Form Controls - Sending Form Data to the Server.

Unit V Frames

Introducing Frameset – The <frameset> Element–The <frame> Element - Creating Links Between Frames - Nested Framesets. Cascading Style Sheets: Introducing CSS - Where you can Add CSS Rules - CSS Properties - Controlling Text - Text Formatting

Reference Books:

1. Jon Duckett, "Beginning HTML, XHTML, CSS and Java Script", Second Edition, Wiley Publishing, 2010.
2. Chris Bates, "Web Programming", Third Edition, Wiley Publishing, 2014
3. Srinivasan. M, "Web Technology: Theory and Practice", Pearson Publication

Value Added - WINDMILL TECHNOLOGY

Course Code	Total Hours	Marks
VAP2010	30	100

Objectives:

1. To learn the energy production for a wind turbine from wind speed distribution.
2. To analyse wind resources.
3. To explain the basic principles of wind energy conversion.

Course Outcomes

1. To acquire knowledge on basic principles of wind energy conversion.
2. To understand the design of windmill technology.
3. To comprehend the latest knowledge on windmill designing.
4. To *apply the principles to adopt wind* power technology and provide practical solutions.

Unit I Wind Energy

History: early wind power, technical development, influence of society and science Winds: physical background, energy content, variation in time and in space, geographical resource distribution, influence of terrain, measurement methods, statistical analysis

Unit II Turbines

Turbines: free flow, principles of drag and lift, aerodynamics, design of turbine blades, horizontal and vertical axis wind turbines, Betz' and Glauert's turbine theories, the BEM method.

Unit III Electric Generation

Electric generation: synchronous/ asynchronous generators, winding/ permanent magnetized generators, constant/ variable speed, transformers, power electronics, power converters Design: horizontal and vertical axis wind turbines, blades, control mechanisms, drive train, tower and nacelle.

Unit IV Control

Control: control targets, system modelling, control strategies (pitch and stall regulation), hardware Systems: wind power parks, transports, erection, grid connection, operation, maintenance

Unit V Environmental Issues

Society: environmental issues, law, forms of government support, technical aspects of environment Small scale wind power: technology, economy, paths of development

Reference Books:

1. Rai G. D, (2010). Non-conventional Energy sources, 4th Edition, Khanna Publishers.
2. ZobaaA.F.and Ramesh Bansal, (2019). Handbook of Renewable Energy Technology, World Scientific.
3. S.A. AbbasiandNasemaAbbasi, (2018). Renewable Energy sources and their environmental impact, New Delhi: PHI Learning Pvt. Ltd.

Value Added - ARTICLES IN EVERY DAY LIFE

Course Code	Credit	Total Hours	Marks
CU231V01	1	30	100

Learning Objectives:

1. 1. To develop skill in preparing chemicals of everyday use.
2. To know the uses and side effects of various chemicals.

Course Outcomes

On the successful completion of the course, student will be able to:		
1	know about oils, fats and soaps.	**K1**
2	understand the methods to prepare some articles in daily use.	**K2**
3	apply the prepared things in daily life.	**K3**
4	remember the hazards of chemicals.	**K2**
5	analyze and use the safety compounds for their use.	**K4**

K1-Remember; **K2**-Understand; **K3** -Apply; **K4** –Analyze

Units	Contents	No. of Hours
I	Oils – difference between oils and fats –refining of oil–manufacture of soaps – toilet and transparent soaps -washing and shaving soaps, liquid soap- methods of preparation, cleaning action of soaps– Detergents – synthetic detergents –classification and manufacture of anionic, cationic and non-ionic detergents and shampoo-Eco-friendly detergents.	6
II	Chemistry of face creams, cold cream, vanishing creams, toilet powders, hand lotion and creams, nail bleach, nail lacquer, nail lacquer removers, lipstick, eye-makeup, eye lid, hair oils, hair creams, hair dyes, hair removers, hazards of cosmetics.	6
III	Perfumes-definition- classification as natural and synthetic-composition or ingredients. Fixatives: Name of the oil, source, components.	6
IV	Tooth paste, tooth powder, boot polish, gum paste, sealing wax, phenoyle, moth balls, liquid blues, chalk crayons, inks, agarpattis and camphor tablets.	6
V	Preparation, properties and uses of washing soda, baking powder, vinegar, bleaching powder, shampoo, washing powder and sugar.	6

Text Books:

1. Text book of Allied Chemistry by Dr. T. Syed Ismail, Aashiq Publications, 2011.

2. Applied Chemistry by D.M. Yusuff, Nisa Publications, 2010.

Value Added - WATER MANAGEMENT

Course Code	Total Hours	Marks
VAC208	30	100

Objectives:

1. To realize the importance of quality water in day to day life.
2. To understand quality standards of water.

Course Outcomes

➢ To remember and recall the different sources of water pollution.
➢ To understand the different water treatment and purification techniques.
➢ To apply various parameters to detect hardness of the water.
➢ To analyze the environmental, social, and economic consequences of water management decisions.

Unit I Water Pollution

Definition-sources of water pollution-types of water pollutants: sewage and domestic wastes, industrial effluents, agricultural discharges, detergents, disease causing agents and radioactive materials. Eutrophication and its effects.

Unit II Water Quality Parameters

Physical, chemical and biological water quality parameters-water quality standards for drinking water –BIS and WHO. Determination of pH, Total hardness, DO, BOD and COD.

Unit III Water Purification

Purification of water for drinking purposes: Sedimentation, filtration and disinfection Desalination: reverse osmosis-Purification of water for industrial purposes: water softening permutit, process and ion-exchange process.
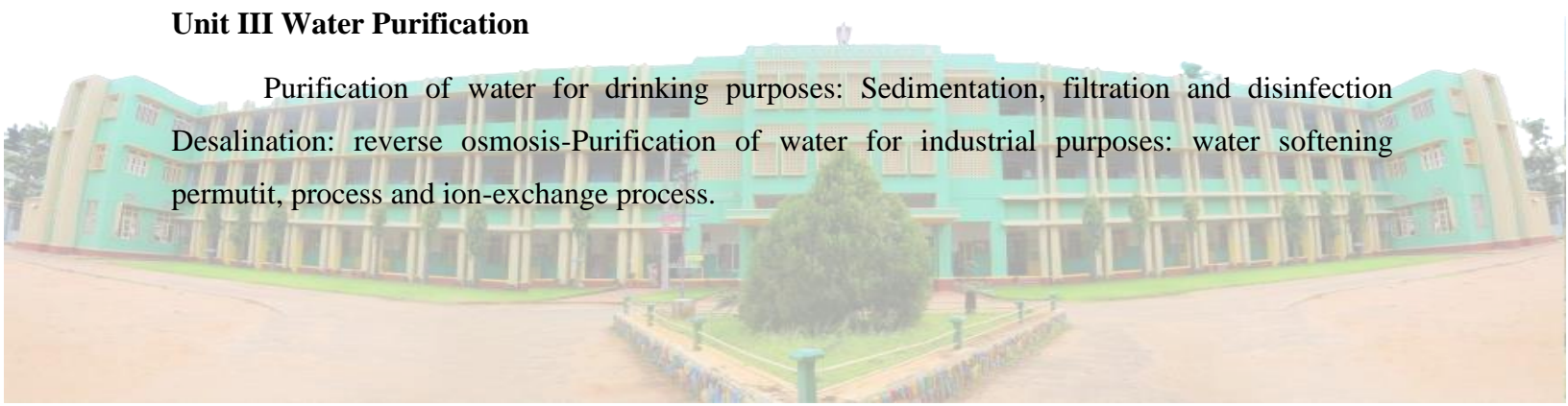
Unit IV Waste Water Treatment

Elementary ideas of waste water treatment: pre-treatment-primary treatment-secondary treatment: aerobic and anaerobic processes –tertiary treatment: evaporation adsorption – chemical precipitation.

Unit V Restoration and Management

Importance of lakes and rivers-stresses on the Indian rivers and their effects –A restoration case study: Ganga Action Plan: objectives implementation and drawbacks. Rain water harvesting – water recycling- The Water Prevention and control of Pollution Act

Text books:

1. A. K. De, Environmental Chemistry, Wiley Eastern Ltd., New Delhi.

2. B. K. Sharma, Environmental Chemistry, Goel Publishing House, Meerut.

Reference books:

1. R. K. Trivedy and P. K. Goel, Chemical and biological methods for water pollution studies, Environmental Publications, Karad, India.
2. BIS 1991, Specification for drinking water, Bureau of Indian Standards, New Delhi
3. WHO 1992, International standards for drinking water, World Health Organisation, Geneva.

Value Added - COSMETIC CHEMISTRY

Course Code	Total Hours	Marks
VAC209	30	100

Objectives:

3. To provide basic knowledge of the cosmetics.
4. To know the chemicals, present in hair and skin care products

Course Outcomes

➢ To remember the composition of cosmetic products.

➢ To understand the methods of preparation of beauty products.

➢ To apply the functions of various chemicals in cosmetics.

➢ To analyze the advantages and disadvantages of cosmetics.

➢ To evaluate the quality of cosmetics on the basis of their chemical composition.

Unit I

Face creams – definition – types. Cold cream – formulation – preparation – special additives – uses. Vanishing cream – formulation – preparation and uses. Moisturizing cream – special additives - preparation and uses. Foundation cream- preparation and uses. Hand creams – preparation and uses.

Unit II

Hair creams – types - composition and uses. Shampoos – types - composition and uses. Hair conditioner – types – composition and uses. Hair dyes – types – composition and uses. Hair removers – types - composition and uses. Disadvantages of hair care products.

Unit III

Nail polish – definition – characteristics -formulation– film forming substances – resins - plasticizers – solvents – colorants – suspending agents – perfumes- steps in nail lacquer formulation. Nail lacquer remover –characteristics and examples.
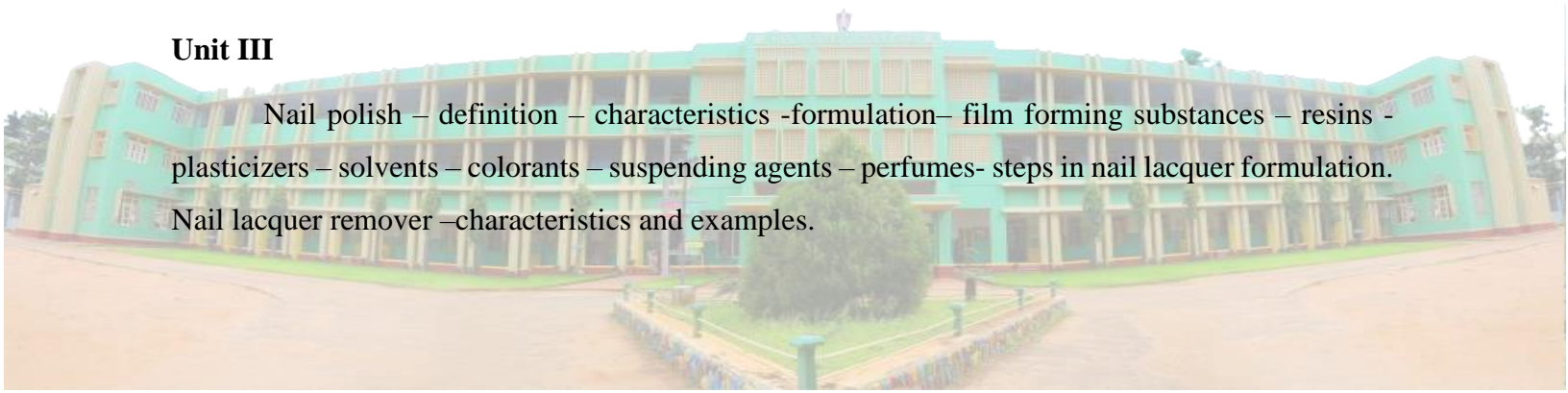
Unit IV

Lipstick – definition – characteristics – waxes – oils – bromo mixture composition – colors – preservatives – fragrance – antioxidants – surfactants – general manufacturing process - Rouge – types and formulation – eye liner - characteristics –formulation and uses. Mascara characteristics - formulation and uses.

Unit V

Toilet soaps – types – composition – preparation – transparent soaps – special ingredients in toilet soaps. Shower gel - composition – preparation and uses. Face wash - composition – preparation and uses. Hand wash- composition – preparation and uses.

Reference Books:

1. Organic Chemistry for Cosmetic Chemists, Anthony J. O' Lenick (Jr.) and Thomas G. O'Lenick, Allured Pub Corp; First Edition, 2008.
2. Cosmetic Chemistry, Robert Lochhead, American Chemical Society, First Edition, 2022.
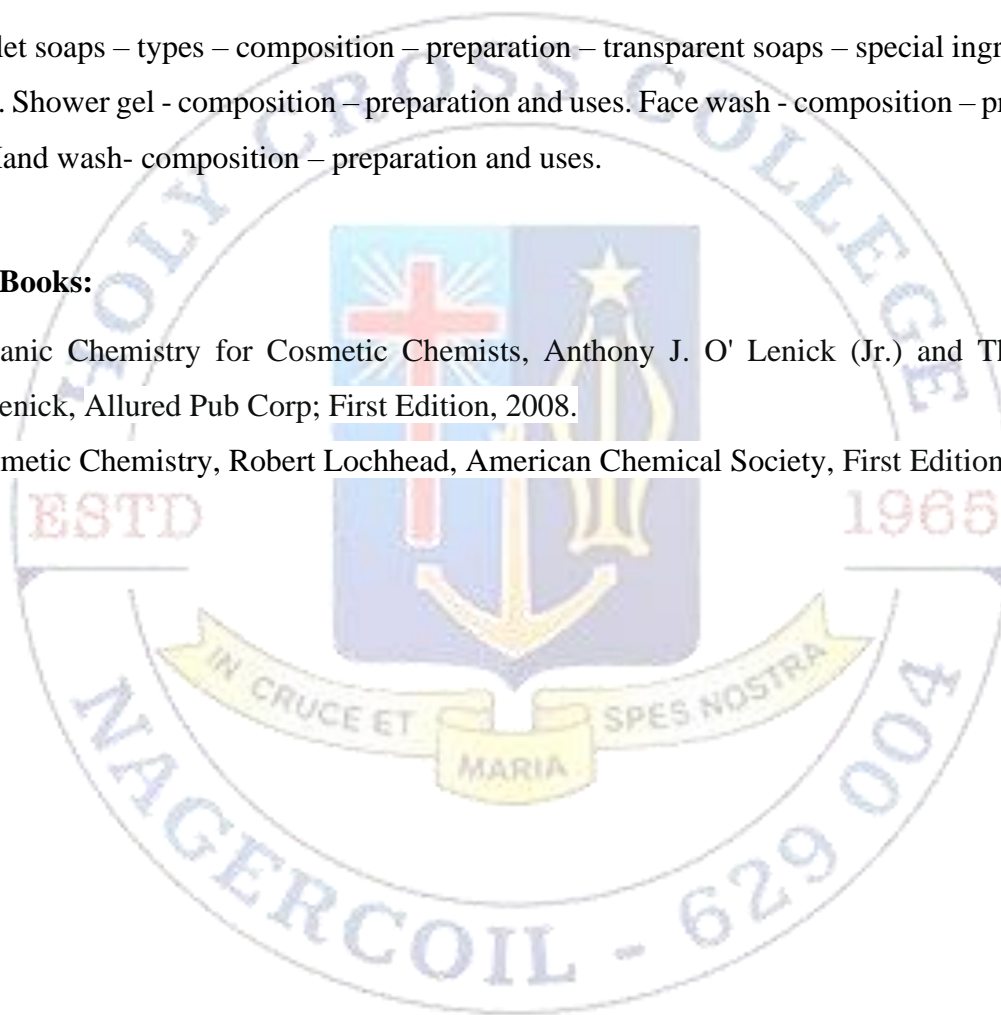
Value Added - HERBAL PRODUCT DEVELOPMENT AND FORMULATION

Course Code	Credit	Total Hours	Marks
CP231V01	1	30	100

Objectives:

1. To understand the indigenous tradition of herbal medicinal practice and to impart awareness regarding the vitality of herbal product development.
2. To train the students to develop entrepreneurial skill in herbal product production and marketing.
3. To familiarize the medicinal uses to herbals and to scientifically validate and standardize crude drugs.
4. To justify the usage of herbs in modern medicinal formulation.
5. To compile the various components in the manufacture of medicine.

Course Outcomes

	On the successful completion of the course, student will be able to**:**	
1	understand the role of natural products in herbal medicines.	**K1 & K2**
2	apply the extraction techniques in herbal drug formulation.	**K3**
3	analyse crude drugs and herbal formulation to determine their quality.	**K4**
4	evaluate crude drugs and herbal formulations as per the WHO and **cGMP** guidelines and stability testing of herbal drugs.	**K5**
5	synthesize herbal products.	**K6**

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6**– Create

Units	Contents	No. of Hours
I	**Introduction to Herbs and Herbal Medicines** Importance of Herbs in human life - Medicinal properties of Herbal plants - Chronic diseases and Herbs - Traditional medicines and its worldwide applications. Herbal Based industry: Scope, study of infrastructure, staff requirements, project profiles, equipment, processing, regulatory requirements, research and development. Role of natural products in herbal medicines. General status and importance of herbal medicines in the chronic diseases. Safety of herbals/herbal pharmacovigilance. W.H.O Policy on herbal medicines.	6
II	Definition of herb, herbal extraction, herbal medicines and herbal drug preparations - Process of phytochemical/Bioactive compounds extraction and isolation - Extraction techniques - Maceration, Percolation, Soxhlet, etc - Isolation of potential bioactive compounds through TLC, column chromatography and prep-HPLC techniques. Preparation of Kuzhi Thailam, Kashayam, Suranam, etc. - Synthetic approach for the identified active compounds to ease the cost-effective herbal drug product availability. Source, selection, identification and authentication of herbal materials - Drying and processing of herbal raw materials. Packing and labelling of finished products.	6
III	**Standardization of Herbal Extracts as per WHO/cGMP Guidelines** Physical, chemical, spectral and toxicological standardization - Chromatographic and Spectrometric - Qualitative and quantitative estimations exemplified by the methods of preparation of at least two standardized extracts. Stability studies for the different types of extracts and its secondary metabolites. Predictable chemical and galenical changes. Structure based Drug Design Approach: Enhancement of bioactivity through structural modification on the identified phytoconstituents - Isomeric compounds and its specificity in bioactivity.	6
IV	**Herbal Product Development** Preparation of liquid orals, tablets, capsules, ointments, creams and cosmetics Methods involved in monoherbal and polyherbal formulation with their merits and demerits. Excipients used in herbal formulation - Synergistic effects of combined Herbal medicines. Study of Drugability: Compatibility studies, Stability studies, Bioavailability and Pharmacokinetic aspects for herbal drugs with examples of well-known documented and clinically used herbal drugs - Drugability comparison	6

	with the existing standard drugs. Quality Control of finished herbal medicinal products.	
V	**Screening of Natural Products for the Following Biological Activities** Method for the identification and screening of potential bioactive compounds through TLC, HPLC, GC and Mass Spectrometry. Thermal stability of secondary metabolites presents in the Herbal plants during the initial screening - Identification of Active Principals, Examples of any five bioactive compounds and their medicinal uses. Screening of natural products for the following biological activities (a) Antidiabetic (b) Anticancer (c) Antihypertensive (d) Antiarrhythmics (e) Antipyretics (f) Antioxidants (g) Antibacterial (h)Antifungal (i) Antiepileptic (j) Osteoporosis (k) Nephroprotective (l) Immunomodulators (m) Alzheimers (n) Antifertility.	**6**

Text Books:

1. Trease, G.E. and Evans, W.C (1989), Pharmacognosy. 13th Edition, Baillière Tindall, London.
2. Wallis T.E (2005)., Textbook of Pharmacognosy, 5th Edition, New Delhi: CBS.
3. AC Moffat (1986), Clarke's Isolation and Identification of Drugs. 2nd ed. The Pharmaceutical Press.
4. C.K. Kokate, Purohit, Ghokhale (1996), Text book of Pharmacognosy 5th edn, Nirali Prakassan.
5. Harborne. B (1973)., Phytochemical Methods. Chapman and Hall Ltd., London.

Reference Books:

1. A.A. Farooqui and B.S. Shreeramu (2001), Cultivation of medicinal and aromatic crops, 1st edn, University press.
2. S.N. Yoganarasimhan (2000), Medicinal plants of India, 1st edn, Interline publication Pvt. Ltd.
3. Paul M. Dewick (1998), Medicinal natural products (a biosynthetic approach), 1st edn, John Wiley and sons Ltd., England.
4. Peter B. Kaufman (1998), Natural Products from plants, 1st edn, CRC press, New York.

Value Added - BIO PESTICIDES & BIO FERTILIZERS

Course Code	Total Hours	Marks
VAC2010	30	100

Objectives:

1. To understand the basic concepts and classifications of bio pesticides.
2. To familiarize the quality control techniques and importance of bio pesticides in modern farming.
3. To study the impact of soil management practices on microbial functions and soil health.
4. To improve bio fertilizer technology to ensure high quality and improved delivery.

Course Outcomes

➢ To understand the basic concepts and classifications of bio pesticides.
➢ To apply the methods of application of bio pesticides.
➢ To analyze the impediments and limitation in production and use of bio pesticides.
➢ To evaluate the characteristic features of bacterial bio fertilizers.
➢ To synthesize bio pesticides and biofertiizers.

Unit I

Definitions, concepts and classification of biopesticides viz. pathogen, botanical pesticides, and biorationales. Botanicals and their uses. Mass production technology of bio-pesticides. Virulence, pathogenicity and symptoms of entomopathogenic pathogens and nematodes.

Unit II

Methods of application of biopesticides. Methods of quality control and Techniques of biopesticides. Impediments and limitation in production and use of biopesticide.
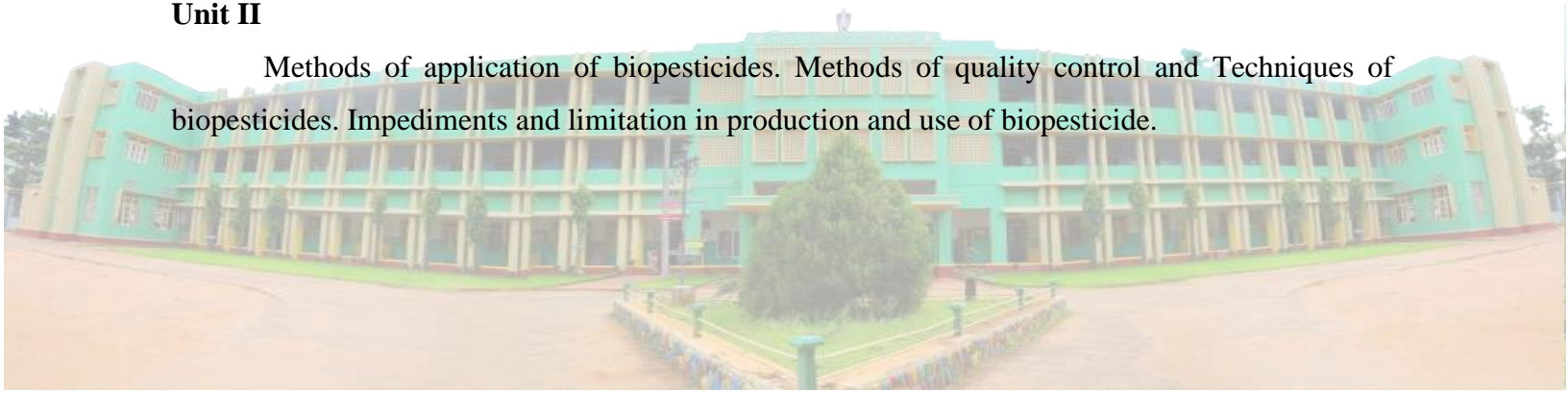
Unit III

Biofertilizers - Introduction, status and scope. Structure and characteristic features of bacterial biofertilizers- Azospirillum, Azotobacter, Bacillus, Pseudomonas, Rhizobium and Frankia; Cynobacterial biofertilizers- Anabaena, Nostoc, Hapalosiphon and fungal biofertilizers- AM mycorrhiza and ectomycorhiza.

Unit IV

Nitrogen fixation - living and symbiotic nitrogen fixation. Mechanism of phosphate solubilization and phosphate mobilization, K solubilization. Production technology: Strain selection, sterilization, growth and fermentation, mass production of carrier based and liquid biofertiizers. FCO specifications and quality control of biofertilizers.

Unit V

Application technology for seeds, seedlings, tubers, sets etc. Biofertilizers -Storage, shelf life, quality control and marketing. Factors influencing the efficacy of biofertilizers.

Text Books:

1. Mahendra Rai, Hand book of Biofertilizers
2. S. M.; Reddy, Ram and Girisham, S. (2001) Bioinoculants for sustainable agriculture and forestry.

Reference Books:

1. Krishnendu Acharya , Surjit Sen , Manjula Ra (2019), Biofertilizers and Biopesticides.
2. Bhoopander Giri , Ram Prasad , Qiang-Sheng Wu, Ajit Varma (2019)Biofertilizers for Sustainable Agriculture and Environment (Soil Biology Book 55) 1st ed.

SPECIFIC VALUE-ADDED COURSE– ART OF BONSAI

Course Code	Credit	Total Hours	Total Marks
BU231V01	**1**	**30**	**100**

Pre-requisite:

Students should be familiar with growing plants.

Learning Objectives:

1. To understand the value of patience and the rewards it can bring when applied consistently, a lesson that can be valuable in various aspects of life.

2. To shape and style trees in aesthetically pleasing ways, allowing practitioners to express their creativity and artistic vision.

Course Outcomes

On the successful completion of the course, student will be able to:		
1	develop the ability to analyze various tree species and create balanced and aesthetically pleasing bonsai designs.	**K1**
2	acquire hands-on skills in techniques such as pruning, wiring, and repotting.	**K2**
3	maintain the health and vitality of their bonsai trees.	**K3**
4	appreciate the philosophy behind bonsai and how it reflects harmony with nature and the passage of time.	**K4**
5	compose different styling techniques, including branch placement, trunk positioning, and foliage arrangement, enabling them to create captivating bonsai compositions.	**K5**

K1 - Remember; **K2 -** Understand; **K3 -** Apply; **K4 -** Analyze; **K5 –** Evaluate

Units	Contents	No. of Hours
I	Overview of Bonsai: History, philosophy, and cultural significance. Principles of Bonsai: Miniaturization, proportion, balance, and harmony. Basic Tools and Materials: Introduction to tools, soil, pots, wire, and other essentials.	**6**

II	Plant Selection: Types of trees suitable for bonsai, characteristics, and seasonal considerations. Pruning and Shaping: Techniques for shaping branches and foliage, understanding apical dominance. Wiring and Bending: Using wire to guide growth and create desired shapes, avoiding damage. Repotting and Root Pruning: Importance of repotting, timing, and proper techniques.	**6**
III	Classic Bonsai Styles: Informal upright, formal upright, slanting, cascade, semi-cascade, and more. Elements of Design: Emphasis, balance, contrast, rhythm, and unity in bonsai composition. Pot Selection: Matching pots to tree styles, understanding pot aesthetics and sizes.	**6**
IV	Watering and Fertilizing: Proper watering techniques and balanced nutrition for bonsai health. Pest and Disease Management: Identifying common issues and preventive measures. Seasonal Care: Adjusting care routines for different seasons, winter protection. Display and Presentation: Creating captivating displays for different occasions and settings.	**6**
V	Air Layering and Grafting: Advanced propagation techniques to create unique bonsai. Deadwood Techniques: Carving and preserving deadwood features for artistic effect. Creating Miniature Landscapes (Saikei): Combining multiple trees and elements to tell a story.Bonsai Exhibition and Judging: Preparing bonsai for exhibitions, understanding evaluation criteria.	**6**

Text Books:

1. Kawasumi, M. (2012). The Secret Techniques of Bonsai: A Guide to Starting, Raising, and Shaping Bonsai. Kodansha International, Tokyo, Japan.

2. Lewis, C. (1997). Bonsai Survival Manual: Tree-by-Tree Guide to Buying, Maintaining, and Problem Solving. Cassell, UK.

3. Prescott, D. (2009). The Bonsai Handbook. Firefly Books, Canada.

References Books:

1. Chan, P. (2019). The Bonsai Bible: The Definitive Guide to Choosing and Growing Bonsai. Octopus Publishing Group, UK.

2. Tomlinson, H. (2004). The Complete Book of Bonsai: A Practical Guide to its Art and Cultivation. Dorling Kindersley, New York, USA.

3. Gustafson, H. L. (1994). The Bonsai Workshop. Timber Press, USA

4. Naka, J. Y. (1984). Bonsai Techniques I & II. Bonsai Institute of California, USA

5. Koreshoff, D. R. (2007). Bonsai: Its Art, Science, History, and Philosophy. Tuttle Publishing, Vermount, USA.

Value Added - HERBAL COSMETICS

Course Code	Total Hours	Marks
VAB210	30	100

Objectives:

1. To understand the basic principles of various herbal or natural cosmetic preparations
2. To analysis and testing methods in cosmetics.

Course Outcomes

➢ To acquire the knowledge of types of herbal cosmetics having impact on beautification and therapeutic value.

➢ To learn about types of raw materials used in cosmetics industries.

➢ To gain the skills in make-up preparations, nail and hair care products preparations using different herbs.

➢ To gain the skills in preparation of other types of cosmetics such as oral hygiene products, deodorant, bath and shower products including antiperspirants.

➢ To become Entrepreneurship in cosmetic fields and Job opportunities in cosmetic industry.
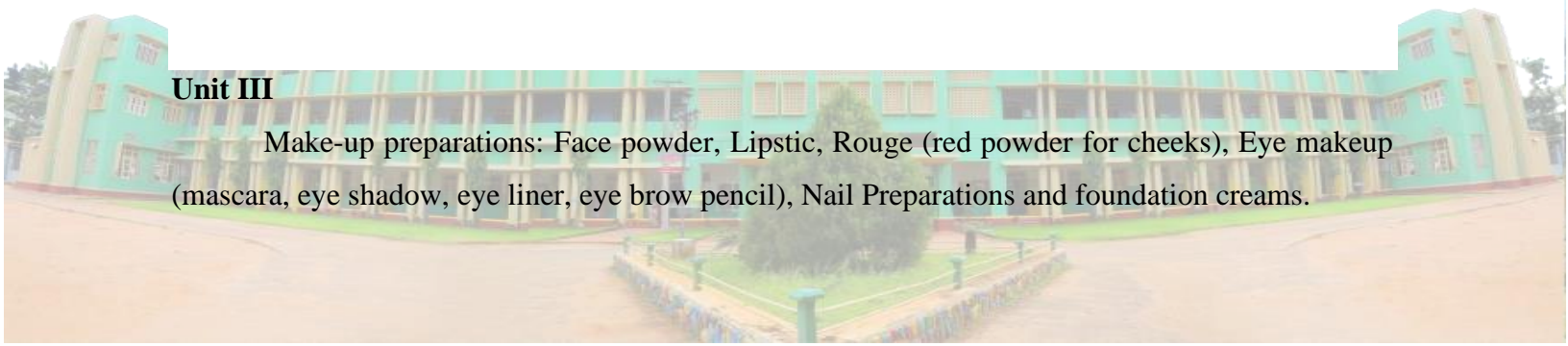
Unit I

Introduction to herbal/natural cosmetics, their advantages, Types of herbal cosmetics, Study of common drugs used in cosmetics. Indian cosmetic industry and scope of herbal cosmetic in market.

Unit II

Facial cosmetics: cleansing creams, Emollients, Moisturizers (cold cream, moisturizing cream, night cream), Bleaches, Sunscreen and anti-sunburn preparations.

Unit III

Make-up preparations: Face powder, Lipstic, Rouge (red powder for cheeks), Eye makeup (mascara, eye shadow, eye liner, eye brow pencil), Nail Preparations and foundation creams.

Unit IV

Hair care products: hair growth formulations, Hair dressings, hair cleanser, hair dying agent, antidandruff agent, hair tonic/hair nourisher, hair tonic, hair conditioners, hair oil, shampoos, hair colorants (Chemicals and Botanicals used as colorants). Common herbs used in hair cosmetics.

Unit V

Study of some formulations used in various preparations (complexion lotion, cleansing cream, nail cream, face scrub, face packs/face masks, shampoos, deodorants and powders). Other types of cosmetics: Deodorant, Bath & Shower Products (Soaps, Shampoo), Antiperspirants.

Text Books:

1. Textbook of Herbal Cosmetics Paperback: Vimaladevi M.
2. Herbal Cosmetics Handbook- by H Panda
3. International Cosmetic Ingredient Dictionary and Handbook- by The Personal Care Products Council.

Reference Books:

1. Handbook of Cosmetic Science and Technology –edited by Andre O. Barel et al., Publisher: Informa Healthcare.
2. The Chemistry and Manufacture of Cosmetics-edited by Mitchell L. Schlossman, Allured Publishing Corporation
3. Harry's Cosmeticology: edited by Meyer R. Rosen

Value Added - FLOWER, FOLIAGE AND DRY STICK ARRANGEMENT

Course Code	Total Hours	Marks
VAB206	30	100

Objectives:

1. The student will understand the basic principles and elements of floral design.
2. The student will have a working knowledge of the materials and accessories used in basic floral design.

Course Outcomes

➤ To understand the basic principles of floral design such as balance, proportion, and harmony.

➤ To learn about different types of flowers, foliage, and dry sticks commonly used in arrangements, including their characteristics and seasonal availability.

➤ To develop the skills to cut, condition, and arrange flowers, foliage, and dry sticks to create visually appealing arrangements.

➤ To explore creativity through arranging flowers, foliage, and dry sticks to convey themes or emotions.

➤ To learn to troubleshoot common issues that arise during the arrangement process, such as wilted flowers or unstable structures.

Unit I Introduction to Statistics:

Introduction and Brief History of Flower arrangement. Floral Materials -Flowers (Fresh, Dried, Artificial), Accessories and Conditioning

Unit II Measures of Central Tendency:

Design: Principles of Design, Elements of Design. Colour – Spectrum, Pigment, Dimension – Hue, Value and Intensity, Lighting Effects

Unit III Correlation:

Linear Design used in Floral Design: Formal, New Convention, Parallel Systems, Western Line.

Unit IV Regression:

Mass Design: Triangular and Circular, Dried or Permanent Arrangements, Symmetrically-balanced Arrangements, Asymmetrically-balanced Arrangements

Unit V Index Numbers:

Hand held/ hand tied, Dish Garden/Terrarium Construction, Holiday and Special Occasion Arrangements Organization and Operation of Retail Florist Shop

Text Books:

1. Dubey, R.C. (2006). Text *Book of Biotechnology*. New Delhi: S. Chand and Company.
2. Ajoy Paul, (2011). *Text book of Cell and Molecular Biology*. Jaipur: Books and Allied Pvt. Ltd.
3. Ignacimuthu, S. (2012). Biotechnology – An introduction. U.K.: Alpha Science International Ltd;

Reference Books:

1. Norris, J. R., Read, D. J. and Verma, A. K. (1992). *Methods in Microbiology*. Vol. XXIV. London: Academic Press.
2. John Jothi Prakash, E. (2004). *Outlines of Plant Biotechnology*. NewDelhi: Emkay Publications.

SPECIFIC VALUE-ADDED COURSE– NATURAL RESOURCES AND

THEIR CONSERVATION

Course Code	Credit	Total Hours	Total Marks
BP231V01	**1**	**30**	**100**

Course Outcomes

	On the successful completion of the course, student will be able to**:**	
1	explain the natural resources	**K1**
2	recognize the critical role natural resources play in supporting life and ecosystems.	**K2**
3	distinguish between various natural resource categories, including energy resources, and biological resources	**K3**
4	analyze the consequences of the over-exploitation of non-renewable resources.	**K4**
5	evaluate the impacts of climate change on natural resources and ecosystems	**K5**

K1 - Remember; **K2 -** Understand; **K3 -** Apply; **K4 -** Analyze; **K5 –** Evaluate

Units	Contents	No. of Hours
I	Introduction to Natural Resources and Conservation- Definition and classification of natural resources Importance of natural resources for human well-being and ecosystem functioning, Overview of conservation goals and strategies, Introduction to ecological principles and systems thinking.	**6**
II	Renewable Resources - Study of renewable resources: water, forests, wildlife, fisheries, and soil,, Sustainable management practices for renewable resources, Case studies of successful renewable resource conservation projects.	**6**
III	Non-Renewable Resources - Exploration of non-renewable resources: minerals, fossil fuels, Environmental impacts of non-renewable resource	**6**

	extraction and utilization, Transitioning to alternative energy sources and sustainable mining practices, Biodiversity and Ecosystem services.	
IV	Understanding biodiversity and its importance, Ecosystem services provided by diverse ecosystems, Threats to biodiversity and strategies for biodiversity conservation.	**6**
V	Climate Change and Resource Conservation- Impacts of climate change on natural resources and ecosystems- Mitigation and adaptation strategies for resource conservation in a changing climate, International agreements and policies addressing climate change and resource conservation.	**6**

Text Books:

1. Tom Tietenberg (Author), Lynne Lewis. 2023. Environmental and Natural Resource Economics, 12th Edition, Routledge.

2. Natural Resources. Nancy Dickmann .2023. Black Rabbit Books

References Books:

1. Daniel D.Chiras& John P.Regnold 2016 Text book of Natural Resource Conservation: Management for a Sustainable future, 2nd Edition. Narosa Publisher.

2. Barry C. Field. 2023. Natural Resource Economics: An Introduction, Fourth Edition 4th Edition. Waveland Press, Inc.

Value Added - TECHNIQUES IN HI-TECH HORTICULTURE

Course Code	Total Hours	Marks
VAB209	30	100

Objectives:

1. To recognize the importance of nursery and gardening
2. To gain an understanding of nursery management

Course Outcomes

➢ To recognize the basic process required for growing and maintaining plants in nurseries.

➢ To explain the different methods of plant propagation and various gardening styles.

➢ To apply techniques for effective hardening of plants and computer applications for creative gardening.

➢ To compare and contrast cultivation of different vegetables and growth of plants in nursery and gardening.

➢ To develop new strategies to enhance growth and quality of nursery plants.

Unit I

Introduction- Scope and importance, Branches of horticulture; Role in rural economy and employment generation.

Unit II Budding

Types of Budding-T-Budding Chip Budding; Preparing the Stock Preparing the Stock and the Scion Bud, Securing the Bud, Budding Aftercare.

Unit III Grafting

Selecting and Handling Scion Wood, Types of Grafting, Cleft Graft, Bark Graft, *Side*-Veneer Graft, Splice Graft, Whip and Tongue Graft, Saddle Graft, Bridge Graft, Inarch Graft, Tools and Supplies for Budding and Grafting
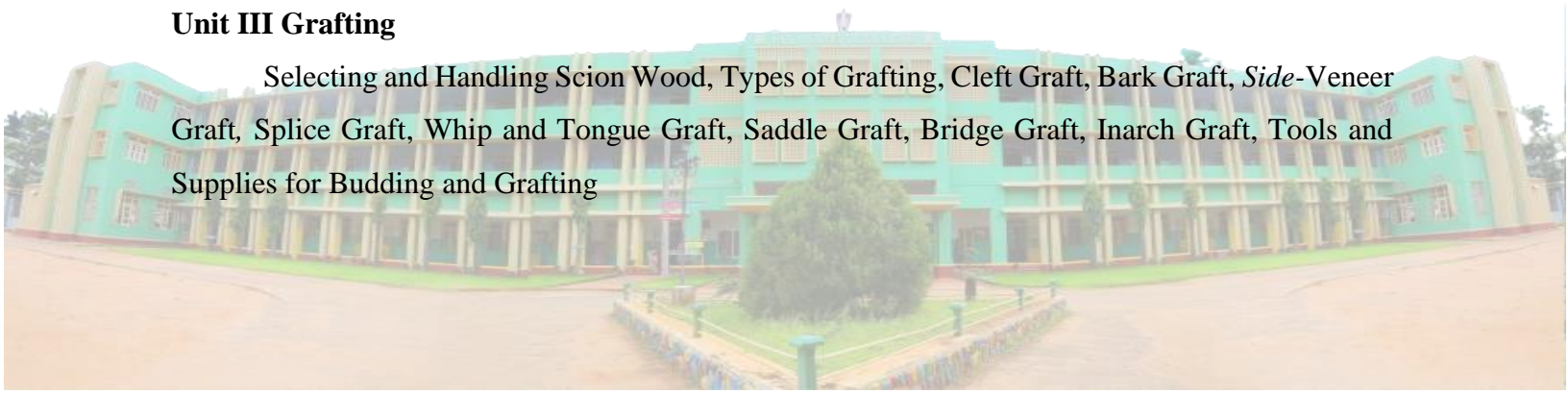
Unit IV Layering

Types of Layering, Simple layering, Tip layering, compound layering, Air Layering, Mount layering, Natural Forms of Layering.

Unit V Biopesticides

Preparation of Biopesticides, Cow urine extract, Fermented curd water, Dashparni extract, Neem-cow urine extract, Mixed leaves extract, Chili–garlic extract, Broad Spectrum Formulations

Text Books:

1. Bose T.K and Mukherjee, D. 2000. *Gardening in India*, Oxford & IBH Publishing Co., New Delhi.
2. Sandhu, M.K. 2005. *Plant Propagation*, Wile Eastern Ltd., Bengaluru.

Reference Books:

1. N.L. Patel, S.L. Chawla, T.R. Ahlawat. 2016. *Commercial Horticulture*, ASPEE College of Horticulture, Navsari Agricultural University, Navsari 396 450, Gujarat,
2. Prasad S & Kumar U. 2005. *Greenhouse Management for Horticultural Crops*. 2nd Ed. Agrobios.
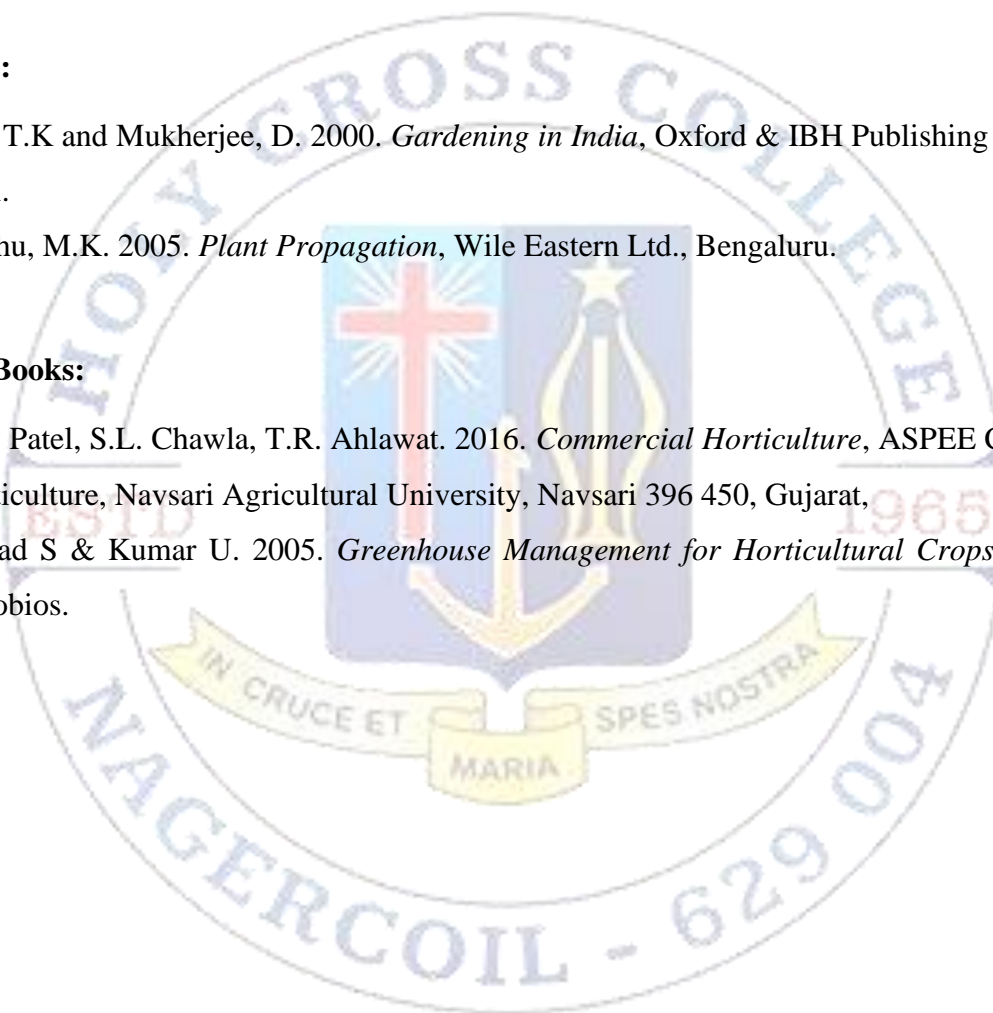
SPECIFIC VALUE-ADDED COURSE– PET KEEPING AND CARE

Course Code	Credit	Total Hours	Marks
ZU231V01	**1**	**30**	**100**

Pre-requisite:

A foundational knowledge of animal behaviour, basic care practices, and an interest in the welfare of animals is important.

Learning Objectives:

1. To provide comprehensive knowledge about pet ownership and promote awareness of ethical responsibilities towards pets.

Course Outcomes

On the successful completion of the course, student will be able to:		
1	identify legal regulations and guidelines related to pet ownership	**K1**
2	interpret pet behaviour and communication cues	**K2**
3	utilize grooming routines and implement basic first aid and emergency care techniques.	**K3**
4	analyse the impact of legal regulations on animal welfare and responsible pet care.	**K3**
5	assess living conditions and space availability and the appropriateness of nutrition and feeding plans.	**K5**
6	design strategies for responsible pet selection based on living conditions and lifestyle	**K6**

K1-Remember; **K2**-Understand; **K3** -Apply; **K4** –Analyze; **K5**-Evaluate; **K6**-Create

Units	Contents	No. of Hours
I	**Introduction to Pet Keeping**: Importance of pets in Indian culture and society - commonly kept pets in India and their roles - Legal regulations and guidelines for pet ownership - Cultural considerations in pet care - Ethical responsibilities towards pets and animal welfare.	**6**

II	**Selecting the Right Pet:** Assessing living conditions and space availability - Choosing pets based on lifestyle and family dynamics - Pros and cons of popular pet choices - Identifying local and indigenous pet breeds.	**6**
III	**Practical Aspects of Pet Care:** Nutrition and feeding practices - Grooming routines - common health concerns specific to India - Basic first aid and emergency care.	**6**
IV	**Nurturing Healthy Relationships with pets:** Pet behaviour and communication - Training techniques for pets and households - promoting mental and physical stimulation for pets.	**6**
V	**Community Engagement and Advocacy:** Promoting responsible pet ownership in local communities - organizing and participating in pet care workshops - Collaborating with local animal welfare organizations - raising awareness about pet-related issues in India.	**6**

Reference Books:

1. David Alderton: The complete book of pets & pet care: the essential family reference guide to pet breeds and pet care

2. Selvam R.K. Veera. 2010. Handbook of per care and management. Soujanya Books. 1st edn. Jaipur.

3. Dash, S.K. 2008. Hand book of veterinary practices. 1st edition. Kalyani Publishers.

4. Sapre, V A. and Dakshinkar, N.P. 2020. Hand book for veterinary physician. 17th edn. CBS Publishers.

5. Bhikane, A.U. and Kawithar, S.B. 2022. Handbook for veterinary clinicians. Agribiovet Press.

Value Added– DAIRY PRODUCTS

Course Code	Total Hours	Marks
VAZ20110	30	100

Objectives:

1. To introduce students to the fundamental principles of dairy farms and dairy products and develop entrepreneurial and teamwork skills.

Course Outcomes

➢ To recall and explain the fundamental principles of dairy farming and the key factors affecting milk quality

➢ To demonstrate processing techniques of various dairy products and their relevance.

➢ To apply their knowledge of cheese and paneer making techniques.

➢ To analyze the milk and milk products incorporating quality assurance and packaging strategies.

➢ To evaluate the common issues encountered during the preparation of dairy sweets and other products.

➢ To design business plans for dairy product marketing and entrepreneurship.

Unit I

Dairy Farming: Introduction to South Indian Dairy Industry. Key dairy breeds in South India - Dairy Farm Management: Basics of setting up a dairy farm - Feeding and nutrition for dairy cattle.

Unit II

Dairy Product Processing: Importance of milk quality – and hygiene. Introduction to dairy product manufacturing - milk Processing and Pasteurization. Curd, Buttermilk and Ghee Production.

Unit III

Cheese and Paneer Making: Varieties of cheese and paneer - Cheese Making Process and steps - Paneer Production - Paneer-making techniques - Flavored paneer preparation.

Unit IV

Traditional Dairy Sweets: Dairy-Based Sweets- Preparing Sweets like Rasagulla and Mysore Pak - Quality Control - Quality Assurance and Packaging - Identifying common issues and solutions in sweet making.

Unit V

Dairy Product Marketing and Entrepreneurship: Marketing Dairy Products - Strategies for marketing dairy products - Identifying target markets - Starting Your Dairy Business - Business planning and setup - Regulations and licenses.

Reference Books:

1. Arumugam, N., Murugan, T., Johnson Rajeshwar, J. and Ram Prabhu, R. (2011). *Applied Zoology.* Nagercoil: Saras Publications.
2. Eiri Board, 2012. *Milk Processing and Dairy Products Industries.* Delhi: Engineers India Research Institute.
3. De Sukumar. 2001. *Outlines of Dairy Technology.* United Kingdom: Oxford University Press.

Value Added– MEDICAL CODING

Course Code	Total Hours	Marks
VAZ20112	**30**	**100**

Objectives:

1. To equip students with the foundational knowledge and practical skills necessary to excel in the field of medical coding

Course Outcomes

➤ To recall and remember the basic structure and utilization of coding systems in healthcare.

➤ To demonstrate an understanding of the importance of medical coding in the context of healthcare administration and billing.

➤ To apply their knowledge to assign the correct diagnostic codes for a variety of medical conditions and diseases.

➤ To critically analyze healthcare regulations and ethical coding practices, with a focus on patient privacy and confidentiality.

➤ To evaluate and solve practical scenarios and case studies by applying their coding knowledge to make informed decisions.

Unit I

Introduction to Medical Coding: Understanding the Basics of Medical Coding - Importance and Role of Medical Coding - Coding Standards and Guidelines – Overview of Coding Systems: ICD-10-CM, CPT, and HCPCS Level II.

Unit II

Diagnosis Coding with ICD-10-CM - Getting to Know ICD-10-CM - How ICD-10-CM Codes are Structured - Coding for Diseases, Conditions, and Injuries.
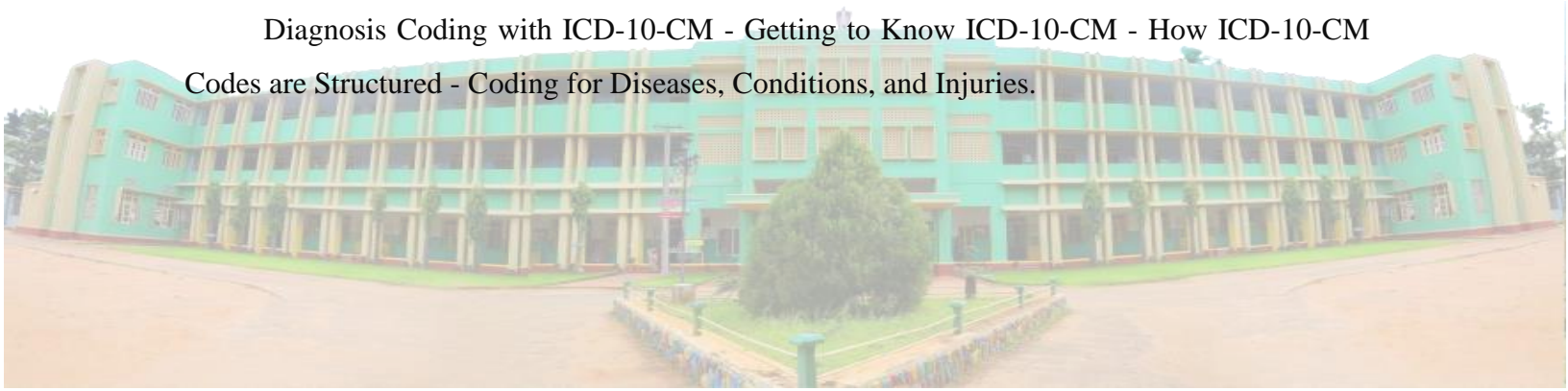
Unit III

Procedural Coding with CPT –Demystifying CPT (Current Procedural Terminology) – Coding for Medical Procedures and Services-Surgical Coding and the Use of Modifiers

Unit IV

HCPCS Level II and Specialty Coding – Introduction to HCPCS Level II - Coding for Durable Medical Equipment, Supplies, and Drugs.

Unit V

Compliance, Ethics, and Quality Assurance - Healthcare Compliance and Regulatory Guidelines - Ethical Coding Practices and Confidentiality - Auditing and Ensuring Coding Quality

Reference Books:

1. Mukesh Kanna, B.2020. Medical Coding - A Quick Study Guide. Publisher: Notion Press
2. Sameer Kumar, 2019. Medical Coding: The Practical Guide. Publisher: Notion Press
3. Sandeep S. Agarwal, 2019.Medical Coding: ICD-10, CPT, HCPCS (A Quick Study Guide). Publisher: Notion Press.
4. TerryTropin.2021.ICD-10-CM Coding Guidelines Made Easy. Publisher: Cengage Learning.
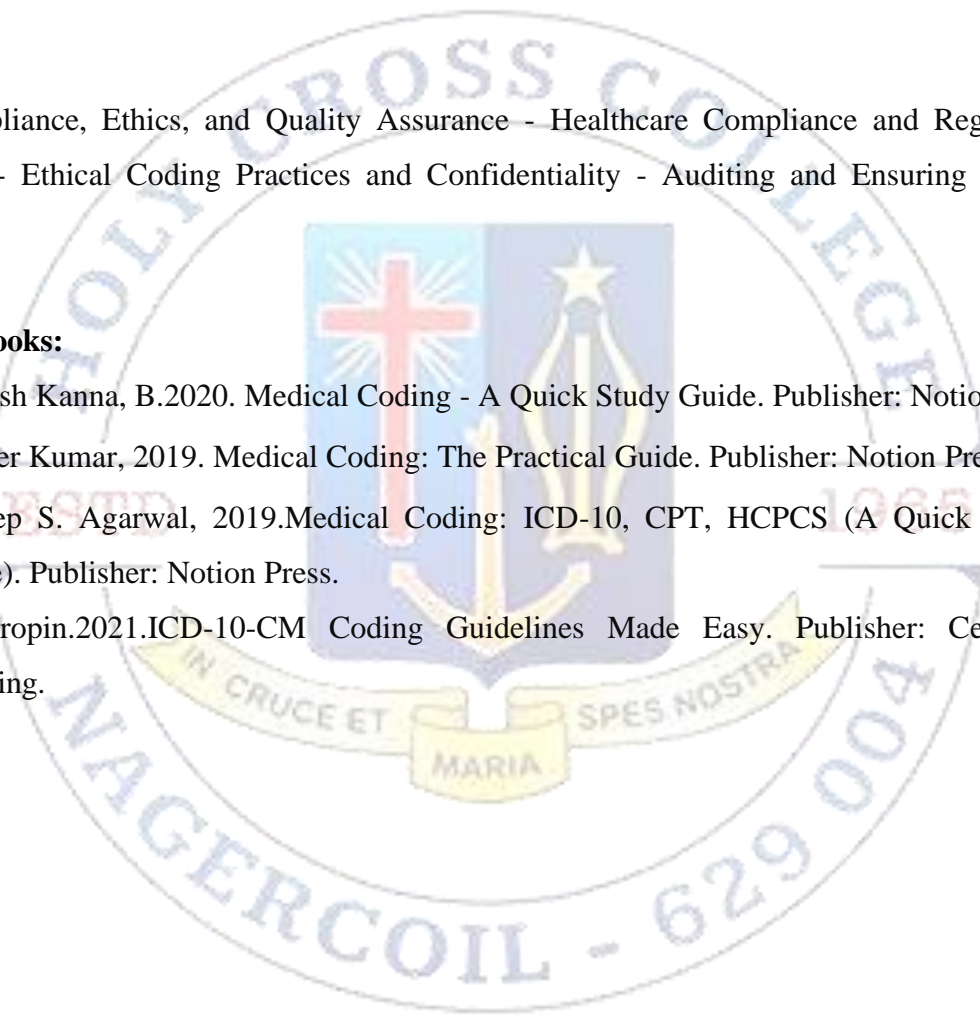
SPECIFIC VALUE-ADDED COURSE– BASICS OF EXCEL

Course Code	Credit	Total Hours	Marks
ZP231V01	**1**	**30**	**100**

Pre-requisite:

Basic computer literacy and familiarity with navigating computer applications.

Learning Objectives:

1. To equip the students to present data using Excel's various features and printing options.

Course Outcomes

On the successful completion of the course, student will be able to**:**		
1	recall the components of Excel's interface and basic cell formatting.	**K1**
2	summarize the significance of relative, absolute, and mixed cell references in formulas.	**K2**
3	apply data entry techniques and utilize basic calculations and formulas.	**K3**
4	analyze different chart types to determine their suitability for presenting specific types of data.	**K3**
5	evaluate the effectiveness of using functions and charts to ensure clarity and effective visualization.	**K5**
6	design and create various types of charts (bar, column, pie) based on specific data sets.	**K6**

K1-Remember; **K2**-Understand; **K3** -Apply; **K4** –Analyze; **K5**-Evaluate; **K6**-Create

Units	Contents	No. of Hours
I	Excel Essentials and Interface: Introduction to Excel's - Excel interface, workbooks, and sheets – selection of cells, rows, and columns - basic cell formatting: font, alignment, and fill.	6
II	Data Entry, Formulas, and Functions: Data entry techniques and AutoFill - Introduction to formulas and basic calculations - Using SUM, AVERAGE, COUNT, and other functions - cell references: relative, absolute, and mixed.	6
III	Data Management and Analysis: Sorting and filtering data using find and replace to manipulate data – Data analysis using excel (t test, Regression, Correlation, ANOVA), data validation for data integrity.	6
IV	Charts and visualization: Creating different chart types: bar, column, and pie charts - formatting and enhancing charts for clarity - Adding labels, titles, and legends to charts.	6
V	Printing, Sharing, and Review: Setting up print options and page layout - printing worksheets and workbooks - sharing workbooks via email and cloud storage - review of key concepts and practical exercises.	6

Reference Books:

1. Kabir Das. 2021.Microsoft Excel: Short keys and formulas. Notion Press, India.
2. Manneet Singh Mehta. 2021. Microsoft Excel Professionals. 2021 guide. BPB Publications, India.
3. Lokesh Lalwani. 2019. Excel 2019 – All in one. 1stEdn. BPB Publications, India.

Value Added– SEAFOOD PRODUCTS

Course Code	Credit	Total Hours	Marks
VACPZ2	1	30	100

Learning Objectives:

1. To study the different seafood processing strategies to explore the market for fish products.
2. To develop different products from fish and shellfish.

Course Outcomes

➢ To understand the nutritional components and major sources of the seafood products.

➢ To classify the daily requirements of nutritious seafood for better human wellbeing and health.

➢ To identify the different methods of seafood processing and preservation techniques.

➢ To compute the cost of the production of value-added products from seafood's and the profit after marketing.

➢ To evaluate the nutritive value and marketability of seafood products.

➢ To establish a seafood products industry for their own entrepreneurship.

Unit I Introduction of seafood products

Definition of seafood products, Principle of seafood preservation and processing - Scope of seafood products - Food Security

Unit II List of seafood products

Shrimp Products-Cephalopod products –Finfish products - Other items.

Unit III Nutritional biochemistry of seafood products

Classification, nutrient quality and evaluation of proteins, lipids and carbohydrates.

Unit IV Methods of seafood processing

Sun drying, salting, smoking, marinating and fermentation.

Unit V Value added and by-products of seafood

Fish and prawn pickles, fish sauce and fish paste, fish mince, fish finger, fish cutlet, fish wafers, fish silage, fish oil, fish maws, fish soup powder, fish balls, fish curry, shrimp extract, chitin and chitosan, pearl essence, isinglass.

Text Book:

1. Mohan, C. O., Elavarasan, K., Sreejith, S. and Sreelakshmi, K. R. (eds) (2021) Fish and Marine Products Processing, Central institute of Fisheries Technology, Cochin, India.

Reference Books:

1. Gopakumar K. Text Book of Fish Processing Technology (2002). New Delhi (India) ICAR.
2. K. Rathnakumar. Textbook On Fish Processing Technology (2021). Narendra Publishing House'
3. Hall, G. M., 1992. Text book of Fish Processing Technology, ICAR Publication.
4. Blackie, Hui, Y. M., Marle, D. P. and Richard, J. G., (2001). Fish Processing Technology
5. Sen, D. P., 2005. Technology of Fishery Products, Fishing Chimes.
6. Wheaton, F. W. and Lawson, T. B., 1985. Processing Aquatic Products.

SPECIFIC VALUE-ADDED COURSE– PROCEDURAL LANGUAGE

Course Code	Credit	Total Hours	Marks
SU231V01	**1**	**30**	**100**

Pre-requisite:

Basic knowledge of programming concept.

Learning Objectives:

1. To familiarize the students with basic concepts of computer programming and developer tools.

2. To develop the skill of programming by learning the basic structure and methods.

Course Outcomes

	On the successful completion of the course, student will be able to**:**	
1	remember the basic fundamentals of C and understand theconcepts.	**K1& K2**
2	understand the functionality and purpose of control structuresand apply the concepts in programming.	**K2 & K3**
3	understand the various programming constructs and implement it to perform specific task.	**K2 & K3**

K1-Remember; **K2**-Understand; **K3** -Apply

Units	Contents	No. of Hours
I	**Introduction to Computing:** Introduction – Components of a Computer – Concept of Hardware and Software – Art of Programming through Algorithms and Flowcharts. **Overview of C:** History of C – Importance of C – Sample Programs 1, 2, 3, 4, 5 – Basic Structure – Programming Style – Executing a C Program**.**	**6**

II	**Control Statements:** Conditional execution – Iterations – Multiple Selection. Expressing Computations. **Basic Values and Data:** The abstract state machine – Basic types – Specifying values – Implicit conversions – Binary representations.	**6**
III	**Derived Data Types:** Arrays – Structures. **Functions:** Simple functions – main is special – Recursion. **C Library Functions:** General properties of the C library and its functions – String processing and conversion – Runtime environment settings – Program termination and assertions.	**6**
IV	**Pointers:** Pointer operations – Pointers and Structures – Pointers and arrays – Function pointers. **Function – Like Macros:** Working of function-like macros – Argument checking – Accessing the calling context – Default arguments.	**6**
V	**Files:** Introduction - Defining and opening a file – Closing a file – Input/Output operations on files – Error handling during I/O operations – Random access to files.	**6**

Text Books:

1. Jens Gustedt (2019), *Modern C*. (2nd Edition). Publisher(s): Manning Publications. ISBN: 9781617295812.

2. Balagurusamy, E. (2019). Programming in ANSI C. (8th edition). New Delhi: Tata McGraw Hill Education Private Limited.

Reference Books:
1. King, K.N. (2008). *C Programming: A Modern Approach.* (2nd edition). New York: W.W. Norton & Company.
2. Stephen Prata, (2004). *C Primer Plus.* (5th edition). New York: Addison-Wesley Publication.
3. Paul Deitel, & Harvey Deitel, (2009). *How to Program C.* (6th edition). New Delhi:PHI Learning Private Limited.

Value Added – ASP.NET PROGRAMMING

Course Code	Total Hours	Marks
VASC209	**30**	**100**

Objectives:

1. To enable the students to understand the programming features of .Net Framework using ASP.NET.
2. To develop dynamic web pages by using ASP.NET.

Course Outcomes

➢ To understand of the ASP.NET framework, including its architecture, components.

➢ To apply web applications using ASP.NET web forms, including creating interactive web pages.

➢ To recognize the syntax and usage of ADO.NET classes and methods for database interaction.

➢ To test and debug ASP.NET applications effectively.

Unit I Introduction to ASP.NET 4.0

Microsoft .NET Framework – ASP.NET Versions – New and Improved Features in Visual Studio 2010 – Getting Started with ASP.NET 4.0 – ASP.NET Application Life Cycle – The ASP.NET Page life Cycle – Asp.NET Configuration Files.

Unit II ASP.NET State Management

Server-Side State Management – Client-Side State Management – New State-Management Techniques in ASP.NET 4.0 Application. **Working with ADO.NET:** ADO.NET Architecture Components -Advanced Features in ADO.NET – The ADO.NET Entity Framework.

Unit III Binding Data in ASP.NET

The ASP.NET Data Controls (List, Data List, Data Grid, Grid View, Details View, Form View, List View) – Data Source Controls in ASP.NET (Object Data Source, Sql Data Source, Access Data Source) – The Chart Control.

Unit IV Building and Deploying ASP.NET Web Sites

Creating Web Sites in ASP.NET – Using ASP.NET Master Pages – Using Themes in ASP.NET – Best Strategies for Deploying ASP.NET Applications. **The ASP.NET Security Model:** Authentication – Authorization – Impersonation The ASP.NET Provider Mode.

Unit V Tracing and Debugging in ASP.NET

Tracing – Debugging – Tracing and Debugging ASP.NET Ajax Applications. **Dynamic Data:** The ASP.NET Dynamic Data Framework – Creating Dynamic Data Web Site – Working with Dynamic Data Entity Applications – Converting an Existing Web Site to a Dynamic Data Web Site.

Text Book:

1. Joydip Kanjilal (2010). ASP.NET 4.0 *Programming*. (New Edition). New Delhi: Mgraw Hill.

Reference Books:

1. Stephen Walther, Kevin HoffMan, Nate Dudek, (2011). *ASP.NET 4 Unleashed*. (1st edition). South Asia: Dorling Kindersly Pvt Ltd, Pearson Education.

2. Kogent Learning Solutions Inc. (2011). *.NET 4.0 Programming 6 In-1 Black Book*. (2nd edition). Bangalore: Wiley India Pvt.Limited Publication.

3. Richaro Peres, (2016). *Entity Framework Core Cookbook*. (2nd edition). Bangalore: Packt Publication.
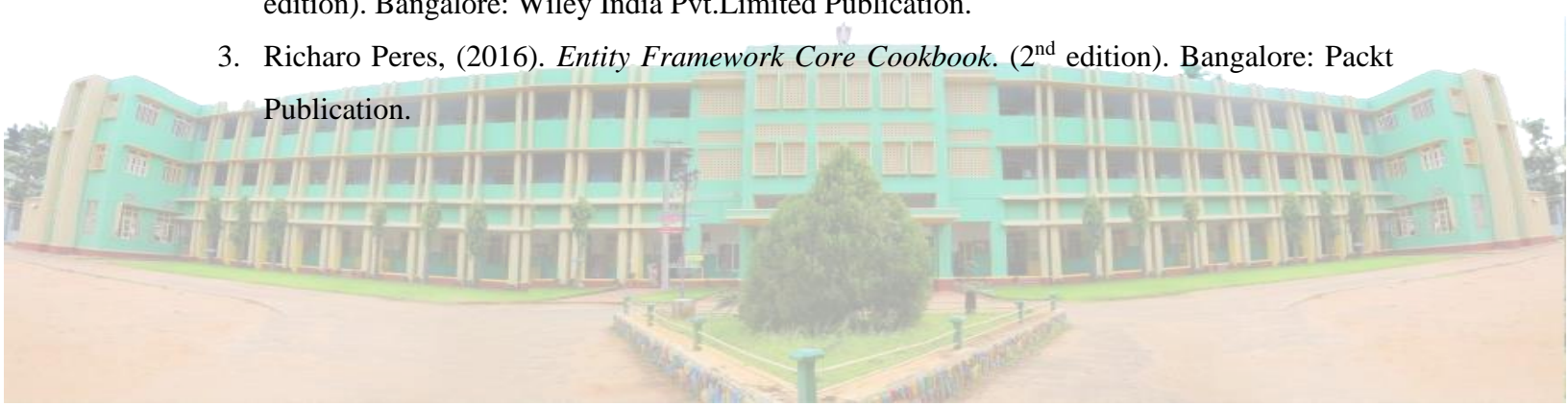
Value Added – **AI TOOLS**

Course Code	Total Hours	Marks
VASC2011	30	100

Objectives:

1. To understand the basics of AI and AI tools.
2. To use AI tools for certain applications.

Course Outcomes

➢ To recognize the real-world needs that AI addresses and enhance their problem-solving abilities.
➢ To apply state space search techniques to real-world problems.
➢ To apply state space search techniques to real-world problems.

Unit I

Introduction to AI: Uses of AI, Needs of AI, Approaches of AI, Different forms of AI, Drawbacks of AI

Unit II

Reasoning, Problem Solving, Knowledge Representation, Planning and Decision Making, Learning, Natural Language Processing, Perception, Perception, Robotics, Social Intelligence, General Intelligence

Unit III

Search and Optimization, State space search, Local search, Logic, Probabilistic methods for uncertain reasoning

Unit IV

Classifiers and Statistical learning methods, Artificial neural networks, Deep Learning, Specialized hardware and software

Unit V

Introduction to AI Tools, List of AI Tools: Scribe, Super Meme, Lumen5, Lalal, Magic eraser, Soundraw, copy.ai/jasper.ai, sembly.ai, get.mem.ai

Text Book:

1. Dr. Nilakshi Jain, Artificial Intelligence, as per AICTE: Making a System Intelligent, Wiley Publications, 1st Edition, 2019.

Reference Books:

1. Stuart Russell and Peter Norvig, Artificial Intelligence: A Modern Approach, Pearson Publications, 4th Edition, 2020.
2. Saroj Kaushik, Artificial Intelligence, Cengage Learning India, 2011.
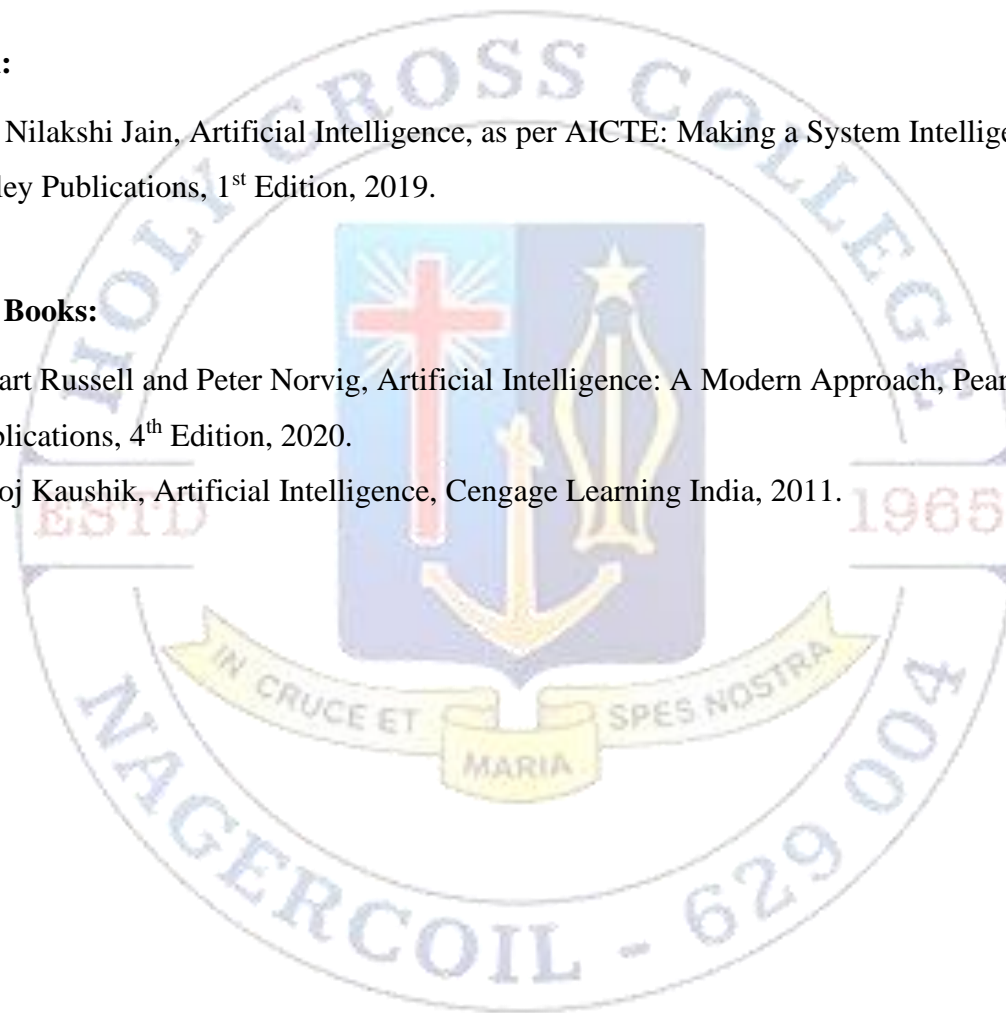
Value Added – HADOOP

Course Code	Total Hours	Marks
VASC2010	30	100

Objectives:

1. To enable the students to understand the big data concepts and Apache Hadoop framework and to manage the applications that have to deal with huge datasets.

2. To develop Hadoop database management System with the help of Apache Hive.

Course Outcomes

➢ To remember the basic ideas of Big Data Analytics.

➢ To understand the functionality and purpose of the Hadoop technologies.

➢ To understand the various Structures and procedures of Hadoop Apache Hive.

Unit I

Introduction to Big Data – Hadoop Basics – Hadoop ecosystem – Hadoop technology-Hadoop Ecosystem.

Unit II

Hadoop Architecture-Hadoop Distributed File System: How does HDFS work. HDFS Architecture -Name Node-Data Node-Features of HDFS

Unit III

Yet Another Resource Negotiator (YARN): Components of YARN: -A Global Resource Manager-A Node Manager-Containers-Application Master

Unit IV

Hadoop Map Reduce: Introduction to map reduce -Algorithms-How does Map Reduce works? -The map stage-The reduce Stage-Key Features of Map Reduce-Applications of Map Reduce.

Unit V

Introduction to Apache Hive: Installation procedure-working with hive.

Text Books:

1. Sridhar Allah- Big Data Analytics with Hadoop 3(First Edition, Kindle Edition.)

2. Data Analytics with Hadoop: An Introduction for Data Scientists (Grayscale Indian Edition) by Benjamin Bengfort and Jenny Kim.
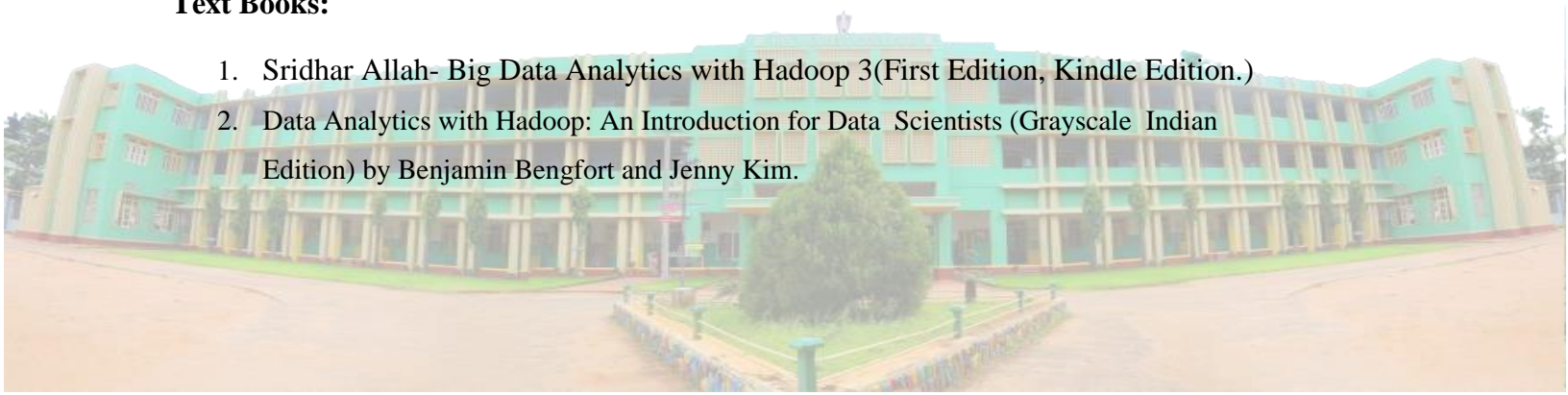
SPECIFIC VALUE-ADDED COURSE– WEBSITE CREATION

Course Code	Credit	Total Hours	Marks
SP231V01	1	30	100

Pre-requisite:

1. Basic knowledge in HTML tags & skill of creating web pages should be known
2. Knowledge of basic Computer hardware & software is also necessary.

Learning Objectives:

1. To define the principle of Web page design.
2. To visualize the basic concept of HTML.
3. To introduce basics concept of CSS.

Course Outcomes

On the successful completion of the course, student will be able to**:**		
1	develop the skill & knowledge of Web page design.	**K1, K3**
2	students will understand the knowhow and can function either as an entrepreneur or can take up jobs in the multimedia	**K2, K4**
3	create the Web site development studio.	**K5, K6**
4	develop the concept of web publishing	**K5, K6**
5	create the Attractive web pages	**K6**

K1-Remember; **K2**-Understand; **K3** -Apply; **K4** –Analyze; **K5**-Evaluate; **K6**-Create

Units	Contents	No. of Hours
I	**Web Design Principles**: Basic principles involved in developing a web site -Planning process-Five Golden rules of web designing -Designing navigation bar -Page design – Home Page Layout -Design Concept.	6
II	**Basics in Web Design:** Brief History of Internet -What is World Wide Web -Why create a web site- Web Standards	6

III	**Introduction to HTML:** What is HTML – HTML Documents -Basic structure of an HTML document – Creating an HTML document-Mark up Tags -Heading-Paragraphs- Line Breaks -HTML Tags.	**6**
IV	**Elements of HTML:** Introduction to elements of HTML-Working with Text – Working with Lists, Tables and Frames – Working with Hyperlinks, Images and Multimedia -Working with Forms and controls.	**6**
V	**Introduction to Cascading Style Sheets:** Concept of CSS -Creating Style Sheet – CSS Properties -CSS Styling (Background, Text Format, Controlling Fonts) Working with block elements and objects -Working with Lists and Tables -CSS Id and Class-Box Model (Introduction, Border properties, Padding Properties, Margin properties)	**6**

Text Books:

1. Kogent. *HTML 5 in simple steps*. Published by Dreamtech Press, Learning Solutions Inc.
2. Murray, Tom/Lynchburg. 2002. *Creating a Web Page and Web Site.*

Reference Books:

1. Steven M. Schafer. *HTML, XHTML, and CSS Bible* (Fifth Edition) published by Wiley India.
2. Ian Pouncey, Richard York. *Beginning CSS: Cascading Style Sheets for Web Design* published by Wiley India

SPECIFIC VALUE-ADDED COURSE– ENGLISH COURSE FOR SAME LANGUAGE

SUBTITLING

Course Code	Credit	Total Hours	Total Marks
EU231V01	1	30	100

Pre-requisite:

Good command over one or more language, Internet-friendly, basic typing skills, Gadgets: laptop/smart phones, headphones.

Learning Objectives:

1. To develop communicative capability of the students and play an active role in their communities and society
2. To acquire knowledge in the adaptation of subtitling techniques.

Course Outcomes

	On the successful completion of the course, student will be able to**:**	
1	possess the ability to identify errors and inconsistencies in subtitles and apply proofreading techniques to deliver accurate and error-free subtitles	**K2**
2	adapt subtitling techniques to different genres and contexts	**K3**

K1-Remember; **K2**-Understand; **K3** –Apply

Units	Contents	No. of Hours
I	Purpose and importance of SLS – Different contexts where SLS is used (TV Shows, Movies, Educational Videos etc.) – Different opportunities in subtitling – Basic terminologies related to subtitling – Industry trends and technological advancements	6

II	Technical aspects of subtitling – Principles of synchronization between audio and subtitles – Different subtitling formats – Ethical considerations in sensitive contents	6
III	Fundamental English grammar rules for subtitling – Sentence structure and word order – Importance of concise and effective language in subtitling – Editing and formatting subtitles	6
IV	Importance of proofreading and revision in subtitling – Identifying common mistakes and inconsistencies in subtitles – Specific challenges in subtitling	6
V	Practicing sentence segmentation, songs, slang, idioms etc. – Preparing for subtitling assignments	6

Reference Books:

1. Cintas, Jorge Diaz & Aline Remael. (2014). Audiovisual Translation: Subtitling. London. Routledge.
2. Venuti, Lawrence. (2000). The Translation Studies Reader. London. Routledge.
3. Orrego Carmona, David & Yvonne Lee. (2017). Non-professional Subtitling. United Kingdom. Cambridge Scholars Publishing.
4. Perego, Elisa & Silvia Bruti. (2015). Subtitling Today: shapes and their Meanings. United Kingdom. Cambridge Scholars Publishing.

Value Added – BUSINESS COMMUNICATION

Course Code	Total Hours	Marks
VAE205	30	100

Objectives:

1. To make the students conversant with the basic forms, formats and techniques of business writing.

2. To equip the students with the ability to use the communication skills required in meetings, group discussions, interviews and presentations.

Course Outcomes

➢ To develop active listening skills to better, understand colleagues, clients and stakeholders, leading to improved communication and problem solving.

➢ To enhance verbal communication skills, including public speaking, presentation delivery and the ability to convey ideas confidently.

Unit I

a. Analysing audience and locale, organizing contents, preparing and outlining
b. Kinesis, proxemics, para-linguistics, chronemics, understanding nuances of delivery, visual aids

Unit II

a. Face to face interviews,
b. Telephonic interview

Unit III

a. Forms of group discussion, techniques and process
b. Characteristics and skills of group discussions

Unit IV

a. Preparing business letters, memos, emails, reports
b. Preparation of CV/Resume

Unit V

Practice Testing

Reference Books:

1. Mary Ellen Guffey. (2018). *Business Communication: Process and Product*. Cengage Learning.

2. Kathryn Rentz. (2019). *Business Communication: A Problem Solving Approach.* McGraw-Hill Education.

Value Added – TRANSLATION STUDIES

Course Code	Total Hours	Marks
VAE206	30	100

Objectives:

1. To understand the key concepts and theories of translation.
2. To develop skills in translating texts from different genres and languages.
3. To develop critical thinking skills in analysing translations.

Course Outcomes

➢ To exhibit a high level of proficiency in the target language, ensuring accuracy, fluency, and adherence to linguistic conventions.

➢ To understand and respect cultural differences, adapting translations to maintain cultural relevance and authenticity.

Unit I:
a. Introduction to translation and its overview
b. Key concepts and theories of translation studies

Unit II:
a. Different approaches to translation – linguistic, cultural, functional, cognitive
b. Translation problems and strategies

Unit III:
a. Translating different genres of texts
b. Critically analyzing translations

Unit IV:
a. Identifying translation errors and problems
b. Translating to different cultural contexts

Unit V
a. The impact of technology in translation
b. Translation software and tools
c. Machine translation and its limitations

Reference Books:

1. Susan Bassnett. (2013). *Translation Studies*. Routledge.

2. Jeremy Munday. (2016). *Introducing Translation Studies: Theories and Applications*. Routledge.

Value Added – CREATIVE WRITING

Course Code	Total Hours	Marks
VAE207	30	100

Objectives:

1. To develop an understanding of the key elements of creative writing.

2. To develop the ability to write creatively in different genres.

3. To develop critical thinking skills in analysing literary works.

Course Outcomes

➢ To employ poetic devices such as rhyme, meter, symbolism, and figurative language to enhance the importance of poetry.

➢ To understand various narrative structures and experiment with nonlinear storytelling techniques.

Unit I

a. Introduction to creative writing and its overview

b. Introduction to the key elements of creative writing

Unit II

a. Elements of fiction

b. Writing exercises and assignments in fiction

Unit III

a. Elements of poetry

b. Writing exercises and assignments in poetry

Unit IV

a. Elements of creative non-fiction

b. Writing exercises and assignments in creative non-fiction

Unit V

Critically analysing literary works

Reference Books:

1. Stephen King. (2000). *On Writing: A Memoir of the Craft*. Routledge.

2. John Gardner. (1984). *The Art of Fiction: Notes on Craft for Young Writers*. Cengage Learning.

SPECIFIC VALUE-ADDED COURSE– CONTENT CREATION

Course Code	Credit	Total Hours	Total Marks
EP231V01	**1**	**30**	**100**

Pre-requisite:

Good command of the English language, Internet-friendly, basic typing skills, Gadgets: laptop/smartphones, headphones.

Learning Objectives:

1. To develop a content strategy that aligns with the goals and objectives of a specific project or organization.
2. To identify and define the target audience for content creation.

Course Outcomes

	On the successful completion of the course, student will be able to**:**	
1	analyze and interpret content analytics to measure the success and impact of content	**K2**
2	create visually appealing and well-designed content using appropriate design principles and graphic design tools	**K3**

K1-Remember; **K2**-Understand; **K3** –Apply

Units	Contents	No. of Hours
I	Definition and importance of content creation, Overview of different types of content (written, visual, audio), Understanding the target audience and content goals, Introduction to content analytics tools	**6**
II	Formatting and structuring content, Editing and proofreading techniques, Ethical considerations in content creation	**6**

III	Basic design principles and visual aesthetics, Using graphic design tools and software, Optimizing visual content for different platform, Utilizing artificial intelligence and automation tools	6
IV	Strategies for promoting content on various platforms, Email marketing and newsletter creation, Analyzing and optimizing content distribution channels, Plagiarism and copyright infringement	6
V	Content writing practice	6

Reference Books:

1. ANN HANDLEY, 2014. EVERYBODY WRITES: YOUR GO-TO GUIDE TO CREATING RIDICULOUSLY GOOD CONTENT, WILEY PUBLICATIONS, NEW JERSEY, UNITED STATES.

2. JOE PULIZZI, 2015. CONTENT INC.: HOW ENTREPRENEURS USE CONTENT TO BUILD MASSIVE AUDIENCES AND CREATE RADICALLY SUCCESSFUL BUSINESSES, MCGRAW-HILL EDUCATION, USA.

3. ERIN KISSANE, 2011. THE ELEMENTS OF CONTENT STRATEGY, A BOOK APART, NEW YORK, USA.
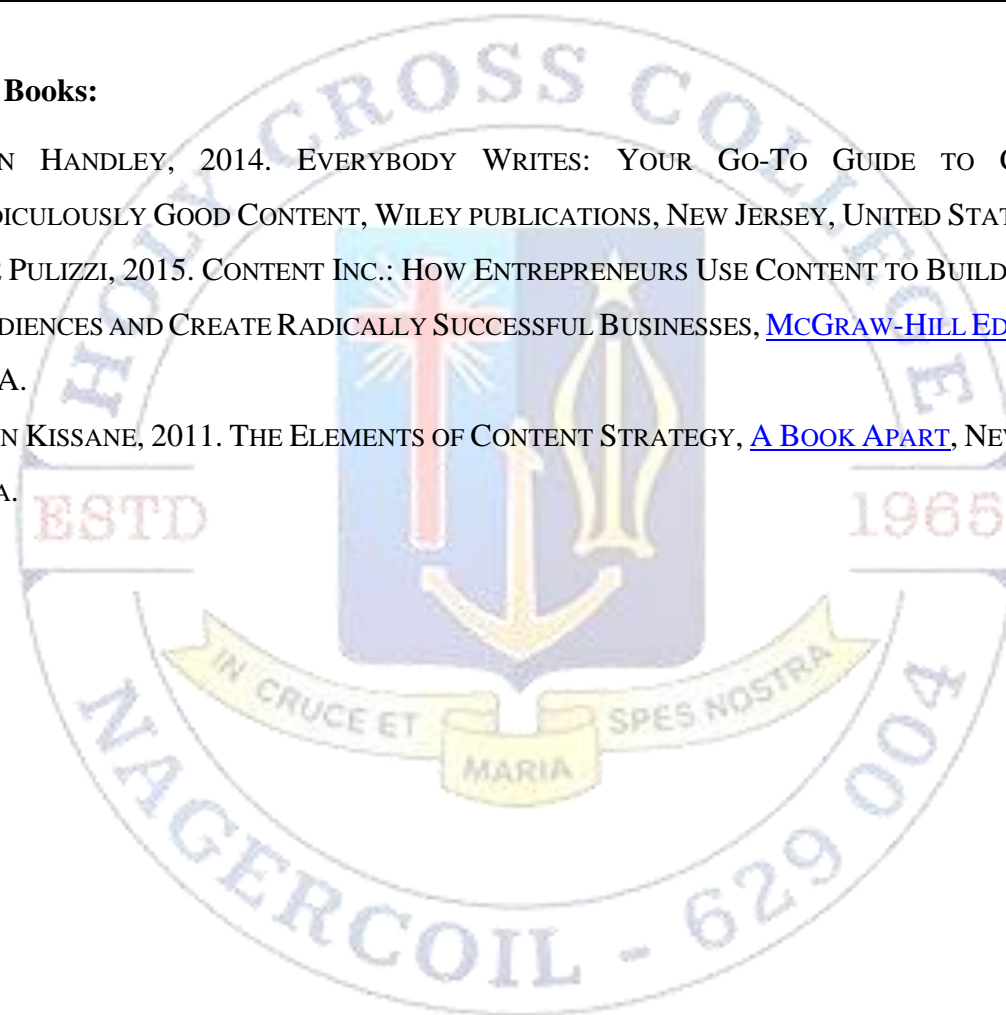
Value Added – PUBLIC RELATIONS

Course Code	Total Hours	Marks
VAE201	30	100

Objectives:

1. To understand the basic premises and fundamental concepts of Public Relations.
2. To offer a wholesome personality development which leads to professional prospects
3. To acquire skills in using communication tools.
4. To understand basic concepts and practices in Marketing.

Course Outcomes

➢ To develop a comprehensive understanding of the history, principles and theories that underpin the field of public relations.

➢ To demonstrate the ability to create strategic communication plans that align with organizational goals and objectives.

➢ To utilize digital and social media platforms for strategic communication, including content creation and community management.

➢ To apply ethical principles in public relations practices, including transparency, honest, and respect for diversity and inclusivity.

Unit I: Introduction to Public Relations – Need for PR

Unit II: Effective Writing & Business Communication

Unit III: Public Speaking & Presentation Skills

Unit IV: E- Communication – writing blogs, websites, brochures, pamphlets

Unit V: Skill set for PR Personnel – Qualities of a PR Person – Ethics in PR

Reference Books:

1. Cutlip, S.M., A.H Center and G.M Broom. *Effective Public Relations.* New Jersey: Pearson Education, 2006.
2. Datta. K.B. *Fundamentals of Public Relations*. 2nd Ed. New Delhi: Akansha, 2007.
3. Lesly, P. *Handbook of Public Relations & Communications*. 3rd Ed. Mumbai: Jaico, 2008.

Value Added – BODY LANGUAGE FOR PROFESSIONAL DEVELOPMENT

Course Code	Total Hours	Marks
VAE2015	30	100

Objectives:

1. To create an enhanced awareness on the importance of body language on the interpersonal communication
2. To facilitate an all-round Professional Development

Course Outcomes

➢ To develop strong body language skills to understand others' perspectives, needs, and emotions, fostering better interpersonal relationships and problem-solving

➢ To recognize and effectively use nonverbal cues such as body language, facial expressions, and gestures to enhance communication and convey messages accurately.

➢ To understand and appreciate cultural differences in communication styles, adapting communication to diverse cultural contexts respectfully and effectively.

➢ To apply conflict resolution strategies and techniques to address interpersonal conflicts and challenges in a constructive and collaborative manner.

Unit I

Different applications of Haptics – Haptics and cultural variations – Haptics and Gender Difference

Unit II

Touches and their meaning – Touch in Public and Touch in office Space – Sense of Touch among Professionals

Unit III

Haptics and its role in handshakes – Hand Moments – Understanding Hand Moments

Unit IV

Mouth and Smiles – Cultural Difference in Smile; Head Nods – Facial Expression

Unit V

Paralanguage – Digital Body Language – Physical Appearance

Reference Books:

1. Prof. Rashmi Gaur, Body Language: Key to Professional Success
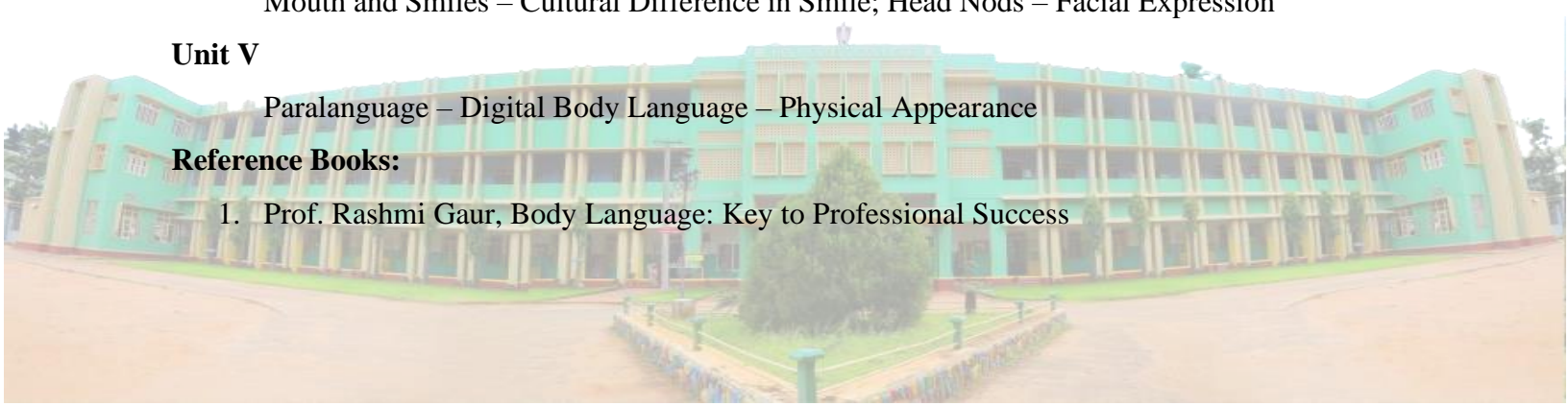
Value Added – ENHANCING SOFT SKILLS AND PERSONALITY DEVELOPMENT

Course Code	Total Hours	Marks
VAE2014	30	100

Objectives:

1. To cause an enhanced awareness on the significance of soft skills in professional and interpersonal communication
2. To facilitate an all-round development of personality

Course Outcomes

➢ To demonstrate a clear understanding of the mind-set and set forward to growing mind set.

➢ To articulate a good personal development and emotional growth.

➢ To understand the importance of time management.

➢ To get a clear view of the procrastination and the importance of overcoming it.

Unit I

Definition and Types of Mind Set – Secrets of Developing Growth Mind Set – Managing Emotions – Assignment

Unit II

Importance of Time – Managing Time Effectively – Understanding Procrastination and Overcoming Procrastination

Unit III

People Skills – Understanding Why People Dislike You – Make Others Like You – Being Attractive

Unit IV

English Skills- Common Errors – Significance of Communication Skills – Humor in Communication and its Function in Work Place

Unit V

Health and Personality – Diet and Personality – Love and Personality

Reference Books:

1. Ravichandran T. Enhancing Soft Skills and Personality.
2. Eric Ries: (2011). *The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses*. Currency.

SPECIFIC VALUE-ADDED COURSE– TRAVEL AGENCY AND TOUR OPERATION

Course Code	Credit	Total Hours	Total Marks
HU231V01	1	30	100

Pre-requisite:

The students should have basic knowledge about Tour operations

Learning Objectives:

1. To know about tour packaging and casting
2. To understand various travel agency and its activities.

Course Outcomes

	On the successful completion of the course, student will be able to:	
1	define travel agency and its kinds.	**K1**
2	recognize the functions of travel agencies.	**K2**
3	illustrate the development tour operators.	**K3**
4	outline the contributions travel agencies	**K1**
5	identify the tour operators and service.	**K3**

K1-Remember; **K2**-Understand; **K3** -Apply

Units	Contents	No. of Hours
I	Travel Trade: Historical perspectives	**6**
II	Travel agency and tour operation: Functions.	**6**
III	Itinerary planning and development: Meaning – types of Itinerary	**6**
IV	Tour packaging and coasting: Classification of tour packages.	**6**
V	Travel Trade Associations: Role and Functions.	**6**

Text Books:

1. Sreedharan, E., 2004, *A Textbook of Historiography*, 500 BC to AD 2000, Orient Longman, New Delhi.
2. Carr, E.H., 2018 What is History? New Delhi: Penguin Books Ltd.,
3. Venkatesan. (2018). A Study of Historiography (History of Historical Knowledge), V.C. Publications
4. Rajayyan, K. (1982) History in Theory and Method: A Study in Historiography, Madurai: Raj Publications.
5. Manikam, On History & Historiography, Padumam Publishers, Madurai.

Reference Books:

1. Charles R. Goeldner, J.R. Brent Ritchie, (2008). Tourism: Principles, Practices, Philosophies John Wiley & Sons.
2. Elizabeth Becker.A, (2013). The Exploding Business of Travel and Tourism, Simon & Schuster.
3. Clare A. Gunn, (1993). Tourism Planning: Basics, Concepts, Cases, Taylor & Francis.
4. Harold L. Vogel, (2021). Travel Industry Economics A Guide for Financial Analysis
5. David L. Edgell, Maria DelMastro Allen, Ginger Smith, Jason Swanson, (2008).
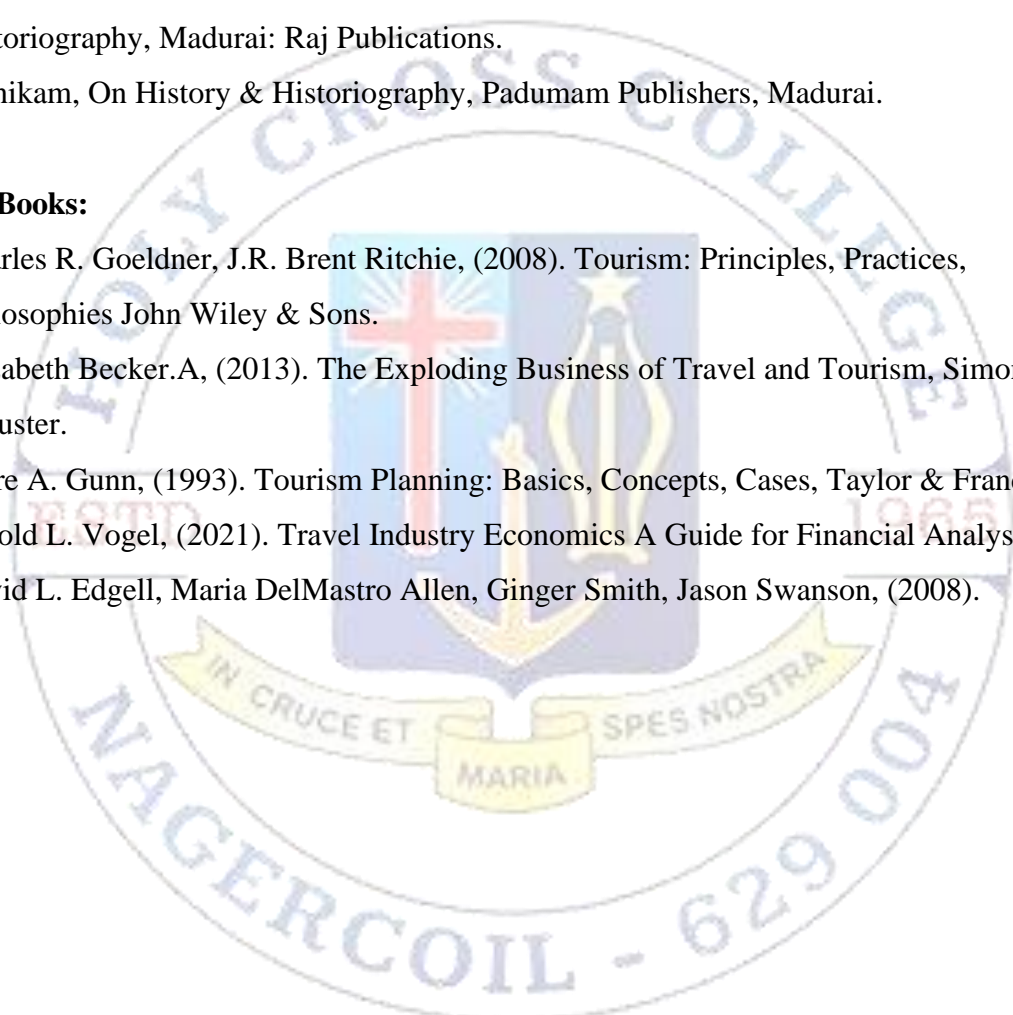
Value Added – PRINCIPLES OF TOURISM

Course Code	Total Hours	Marks
VAH213	30	100

Objectives:

1. To comprehend the fundamental principles of tourism and its significance.
2. To analyse the diverse components and stakeholders in the tourism industry.
3. To evaluate the economic, social, and environmental impacts of tourism.
4. To apply marketing strategies for promoting sustainable tourism.

Course Outcomes

➢ To define key principles and concepts related to tourism.
➢ To analyze the various components and stakeholders in the tourism industry.
➢ To assess the economic, social, and environmental impacts of tourism.
➢ To develop marketing strategies for promoting sustainable tourism practices.
➢ To recognize and appreciate the role of cultural heritage in tourism development.

Unit I

Definition and Scope of Tourism – Historical Evolution of Tourism – Tourism Components and Stakeholders -Motivations for Travel

Unit II

Tourism Planning and Development – Principles of Tourism Planning – Sustainable Tourism Practices -   Destination Management -   Stakeholder Engagement

Unit III

Tourism Marketing and Promotion – Marketing Basics for Tourism – Destination Branding – Digital Marketing in Tourism – Tourism Promotion Strategies

Unit IV

Cultural and Heritage Tourism – Role of Culture in Tourism – Heritage Tourism and Preservation – Cultural Exchange in Tourism – Challenges in Cultural and Heritage Tourism

Unit V

Tourism Management and Policy – Principles of Tourism Management -   Tourism Policies and Regulations-Crisis Management in Tourism – Emerging Trends in the Tourism Sector

Reference Books:

1. Charles R. Goeldner "Tourism: Principles, Practices, Philosophies" Raj patipakam, Madurai,1997.
2. Stephen J. Page "Tourism Management: Principles, Practices, Philosophies" London and Oriental Books Reprint Corporation, New Delhi.
3. David Weaver. A"Sustainable Tourism: Theory and Practice" David Weaver and Laura Lawton.
4. Charles R. Goeldner, J.R. Brent Ritchie, (2008). Tourism: Principles, Practices, Philosophies John Wiley & Sons.
5. Elizabeth Becker.A, (2013). The Exploding Business of Travel and Tourism, Simon

Value Added – BEACH TOURISM

Course Code	Total Hours	Marks
VAH215	30	100

Objectives:

1. To provide basic knowledge of beach tourism
2. To know the basic components, functions and its importance

Course Outcomes

➢ To remember the basic components of beaches.
➢ To understand the types of beaches.
➢ To apply the knowledge on beaches in their needs.
➢ To analyze the advantages and the disadvantages of beaches.
➢ To evaluate the value of beaches in tourism development.

Unit I

Tourism meaning- origin – nature-scope – kinds of tourism – beach tourism -meaning – origin – scope – components of beaches.

Unit II

Types of beaches -beach tourism industries – beach tourism products -promotion of beach tourism – Functions of beaches.

Unit III

Beaches in Kanya Kumari district with special reference to Kanyakumari beach – Thegaipatinam beach – Muttom beach – Shanhuthurai beach-Chothavilai beach- Manakkudi beach

Unit IV

Importance of beach tourism – promotion of beach tourism-advantages -disadvantages

Unit V

Beach tourism and the development of tourism – Contribution-Regional-National-International values

Reference Books:

1. Bhatia.A.K., Tourism Development-Principles and Practices, Sterling Publishers, New Delhi,1982.
2. Balan.J, Fundementals of Tourism, Jayalakshmi Publishers, Madurai,2012.

SPECIFIC VALUE-ADDED COURSE– STUDY OF PALM LEAF MANUSCRIPTS

Course Code	Credit	Total Hours	Total Marks
HP231V01	**1**	**30**	**100**

Pre-requisite:

The students should have basic knowledge about Palm Leaf manuscripts.

Learning Objectives:

1. To appraise the creative skills of the ancient Indians and the knowledge of writing materials.
2. To differentiate the types of Palm Leaf Manuscripts and its deteriorating factors.

Course Outcomes

	On the successful completion of the course, student will be able to**:**	
1	recognize the meaning and origin of Palm leaf manuscripts	K1
2	defend the aesthetic creations of the Ancient Indians.	K5
3	adopt the writing knowledge of the Indians.	K6
4	differentiate the various writing materials of Palm leaf manuscripts	K4
5	distinguish the types and features of the preparation of Palm Leaf Manuscripts	K4

K1 – Remember; **K2** – Understand; **K3** – Apply; **K4** – Analyze; **K5** – Evaluate; **K6**– Create

Units	Contents	No. of Hours
I	Palm Leaf Manuscript: It's Meaning – Origin – Uses	**6**
II	Writing Materials: Stone, Brick, Metal- Bark, Wooden Planks- Bone, Cloth, Paper	**6**
III	Types of Palm Leaf Manuscripts : Shrithala- Palmyra- Lontor	**6**
IV	Preparation of Palm Leaf Manuscripts: Selection-Burnishing-Seasonings- Writing- Blackening- Guard- Binding	**6**
V	Factors of Deterioration: Physical - Biological - Chemical and Human Factors	**6**

Text Books:

1. Amalananda Ghosh (1991), *An Encyclopaedia of Indian Archaeology*, Brill Academic.

2. Saraju Rath (2012), *Aspects of Manuscript Culture in South India*, Brill Academic.

3. Wayne A. Wiegand and Donald Davis (1994), *Encyclopedia of Library History*, Routledge.

4. Emmrich, Christoph (2021), *From Manuscript to Print in South and Southeast Asia*, Oxford Research Encyclopedia of Religion, Oxford University Press.

5. Hartmut Scharfe (2002), *From Temple Schools to Universities, in Handbook of Oriental Studies*, Brill Academic.

Reference Books:

1. Patnaik, Durga Prasad., (1989). *Palm Leaf Etchings of Orissa*, New Delhi, Abhinav Publications.

2. *Encyclopedia of Tamil Literature*, Volume I, Chennai, Indian Institute of Asian Studies, 1990.

3. Sambandan, M.S., (1997). *Achchum Pathippum*, Chennai, Manivasagar Publications.

4. Ove, K.Nordstrand., (1958). "*Some Notes on Procedures used in the Royal Library, Copenhagen, for the Preservation of Palm Leaf Manuscripts*", Studies in Conservation, Vol.3.

5. Agrawal, Om Prakash. (1984). *Conservation of Manuscripts and Paintings of South-East Asia*, London: Butterworths & Co. Ltd.

Value Added – CONCEPTS AND PERCEPTIVE OF NUMISMATICS

Course Code	Total Hours	Marks
VAP213	30	100

Objectives:

1. To appraise the creative skills of the ancient Indians and the knowledge of materials in coins.
2. To apply the ancient metallurgy in aesthetic creations.

Course Outcomes

➢ To recognize ancient Indian engineering and technology.
➢ To defend the aesthetic creations of the Ancient Indians.
➢ To adopt the metallurgical knowledge of the Indians.
➢ To differentiate the various styles of coins.
➢ To distinguish the features of the ancient Indian coins.

Unit I

Numismatics Meaning – Origin and antiquity of coinage in Ancient India – Coins as a source of history – Technique of manufacture and metallurgy

Unit II

Evolution of coin system in India – Different Eras of Coinage in India – Ancient India Coinage of India – Ancient Dynastic Coins –Mahajanapadas – Kushana empire – Satavahanas – Western Kshatrapa – Gupta empire – South Indian Kingdoms.

Unit III

Medieval India Coinage of India – Delhi Sultanate – Khilji dynasty – Tughlaq dynasty – Mughals – Vijayanagar empire.

Unit IV

Pre-Colonial, Princely States and British India Coinage – Maratha Confederacy – Province of Awadh – Mysore – Sikh – Hyderabad

Unit V

Post-Independence Coinage of India – Frozen Series – Anna Series – Nayapaisa Series – Paisa Series – New Denominations – Nritya mudra

Reference Books:

1. Allan, J.1936. *Catalogue of the Coins of Ancient India*. British Museum, London and Oriental Books Reprint Corporation, New Delhi.
2. Altekar, A.S. 1977, *State and Government in Ancient India*, Motilal Banarsidass, Delhi.
3. Mukherjee, B.N. 1988, *The Rise and Fall of the Kushana Empire,* Firma KLM Private Limited, Calcutta.
4. Sircar, D.C. 1968. *Studies in Indian Coins*, Motilal Banarsidass, Delhi.
5. Smith, Vincent, 1906. *Catalogue of the Coins in the Indian Museum, Calcutta, Vol.I*, Indological Book House, Varanasi.
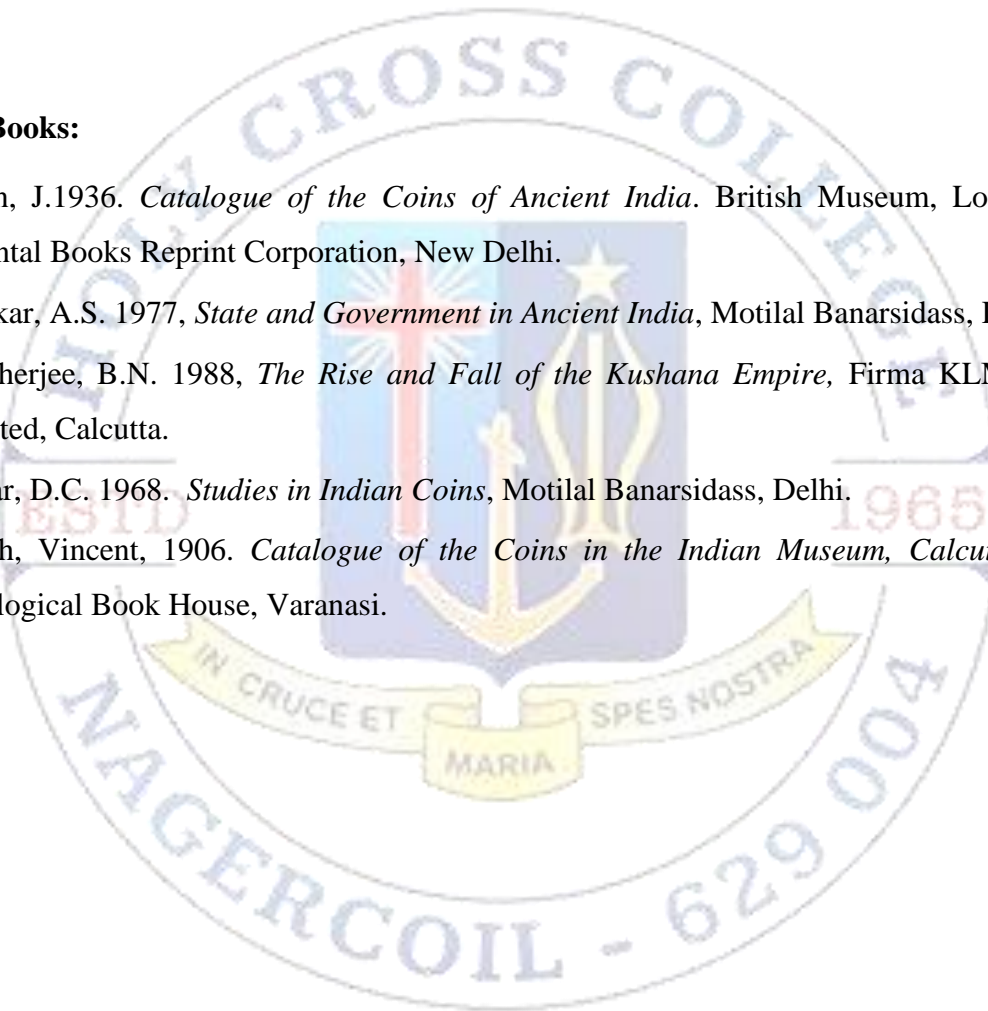
Value Added – MEDICAL ECONOMICS

Course Code	Total Hours	Marks
VAF203	30	100

Objectives:

1. To understand the need for health servicing by Government hospitals.
2. To know about health insurance.
3. To become aware of & utilize the health services offered by the Government.
4. To study about the role of financial institutions in financing health service.

Course Outcomes

➢ To understand the health determinants and policies.

➢ To describe the resource allocation and insurance.

➢ To evaluate the benefits and provisions.

➢ To analyse the sources and needs for health and health insurance.

➢ To assess the health programmes.

Unit – I

     Meaning of Health – Determinants – Dimensions of Health – Indicators – National Health Policy – Planning of health.

Unit – II

     Resource allocation in the private and government hospitals – Health insurance.

Unit – III

     Evaluation of Benefits & Health Services – The provision of Health Services to the Government.
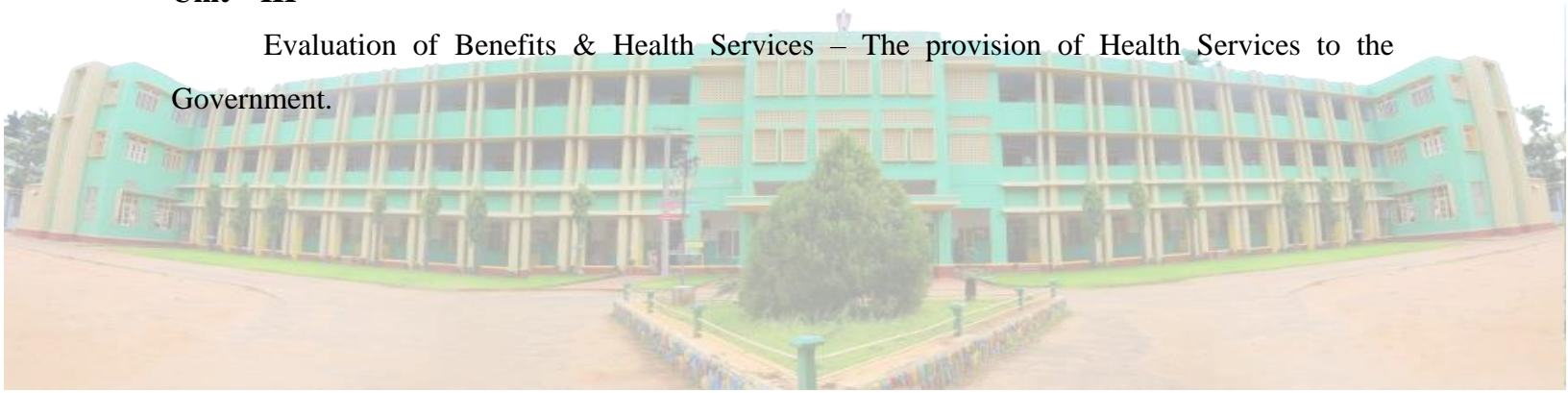
Unit – IV

Analyse of the sources of finance for health – The need for a social health insurance: poor, disabled and the aged.

Unit – V

Health programmes in India: National Programme of Health Care for the Elderly (NPHCE) - District Mental Health Program (NMHP) – National Tobacco Control Program.

Reference Books:

1. Social & Cultural foundation of health services system of India: Banerjee.D
2. National health policy Govt.of India:1983
3. Economic Analysis of health service efficiency: Feldstein
4. The Economics of health: Klarman.H.E
5. Health report: Oxford university Press
6. A premier of health system economics: V. Ramakutty
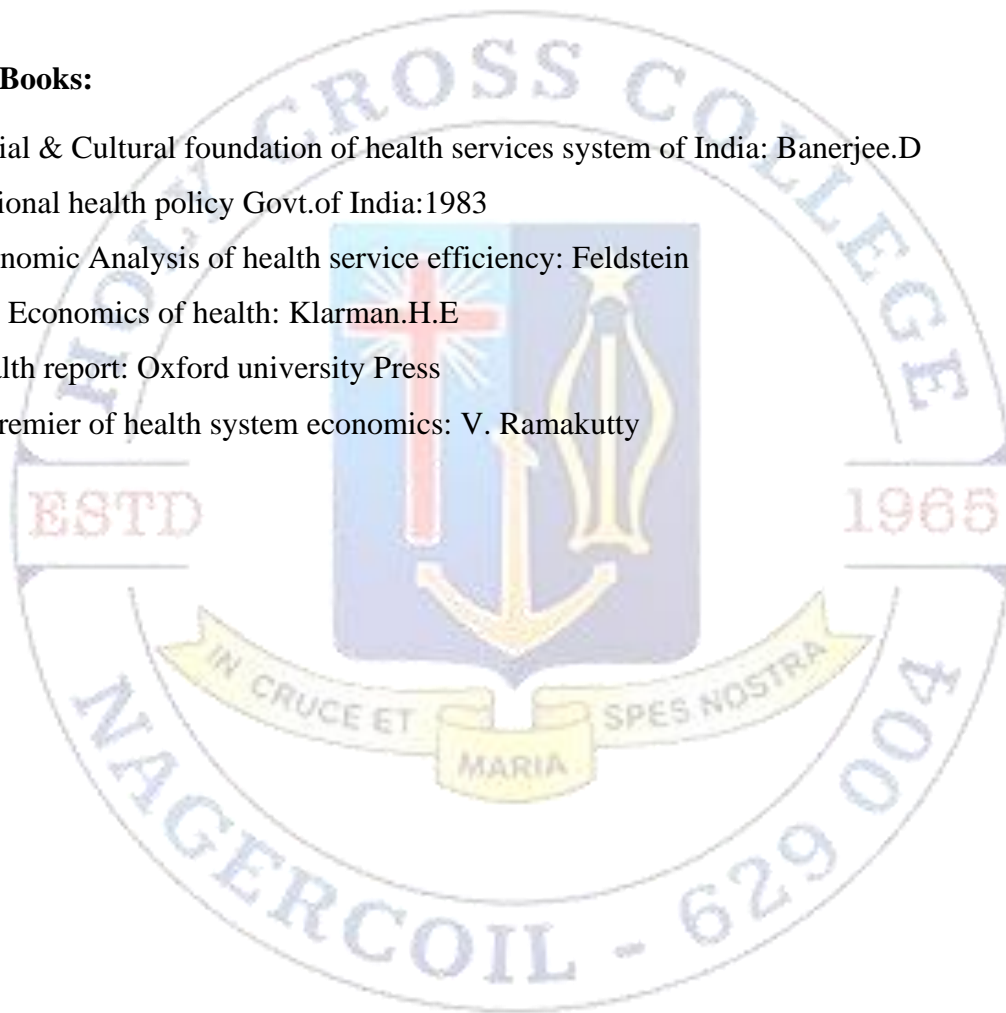
Value Added – HOME MANAGEMENT

Course Code	Total Hours	Marks
VAF204	30	100

Objectives:

1. To help the students to understand the various aspects of home management and to develop additional skills for entrepreneurship.
2. To adopt the techniques and process of home management and prepare tasty home-made products to sell and earn a living.

Course Outcomes

- ➢ To understand the home management process
- ➢ To describe the decision-making experience and knowledge
- ➢ To evaluate the benefits of home articles
- ➢ To identify the techniques of gardening
- ➢ To realize the cooking skill

Unit I Home Management

Introduction – Meaning – Steps in Management Process – Types – Role and Responsibilities of Home Maker.

Unit II Decision Making

Meaning – Process – Types – Individual – Central – Economic decisions – Decision taking due to experience and knowledge

Unit III Home Articles

Household appliances: Mixer – Coffee maker – Grinder – Refrigerator – Pressure Cooker – Gas Stove.

Unit IV Home Gardening

Introduction – Types – Gardening Techniques – Benefits of Gardening.

Unit V Culinary Skills

Tasty Dish from Vegetables – Oil Less Cooking – Healthy Food Preparation – Cooking Without Fire – Fruit Salad – Juices

Reference Books:

1. Clarkson, Potter. (2006). *Home Keeping Handbook: Martha Stewart's The Essential Guide to Caring for Everything in Your Home,*

2. Jenifer, MC Knight. (2010). *Home Economics: Vintage Advice and Practical Science for 21ˢᵗ Century Household,*

3. Paulina Nickell and Jean Muir Dorsey. (1976). *Management in Family living,* John Wiley & Sons Publications.

4. Anson, Elva M. (1985). *The Complete Book of Home Management,* Chigig: Moody Press.

5. Sandhya Rani, Mohanthy, (2016). *Introduction to Home Management*
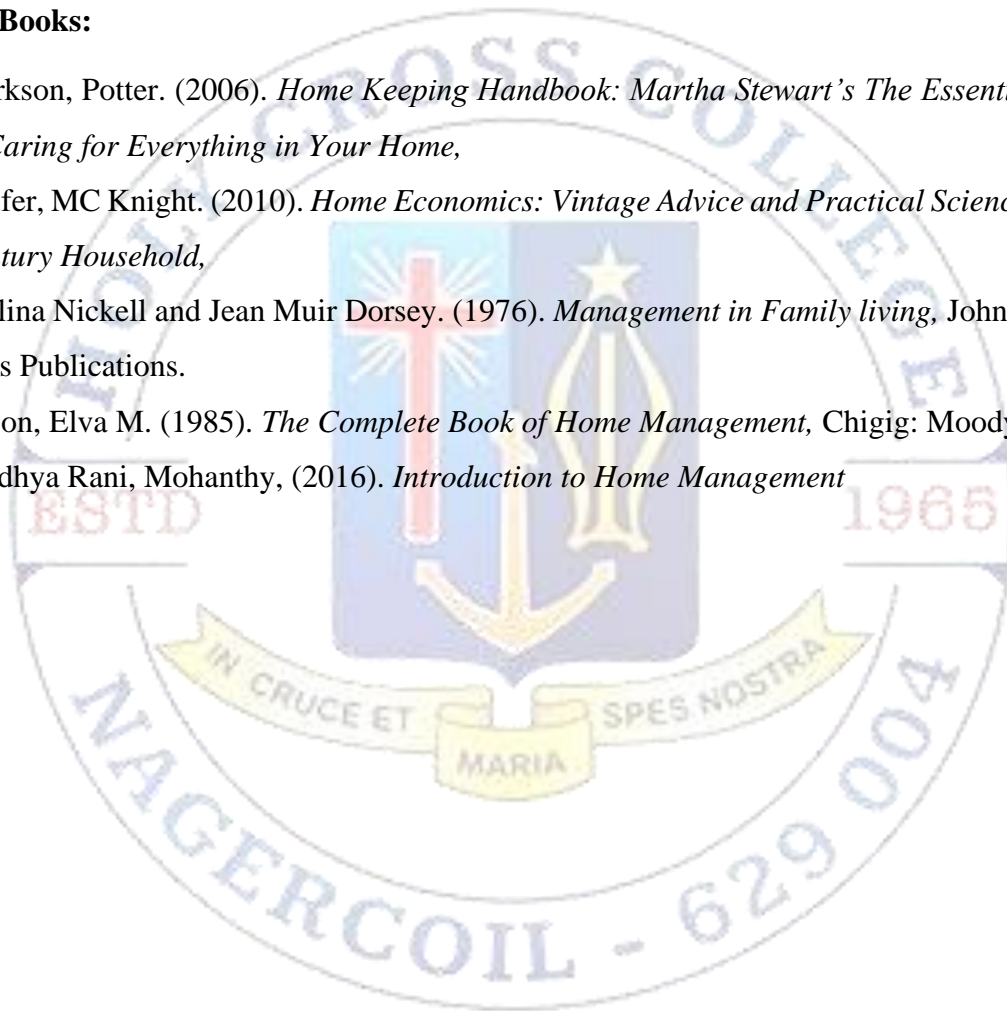
Value Added – INDIAN POLITY

Course Code	Total Hours	Marks
VAF205	30	100

Objectives:
1. To understand the salient feature of Indian Constitution.
2. To know about fundamental rights and duties.
3. To learn about state government and state executive.

Course Outcomes
➢ To understand the salient features of Indian constitution.
➢ To explain fundamental rights and duties.
➢ To describe parliamentary procedure.
➢ To analyze the powers of Governor, Chief Minister and Ministers.
➢ To assess the Panchayat Raj system.

Unit I Constitution of India

Salient features of Indian Constitution – Union and its Territory

Unit II Fundamental Rights and Duties

Right to Equality; Right to Freedom; Right Against Exploitation; Right to Freedom of Religion; Cultural and Educational Rights and Right to constitutional remedies – Fundamental Duties (FD)

Unit III Parliament

Role and functions of the Parliament – Sessions, Motions, Parliamentary procedure – Summoning, Prorogation, Joint sitting - Lok Sabha and Rajya Sabha, - Bill and law making procedure

Unit IV State Government and State Executive

Governor- appointment, removal and special powers – Executive, Legislative, Financial, Judicial powers and discretionary of governor – Chief minister and council of ministers – Power of chief minister

Unit V Panchayat raj and municipalities

Elections, auditing, powers and authority of panchayats – 3 tier structure

Reference Books:

1. Indian Polity for Civil Services Examinations – M. Laxmikanth
2. Objective Indian Polity: General Studies – Paper I by M. Laxmikanth
3. Constitution of India (hard copy / soft copy.
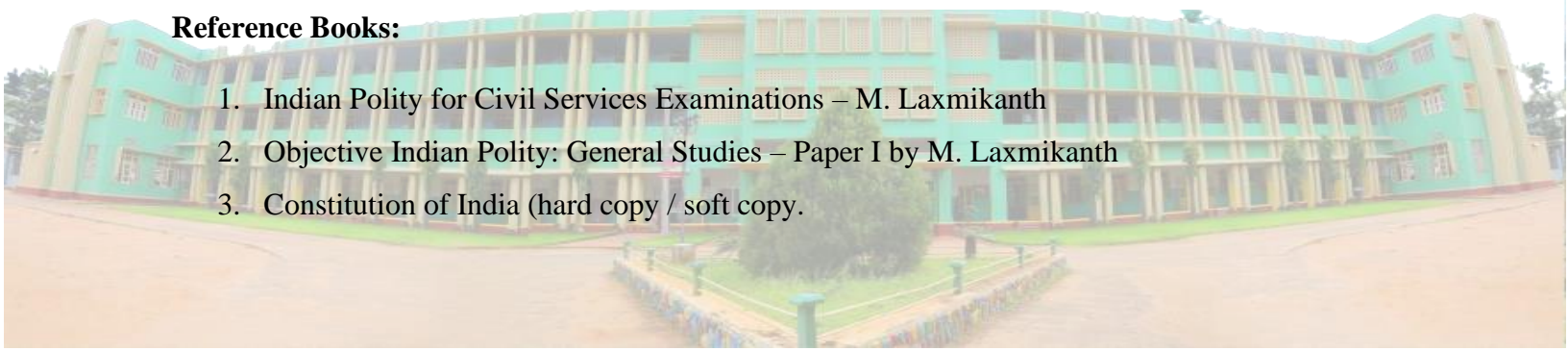
Value Added – PUBLIC ADMINISTRATION

Course Code	Total Hours	Marks
VAF206	30	100

Objectives:

1. To understand the forms and regulation of Public Administration.
2. To know about the commission and corporations.

Course Outcomes

➢ To understand significance and evaluation of Public Administration
➢ To describe the ministries and Department
➢ To evaluate the forms of public sector
➢ To analyse the state administration, legislative and financial relation
➢ To assess the national human rights commissions

Unit I Administration Theory

Meaning, scope and significance of Public Administration, Evolution of the discipline and its present status.

Unit II Organizations of Public Administration

Structure and forms: Ministries and Departments, Corporations, Companies; Boards and Commissions

Unit III Public Sector Undertakings

Public sector in modern India; Forms of Public Sector Undertakings; Problems of autonomy

Unit IV State Government and Administration

Union-State administrative, legislative and financial relations; Role of the Finance Commission;

Unit V Significant issues in Indian Administration

Values in public service; Regulatory Commissions; National Human Rights Commission; Problems of administration in coalition regimes

Reference Books:

1. Basu, D D (2013) Introduction to the Constitution of India (21st Edition). Lexus Nexus: New Delhi

2. A.S. Narang, Indian Government and Politics, Geetanjali Publishing House, New Delhi, (Latest edition)

3. Bidyut Chakrabarty & Rajendra Kumar Pandey, Indian Government and Politics, SAGE, New Delhi, 2014.

4. Maheshwari, S.R., Indian Administration, New Delhi, Orient Longman, 2000.

5. Bhambri, C.P., Indian Politics 2001-2004, Shipra Publishers ,2008.
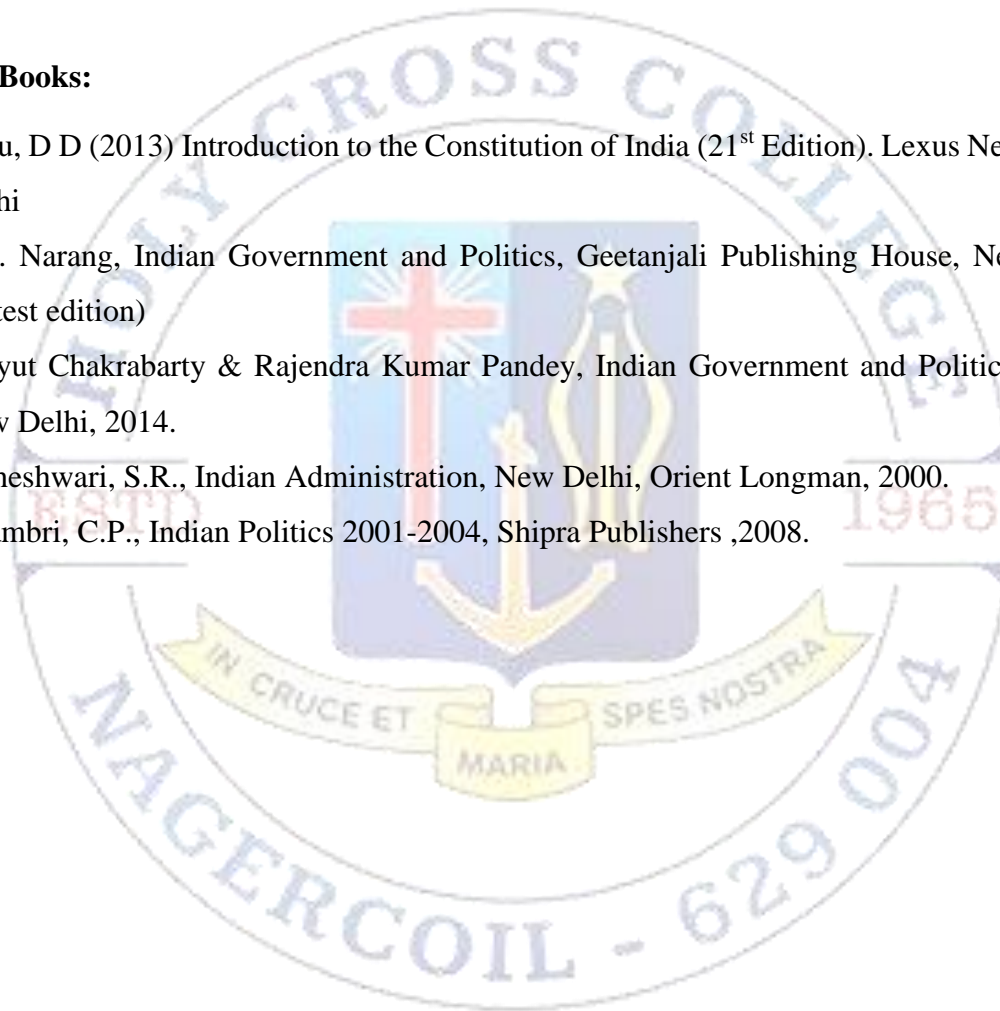
Value Added – **SAMPLING TECHNIQUES**

Course Code	Total Hours	Marks
VAA2012	30	100

Objectives:

1. To understand the basic concept of sampling.
2. To describe various types of sampling design.

Course Outcomes

- ➢ To understand the basic concept of sample and sample design.
- ➢ To distinguish between Probability and Non-probability sampling.
- ➢ To identify the different types of random sampling designs.
- ➢ To describe the methods non-random sampling designs.
- ➢ To understand significance of sample selection in research.

Unit I

Introduction – Merits of Sampling – Limitations of Sampling- Laws of Sampling or Principles of Sampling – Essentials of Sampling – Sample Vs. Census

Unit II

Methods of Sampling: Probability sampling – Non probability sampling -Types of Probability and Non probability Sampling

Unit III

Random Sampling – Simple Random Sampling – Stratified Random Sampling-Merits and Limitations of Stratified Random Sampling – Systematic Random Sampling-Merits and Limitations of Systematic Random Sampling – Multi- stage or Cluster Sampling – Merits and Limitations of Multistage Sampling

Unit IV

Non- Random Sampling – Judgement Sampling- Merits and Limitations of Judgement Sampling – Convenience Sampling – Merits and Limitations of Convenience Sampling - Quota Sampling- Merits and Limitations of Quota Sampling

Unit V

Determination of Size of sample – Factors determining the Size of Sample-Sampling and Non-Sampling Errors

Text Book:

1. Ravilochanan. P (2019), Research Methodology (2nd edition). Margam Publications, Chennai.

Value Added – PRINCIPLES OF INSURANCE

Course Code	Total Hours	Marks
VAA2013	30	100

Objectives:

1. To give an awareness on Insurance and its components.
2. To get insight on the need for insurance.

Course Outcomes

➢ To describe the concepts and types of insurance
➢ To identify the General Principles or Essentials of Insurance Contract
➢ To determine terms used in Insurance
➢ To examine the Profile of Life Insurance Companies in India
➢ To explain the Profile of General Insurance Companies in India

Unit I

Introduction-Meaning of Insurance- Definition of Insurance – Nature of Insurance – Functions of Insurance – Classification of Insurance – Types of Insurance – Life Insurance – General Insurance- Fire of Insurance – Marine Insurance – Miscellaneous Insurance – History of Insurance.

Unit II

Principles of Insurance – General Principles or Essentials of Insurance Contract – Specific Principles – Essential of Insurable Interest.

Unit III

Terms used in Insurance – Difference Between Double Insurance and Reinsurance – Insurance Organisations in India – Deposit Insurance Scheme- Institutional Coverage – Extent of Insurance Cover – Insurance Premium – Payment of Insurance Claims – Recent Developments in the Insurance Industry in India.
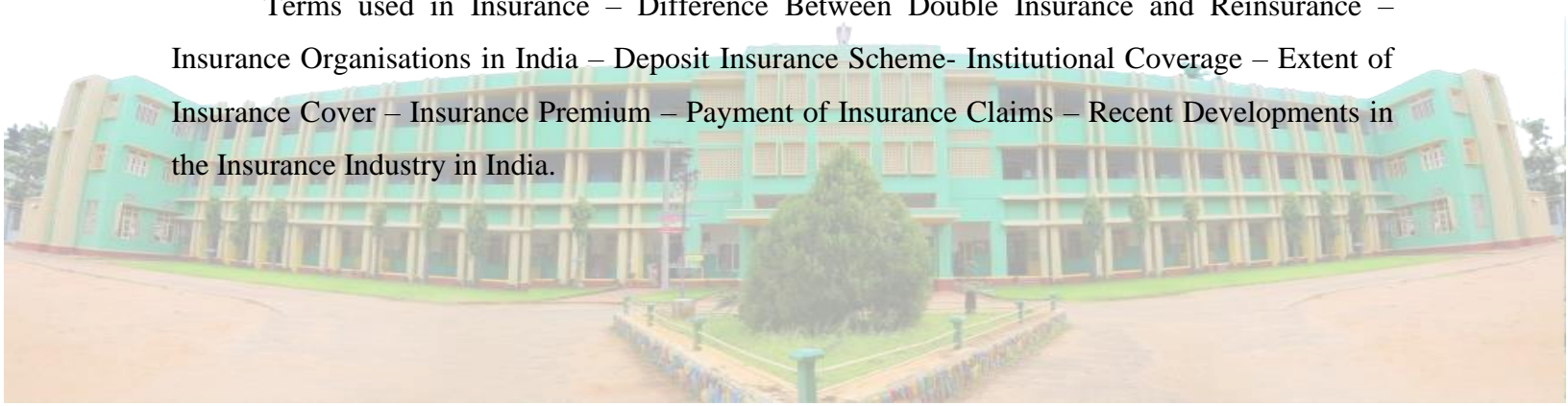
Unit IV

Indian Life Insurance Industry – Profile of Life Insurance Companies in India – Objectives of LIC – Function of LIC – Subsidiaries – Current Status.

Unit V

Profile Of General Insurance Companies In India – General Insurance Corporation (GIC) Of India – Current Status – National Insurance Company (NIC) Ltd. – Products Offered – United India Insurance (UII) Company Ltd. – Products Offered – The Oriental Insurance Company (OIC) Ltd. – Products Offered – The New India Assurance (NIA) Company Ltd. – Products Offered – Bajaj Allianz General Insurance Company Ltd. – Products Offered – ICICI Lombard General Insurance Company Ltd. – Products Offered – IFFCO – TOKIO General Insurance (ITGI) Co. Ltd. – Product Offered Royal Sundaram General Insurance Company Ltd. – Products Offered – Tata AIG General Insurance Company Ltd. – Cholamandalam General Insurance Company Ltd. – Products Offered – Reliance General Insurance Company Ltd. – HDFC Chub General Insurance Company Ltd. – Products Offered – Export Credit Guarantee Corporation (ECGC) Of India Ltd. – Products Offered – Star Health & Allied Insurance Company Ltd. – Products Offered. (Concept only).

Text Book:

1. K.Vairamani,(2006) Insurance and Risk Management.

SPECIFIC VALUE-ADDED COURSE– INTRODUCTION TO MS OFFICE

Course Code	Credit	Total Hours	Total Marks
AU231V01	1	30	100

Learning Objectives:

1. To enable the students to study MS Office and to enrich the practical knowledge in MS Office.
2. To integrate knowledge with practice the various benefits of using word processing software.

Course Outcomes

On the successful completion of the course, student will be able to**:**		
1	perform documentation and presenting skills	K1
2	understand the process of inserting graphics, pictures, and table of contents	K2
3	perform basic editing functions, formatting text, copy and moving objects and text.	K3
4	use design layouts and templates for presentations	K3
5	proficient in using Windows, Word Processing Applications, Spreadsheet Applications, Database Applications and Presentation Graphics Applications.	K3

K1-Remember; **K2**-Understand; **K3** –Apply

Units	Contents	No. of Hours
I	**MS Windows, Computer Basics –** Computer Basic, Creating Folder, Paint, Directories, input units, Output unit, Central Processing Units, what is hard ware, what is software, Windows short cut keys	**6**
II	**Creating a Document –** Creating a blank document, creating a document from scratch using, a template, opening a PDF for editing in Word, Inserting text from an external file.	**6**
III	**Format Text, Paragraphs, and Sections –** Insert Text and Paragraphs, Find and replace text, Cut, copy and paste text, replace text by using Auto Correct, Insert special characters	**6**
IV	**Create Tables and Lists –** Convert text to tables, convert tables to text, create a table by specifying rows and columns, Apply table styles.	**6**
V	**Insert and Format Graphic Element –** Insert shapes, insert pictures, insert a screen shot or screen clipping, Insert text boxes.	**6**

Text Book:
1. Kevin Pitch, Microsoft Office 365 for Beginners, 2022

SPECIFIC VALUE-ADDED COURSE– INTERNATIONAL TRADE

Course Code	Credit	Total Hours	Total Marks
AP231V01	1	30	100

Learning Objectives:

1. To enable the students, gain knowledge about the different aspects of international trade.
2. To enhance the students, gain awareness towards global environment.

Course Outcomes

On the successful completion of the course, student will be able to**:**		
1	understand the evolution and growth of International Trade	**K1**
2	explain the foreign exchange market	**K2**
3	assess the components of balance of payments	**K3**
4	provide knowledge on IMF and special Drawings Rights	**K3**
5	evaluate the functions of multinationalcorporation	**K4**

K1-Remember; **K2**-Understand; **K3** -Apply; **K4** –Analyze

Units	Contents	No. of Hours
I	**Introduction to International Trade –** Definitions – Evolution and Growth of International Trade – Differences between Domestic and International Trade – Features – Importance– Drivers of International Trade	6
II	**Foreign Exchange Market** – Functions – Transactions – Nature – Factors Influencing Exchange Rates – Exchange RateSystem: Fixed Exchange Rate – Flexible Exchange Rate	6

III	**Balance of Payment** – Balance of payments – Nature – Components-Importance – BOP Disequilibrium – Types – Causes	6
IV	**International Monetary Fund** – Origin – Membership of IMF – Special Drawings Rights – Objectives of IMF – Functions of IMF	6
V	**Multinational Corporation** – Features – Risks and Challenges faced by MNC's – Criticisms – Advantages	6

Reference Books:

1. Balaji. (2018). *International Trade*. (1st ed). Chennai: Margham Publications.

2. Francis Cherunilam. (2004). *International Trade and Export Management*. (1st ed). New Delhi: HimalayaPublishing House.

3. Sumati Varma. (2011). *International Business*. (1st ed). New Delhi: Ane Books Pvt. Ltd.

4. Aswathappa.K. (2014). *International Business*. (1st ed). New Delhi: McGraw Hill Education (India) Pvt. Ltd.

5. Justin Paul. (2014). *International Business*. (6th ed). New Delhi: PHI Pvt. Learning Ltd.
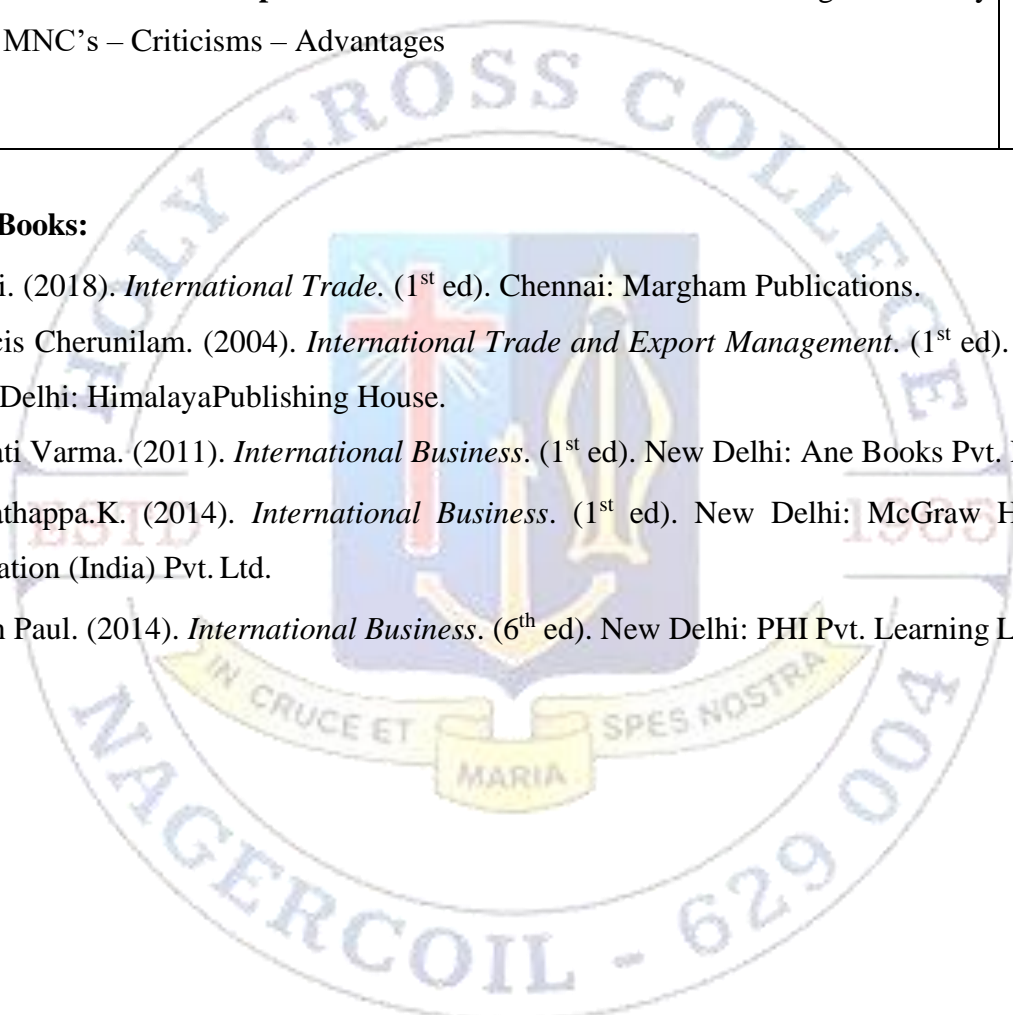
SPECIFIC VALUE-ADDED COURSE– MS EXCEL

Course Code	Credit	Total Hours	Total Marks
AU231V02	**1**	**30**	**100**

Learning Objectives:

1. To make the students learn the basics of spreadsheet construction and formatting

2. To enable the students to create, save, open and print spreadsheets

Course Outcomes

On the successful completion of the course, student will be able to**:**		
1	demonstrate the basic mechanics and navigation of an Excel spreadsheet	K1
2	understand the need and use of using Excel templates.	K2
3	secure information in an Excel workbook	K3
4	gain working knowledge of organizing and displaying large amounts and complex data.	K3
5	use clip art to enhance ideas and information in Excel worksheets	K3

K1-Remember; **K2**-Understand; **K3** -Apply

Units	Contents	No. of Hours
I	**The Excel environment –** Navigating a worksheet, Spreadsheet terminology, Getting help.	**6**
II	**Entering and editing data –** Entering and editing text and values, Entering, and editing formulas, Saving, and updatingworkbooks.	**6**
III	**Modifying a worksheet –** Moving and copying data, Moving and copying formulas, Inserting and deletingranges, rows, and columns, Cell comments	**6**
IV	**Using functions –** Entering functions**,** AutoSum**,** Other common functions.	**6**
V	Formatting – Text formatting, Row and column, formatting, Number formatting, Conditionalformatting, Additional formatting options.	**6**

Text Book:

1. Kevin Pitch, Microsoft Office 365 for Beginners, 2022

Value Added – SOCIAL BEHAVIOUR

Course Code	Total Hours	Marks
VAA2023	30	100

Objectives:

1. To make students Know different components of social behavior.
2. To understand the art of communication and personal style influence.

Course Outcomes

➢ To analyse formation of images.

➢ To examine etiquette norms for setting tables during business meetings.

➢ To develop grooming techniques.

➢ To create appropriate dressing techniques for appealing visual presentation.

➢ To formulate methods of using etiquette in social and business gatherings and event.

Unit I Image Analysis

Image – Formation of Image

Unit II Dining Practices

Table Manners, Table setting, Entertaining – Business Lunch, Behaviour of a Host/Guest

Unit III Tips on Good Grooming

Image Spoilers, Magic of Colours

Unit IV Dressing with Impact

Styles and colour choice, Corporate Wardrobe, Clothes coordination, Dressing for presentation, Accessories

Unit V Business/Social Behaviour

Office Manners, Comfort Zone, Proper introductions, Handshakes, Business Card, Body language, Meeting Manners, Speaking with confidence

Text Book:

1. Social Behavior: Its Development in Subhuman Primates by Stuart A. Altmann, published by University of Chicago Press (1967).

Reference Books:

1. The Social Animal by Elliot Aronson, published by Worth Publishers (2011)
2. Social Behavior: Genes, Ecology, and Evolution by T.H. Clutton-Brock, published by Cambridge University Press (1989)
3. Social: Why Our Brains Are Wired to Connect by Matthew D. Lieberman, published by Crown Publishers (2013)
4. The Social Construction of Reality: A Treatise in the Sociology of Knowledge by Peter L. Berger and Thomas Luckmann, published by Anchor Books (1966)
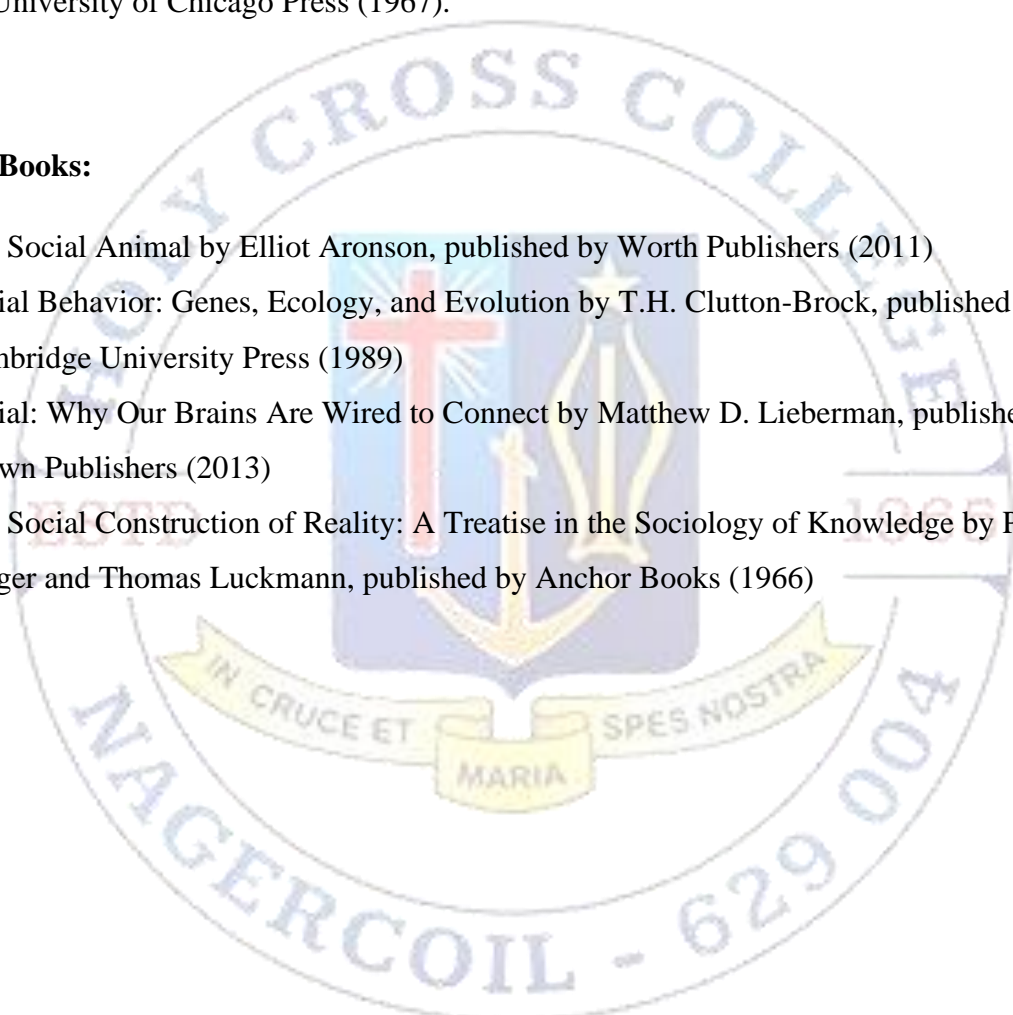
Value Added – BASIC STATISTICAL TOOLS

Course Code	Total Hours	Marks
VAA2024	30	100

Objectives:

1. To help students to apply statistical tools in research
2. To enable students to describe data with descriptive statistics and to perform statistical analysis

Course Outcomes

1. To gain knowledge on statistical tools and analysed data with descriptive statistics
2. To perform statistical analysis in their research work

Unit I Introduction to SPSS

SPSS- Types of Data and Measurement Scale- Measurement Scales – Hypothesis – Determination of Sample Size – SPSS User Manual

Unit II Reliability Test and Descriptive Statistics

Reliability Analysis - Measures of Reliability – Descriptive Statistics – Interpretation

Unit III T test

One sample – Independent – Paired – T – test for difference of two means dependent samples

Unit IV Chi Square Test

Chi square Test – One tailed -   Two tailed – Chi square test for independence of attributes

Unit V Correlation and Regression Analysis

Correlation – Types – Direction of the correlation – Methods of Correlation

Text Books

1. IBM SPSS® AMOS ™ 19 User's Guide – James L. Arubuckle

Reference Books:

1. IBM SPSS Statistics Base 19 User Guide
2. Dharmaraja Selvamuthu, Dipayan Das (2018) Introduction to Statistical methods, Design of Experiments and Statistical Quality Control, ISBN 978-981-13-1736-1 (e book)
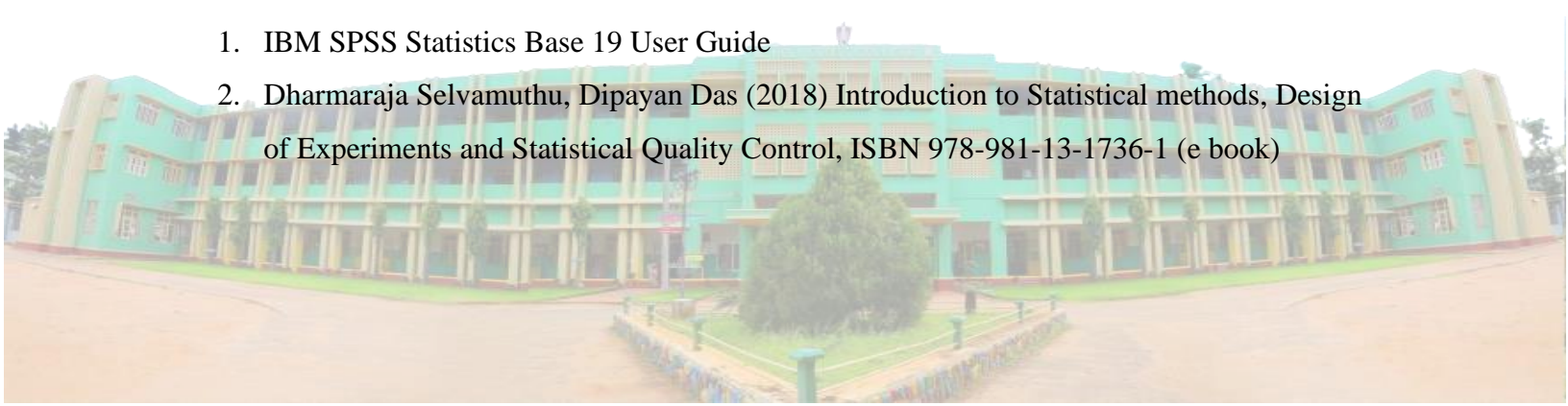
SPECIFIC VALUE-ADDED COURSE–COMMUNICATION FOR SOCIAL WORK

Course Code	Credit	Total Hours	Total Marks
WP231V01	1	30	100

Pre-requisite:

Basic Understanding of Communication

Learning Objectives:

1. To understand the nuances of communicating with the clientele systems
2. To learn the skills and strategies of group discussion
3. To enhance the skills required for attending interviews
4. To develop a perspective of different types of professional writing
5. To acquire the required non-verbal communication skills

Course Outcomes

On the successful completion of the course, student will be able to**:**		
1	identify the significance of public speaking	K2
2	demonstrate the skills of group discussion	K3
3	apply the knowledge and skills of facing interviews	K3
4	analyse and develop writing skills required for social work practice	K4
5	evaluate the impact of body language on communication	K5
6	develop the communication skills as a whole	K6

K1 – Remember; **K2** – Understand; **K3** – Apply; **K4** – Analyze; **K5** – Evaluate; **K6**– Create

Units	Contents	No. of Hours
I	**Public Speaking:** Power of public speaking; Developing Confidence; Planning; Preparation; Successful and effective delivery of Speech	6
II	**Group Discussion:** What is a group discussion; Why are group discussions held? Preparation for group discussions; Skills for effective preparation; Traits tested in a group discussion; Initiating the group discussion; Non-verbal communication in group discussion; Types of group discussions	6
III	**Interviews:** Interviews in the 21st century; Developing an Interview strategy; Taking care of details; Practising for interviews; During the interview; Stress Interviews; Traditional interviews	6
IV	**Writing skills:** Basics of writing; Writing paragraphs; Writing letter and e-mails; Writing research articles; Report writing; Writing a CV	6
V	**Non-verbal Communication:** What is Body Language? Types of Non-verbal Communication – Facial expression, Body movement & posture, Gestures, Eye contact, Touch, Space, Voice; Evaluating non-verbal signals	6

Text Books:

1. Dasarda, Sheetal. (2015). Master the Group Discussion & Personal Interview. Chennai:Notion Press.

2. Lees, John. (2017). Knockout Interview. UK: OPU

3. Lundlow, Ron and Fergus Panton. 1995. Effective communication. New Delhi: Prentice-Hall of India Private Ltd.

4. Mathur, Dinesh. (2018). Mastering Interviews and Group discussion. Chennai: CBS Publishers

5. William, Phil. (2018). Advanced Writing skills for students of English. Rumain publishing

Value Added – PSYCHOTHERAPY FOR MINOR MENTAL DISORDERS

Course Code	Total Hours	Marks
VAW203	30	100

Objectives:

1. To impart knowledge of Psychiatric Illness
2. To train the students to practice Psychiatric Social Work Effectively

Course Outcomes

➢ To explain the classification of mental disorders

➢ To explain the general classification of mental disorder.

➢ To identify the concepts related to mental health and mental illness and theoretical underpinnings related to it.

➢ To develop the psycho- social interventions in preventive, promotive and curative services that work towards enhancing the dignity of persons living with mental illness.

➢ To cite the examples of other mental disorder.

Unit I

Classification in ICD10 brings under the rubric neurotic; stress related disorders, minor mental illnesses such as generalised Anxiety Disorder, Panic Disorder, and Obsessive Compulsive Disorder.

Unit II

Dissociative disorder and mixed Anxiety and Depressive Disorder.DSM III R classification mentions conversion Disorder as a separate category.

Unit III

Proper psychiatric medication is reserved for the treatment of major mental illness such as affective disorders.

Unit IV

Schizophrenia and organic psychiatric disorders. The management of minor illnesses involve psychotherapy.

Unit V

Patents respond will to supportive, educative or reconstructive psychotherapy when used appropriately. The choice of psychotherapy for the minor mental illnesses are discussed during the sessions.

References Books:

1. Francis J. Turner (1996) Social Work Treatment-Interlocking Theoretical approaches, (4th Edition), New York.The FREE press, A division of Simon & Schuster Inc.
2. Seker.K, Parthasarathy.R, Muralidhar.D, Chandrasekar Rao.M, (2007) Handbook of cvipsychiatric social work, (2nd Edition), Bangalore, National Institute of Mental Health and Neuro Science.
3. Dr. Rama Krishanan. K, Dr. Arun Kumar. N, (2010) Psychiatry Made Easy, (1st Edition), Trichy, ATHMA Institute of Mental Health and Social Science.
4. Jennifer, John Wiley & Sons, (1981) An outline of modern psychiatry, (5th Edition) Hoboken.
5. Venkatesan.S, (2004) Children with development disabilities, (1st Edition) Amerind pub, sage publication.

SPECIFIC VALUE-ADDED COURSE– JEWELLERY DESIGN

Course Code	Credit	Total Hours	Total Marks
DU231V01	**1**	**30**	**100**

Pre-requisite:

Basic knowledge of rings, studs, Necklace, & Pendants

Learning Objectives:

1. To impart knowledge on alternative materials and the techniques that can be usedto create Jewellery.
2. To educate the students on the important categories and sub-types in Jewellery.
3. To have an in-depth knowled
4. ge of the various product types and their special features.

Course Outcomes

On the successful completion of the course, student will be able to**:**	
1	explain the classification of rings	**K1 & K2**
2	study the classification of studs	**K2**
3	study in detail about pendants and necklace	**K3**
4	study in detail about bangles and classification	**K2**
5	study in detail about Brooches	**K2**

K1-Remember; **K2**-Understand; **K3** –Apply

Units	Contents	No. of Hours
I	Rings Introduction and historical perspective on rings, Classification of rings- Bridal Rings wedding bands, engagement rings, bridal set rings, Solitaire rings, eternity rings, promise rings, Cluster rings, Right Hand rings, Cocktail rings, other fancy rings'	**6**

II	Earrings Classification of Studs & amp; earrings, On the ear -Studs and buttons, Hanging style – Drops, danglers Hoop style- Huggies, Bali'setc., styles – Chandeliers, Shoulder dusters,	**6**
III	Pendants and Necklaces Introduction and historical perspective on Pendants, Classification of Pendants- Lockets, medallions, tassels, sliders etc,,	**6**
IV	Bangles and Bracelets Introduction and historical perspective on Bangles and Bracelets, Classification- Bangles,	**6**
V	Brooches, tiepins and other product categories Introduction and historical perspective, Brooches, cufflinks, tiepins,	**6**

Text Books:

1. Techniques of Jewellery Illustration and Colour Rendering by Adolfo Mattiello
2. Jewellery Concept & Technology by Oppi Untracht
3. Gem Stone of World

Reference Books:

1. Jewellery Making Techniques
2. Stone identification and classification
3. Dance of peacock by Usha balkrishnan
4. Art deco jewellery design book
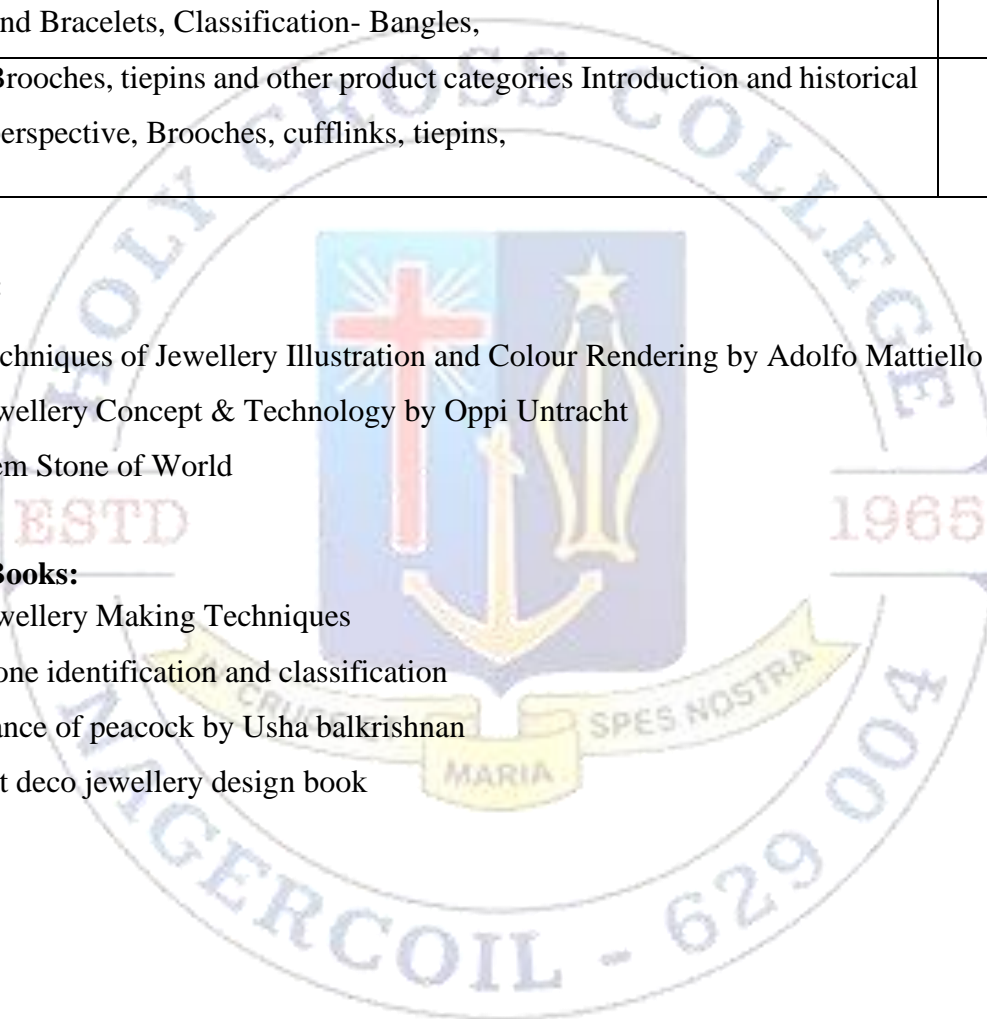
GENERIC VALUE ADDED – SYLLABUS

GENERIC VALUE-ADDED COURSE: MOBILE APPLICATION DEVELOPMENT

Course Code	Credit	Total Hours	Total Marks
PG232V01/GV2310	1	100	100

Learning Objectives:

1. To teach students how to optimize mobile app performance, including efficient resource utilization, responsive user interfaces, and reduced battery consumption, to create a seamless user experience.
2. To enable students to adapt to evolving mobile technologies and trends, empowering them to stay current and innovative in a rapidly changing mobile app development landscape.

Course Outcomes

On the successful completion of the course, student will be able to:	
1	acquire fundamental mobile app development concepts, such as software development methodologies and mobile platform-specific guidelines, to establish a foundational knowledge of the field.	K1,K2
2	grasp the importance of responsive design, usability testing, and accessibility in mobile app development, enabling them to create apps that are user-friendly, inclusive, and adaptive to various devices and screen sizes.	K3
3	analyzing existing mobile applications critically, learners identify usability issues and propose improvements to enhance user experiences and app functionality.	K4,K5

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** – Analyze , **K5-**Evaluate

Unit 1: Introduction to Mobile Application Development
• Understanding the mobile app development ecosystem
• Overview of mobile platforms (iOS, Android, cross platform)
• Introduction to development tools (IDEs, emulators)
• Exploring mobile app architecture
• Setting up a development environment

Unit 2: Mobile App UI/UX Design
• Principles of mobile app design
• User interface (UI) components and layout
• Creating responsive and user friendly designs
• Wire framing and prototyping tools
• User experience (UX) best practices

Unit 3: Programming for Mobile Apps
• Programming languages for mobile app development (Java, Kotlin, Swift, Dart)
• Fundamentals of mobile app coding

• Handling user input and events

• Debugging and testing mobile apps

• Version control and collaboration tools
Unit 4: Mobile App Development for Android
• Introduction to Android development

• Building user interfaces for Android

• Data storage and retrieval (SQLite, Firebase)

• Working with device features (camera, GPS)

• Publishing apps on the Google Play Store
Unit 5: Mobile App Development for iOS
• Introduction to iOS development

• Building user interfaces for iOS

• Data storage and retrieval (Core Data, Firebase)

• Working with device features (camera, GPS)

• Publishing apps on the Apple App Store

Text Books:
1. "Android Programming: The Big Nerd Ranch Guide" by Bill Phillips and Chris Stewart
2. "Head First Android Development" by Dawn Griffiths and David Griffiths
3. "Android Studio 4.0 Development Essentials - Kotlin Edition" by Neil Smyth
4. "Professional Android 4th Edition" by Reto Meier
5. "Android App Development for Dummies" by Michael Burton
6. "Kotlin Programming: The Big Nerd Ranch Guide" by Josh Skeen and David Greenhalgh

Reference Books:
1. "Effective Java" by Joshua Bloch
2. "Kotlin in Action" by Dmitry Jemerov and Svetlana Isakova
3. "Android Design Patterns: Interaction Design Solutions for Developers" by Greg Nudelman
4. "Android Programming: Pushing the Limits" by Erik Hellman
5. "RxJava Essentials" by Ivan Morgillo
6. "Android Security Internals: An In-Depth Guide to Android's Security Architecture" by Nikolay Elenkov

Web Resources and PDF Links:
1. https://dl.icdst.org/pdfs/files3/156bc16579b1f757625bfc00d6c1df12.pdf
2. https://aaronyeo.org/books_/Android/Android%20Programming%20%20The%20Big%20Nerd%20Ranch%20Guide.pdf
3. https://ptgmedia.pearsoncmg.com/images/9780321804334/samplepages/0321804333.pdf
4. https://coolt.ch/notizen/wp-content/uploads/2016/02/Head-First-Android-Development-2015.pdf
5. https://www.ebookfrenzy.com/pdf_previews/AndroidStudioEssentialsPreview.pdf
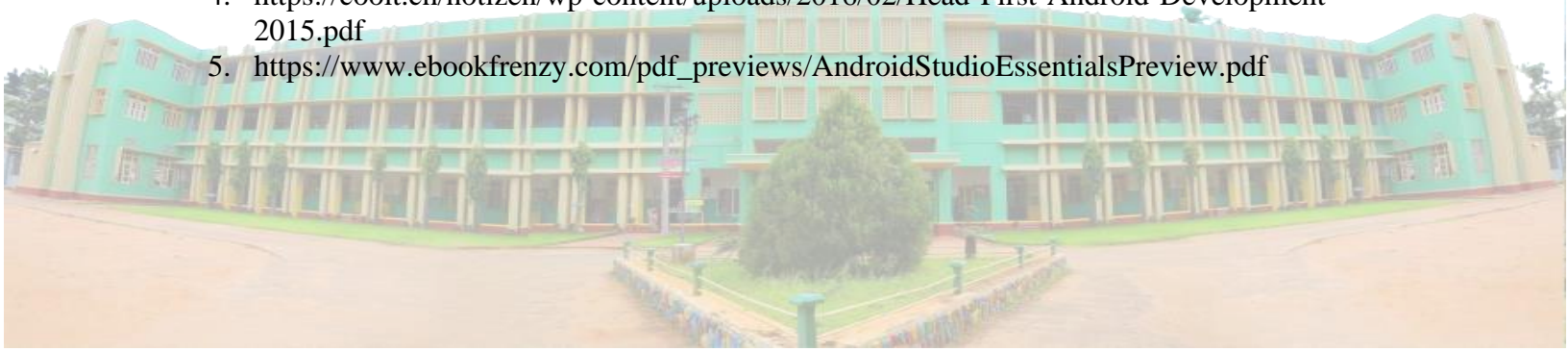
GENERIC VALUE-ADDED COURSE: ENGLISH LANGUAGE TEACHING THROUGH

CHAT GPT

Course Code	Credit	Total Hours	Total Marks
PG232V02/GV2311	1	100	100

Learning Objectives:

1. To instruct educators in using Chat GPT as a supplementary tool for English language teaching, enabling them to effectively integrate technology into their language instruction methods.
2. Teach educators how to adapt and personalize Chat GPT interactions to meet the specific needs of English language learners, fostering language acquisition and communication skills.

Course Outcomes

On the successful completion of the course, student will be able to:	
1	learn and understand the evolving role of technology, like chat GPT, in language instruction, considering the pedagogical implications, ethical considerations, and innovative practices for enhancing English language teaching methodologies.	**K1,K2**
2	apply foundational principles of English language teaching, including language acquisition theories, pedagogical strategies and Chat GPT utilization for language learning.	**K3**
3	analyze the effectiveness of chat GPT as a language teaching tool, identifying its strengths, limitations, and appropriate contexts for use in language education.	**K4,K5**

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** – Analyze , **K5-**Evaluate

Unit 1: Introduction to ChatGPT and Language Teaching
- Overview of ChatGPT and AI in Language Teaching
- Role of AI in Language Learning
- Setting Up and Interacting with ChatGPT
- Ethics and Responsible Use of AI
- Language Teaching Strategies with ChatGPT

Unit 2: ChatGPT for Vocabulary and Grammar
- Vocabulary Building with ChatGPT
- Grammar Correction and Practice
- Contextual Language Learning
- Interactive Language Quizzes and Drills
- ChatGPT for Language Assessment
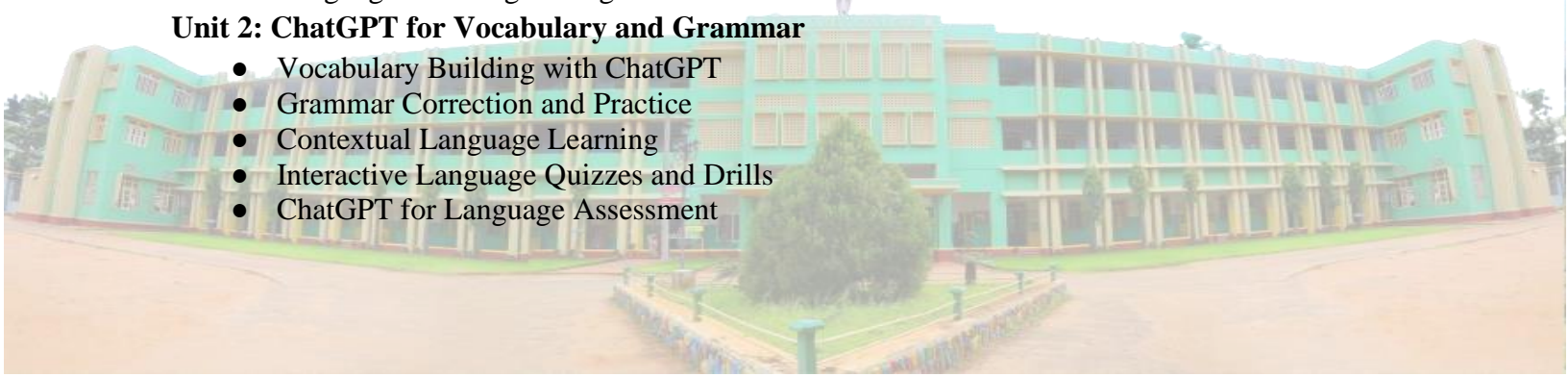
Unit 3: Conversation and Pronunciation Practice
- Role-Playing Conversations with ChatGPT
- Pronunciation and Accent Improvement
- Building Confidence in Speaking
- Real-Life Language Scenarios
- Monitoring Progress and Feedback

Unit 4: Writing and Comprehension
- Writing Exercises and Prompts
- Proofreading and Editing with ChatGPT
- Reading Comprehension and Analysis
- Creative Writing with AI Assistance
- Collaborative Writing Projects

Unit 5: Advanced Language Skills and Projects
- Advanced Language Proficiency Challenges
- Research Projects with ChatGPT
- Using AI for Language Teaching Assessment
- Final Project: Developing Innovative Language Learning Activities
- Reflecting on the Future of AI in Language Education

Textbooks:

1. "Touchstone" by Michael McCarthy and Jeanne McCarten:
Touchstone focuses on building practical communication skills through interactive activities and real-world contexts.

2. "Outcomes" by Hugh Dellar and Andrew Walkley:
Outcomes emphasizes real-life language skills and includes engaging topics for discussion and language practice.

3. "Focus on Academic Skills for IELTS" by Morgan Terry:
This series is designed for students aiming to improve their English skills in preparation for the IELTS exam, with a focus on academic language.

Reference Books:

1. "Advanced Trainer" by Cambridge English:
Advanced Trainer is a comprehensive resource for students preparing for the Cambridge English: Advanced (CAE) exam.

2. **"**World English" by Martin Milner, Rebecca Traver Chase, and Kristin L. Johannsen**:**

World English is designed to help students communicate confidently in English and build essential language skills.

Web Resources:

1. https://chat.openai.com/

2. https://www.bbc.co.uk/learningenglish

3. https://www.eslgamesplus.com/

4. https://www.duolingo.com/

5. https://learnenglish.britishcouncil.org/

GENERIC VALUE-ADDED COURSE: BIG DATA

Course Code	Credit	Total Hours	Total Marks
PG232V04/GV2313	1	100	100

Learning Objectives:

1. Develop data processing and analysis skills for data driven decision making using big data technologies.
2. Enable scalable data storage and processing solutions for handling big data challenges across diverse domains.

Course Outcomes

On the successful completion of the course, student will be able to:	
1	know the significance of data governance ethical considerations and big data's impact on business , enabling them to design and implement effective big data solutions that align with industry standards and legal regulations.	**K1,K6**
2	understand and apply fundamental big data concepts, such as distributed computing frameworks, data storage technologies and data manipulation techniques establishing a knowledge of the field.	**K2,K3**
3	analyze large datasets extract valuable insights and evaluate data processing and machine learning algorithms to solve real world problems fostering strong analytical and problem solving skills.	**K4, K5**

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** – Analyze , **K5**-Evaluate, **K6**-Create

Unit 1: Introduction to Big Data

- Understanding the significance of big data.
- Historical context and the evolution of data.
- Characteristics and challenges of big data.
- Key technologies and tools in the big data ecosystem.

Unit 2: Data Collection and Ingestion
- Data sources and data collection methods.
- Data ingestion and data integration techniques.
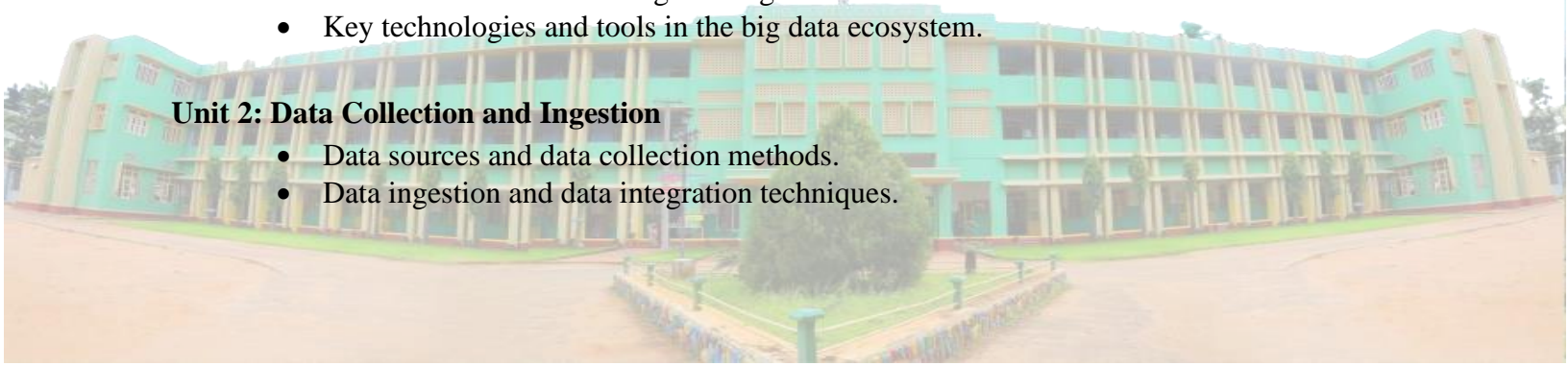
- Data quality and data cleansing.
- Realtime data processing and streaming.

Unit 3: Big Data Storage and Management

- Big data storage solutions (HDFS, NoSQL databases).
- Distributed file systems and data sharding.
- Data warehousing and data lakes.
- Managing data at scale.

Unit 4: Big Data Analysis and Processing

- MapReduce and parallel processing.
- Apache Hadoop and Spark for big data analytics.
- Data querying and visualization.
- Machine learning and predictive analytics.

Unit 5: Big Data Applications and Case Studies

- Industry applications of big data (e.g., ecommerce, healthcare).
- Case studies of successful big data implementations.
- Ethical considerations in big data.
- Final project: Developing a big data analysis project.

Text Books:

1. "Big Data: A Revolution That Will Transform How We Live, Work, and Think" by Viktor Mayer- Schönberger and Kenneth Cukier
2. "Hadoop: The Definitive Guide" by Tom White
3. "Big Data at Work: Dispelling the Myths, Uncovering the Opportunities" by Thomas H. Davenport
4. "Big Data: A Very Short Introduction" by Dawn E. Holmes

Reference Books:

1. "Big Data: A Practical Guide" by David Feinleib
2. "Data Science for Business: What You Need to Know about Data Mining and Data-Analytic Thinking" by Foster Provost and Tom Fawcett

Web Resources:

1. https://www.infoq.com/bigdata/
2. https://towardsdatascience.com/
3. https://www.datasciencecentral.com/
4. https://bigdatauniversity.com/
5. https://blog.cloudera.com/

GENERIC VALUE-ADDED COURSE: ADVANCED PYTHON

Course Code	Credit	Total Hours	Total Marks
PG232V05/GV2314	1	100	100

Learning Objectives:

1. Develop proficiency in advanced Python programming
2. Apply advanced Python for web development data analysis and problem solving.

Course Outcomes

	On the successful completion of the course, student will be able to:	
1	learn and understand advanced Python programming paradigms, such as multithreading, web development, and data analysis, enabling them to create sophisticated Python applications that meet industry standards and best practices	K1,K2
2	apply advanced python concepts, including object oriented programming data structures and libraries, establishing a solid knowledge of Python.	K3
3	analyze and solve complex problems using Python, including performance optimization, debugging and algorithm design, fostering strong analytical skills.	K4, K5

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** – Analyze , **K5-**Evaluate

Unit 1: Advanced Python Programming

- Review of Python Fundamentals
- List Comprehensions and Generators
- Decorators and Metaprogramming
- Context Managers and the with Statement
- Advanced Functions and Closures

Unit 2: Object-Oriented Programming (OOP) in Python

- Principles of OOP
- Classes and Objects
- Inheritance and Polymorphism
- Advanced OOP Concepts (Abstract Classes, Mixins)
- Design Patterns in Python

Unit 3: Python Standard Library

- Exploring the Python Standard Library
- Working with File I/O
- Networking and Sockets
- Multithreading and Multiprocessing
- Unit Testing and Test-Driven Development (TDD)

Unit 4: Data Manipulation and Analysis with Python
- NumPy for Numerical Computing
- Pandas for Data Analysis
- Data Visualization with Matplotlib and Seaborn
- Working with JSON and XML Data
- Introduction to Data Science Libraries (e.g., SciPy)

Unit 5: Web Development with Python
- Introduction to Web Frameworks (e.g., Flask, Django)
- Building RESTful APIs with Flask
- Integrating Databases (SQL and NoSQL)
- Deploying Python Web Applications
- Final Project: Building a Python Web Application

Text Books:

1. "Python Crash Course" by Eric Matthes
2. "Automate the Boring Stuff with Python" by Al Sweigart
3. "Learning Python" by Mark Lutz
4. "Python Programming for the Absolute Beginner" by Michael Dawson
5. "Python Pocket Reference" by Mark Lutz
6. "Head-First Python" by Paul Barry
7. "A Byte of Python" by Swaroop C H

References:

1. "Fluent Python" by Luciano Ramalho
2. "Python Cookbook" by David Beazley and Brian K. Jones
3. "Effective Python: 90 Specific Ways to Write Better Python" by Brett Slatkin
4. "Python in a Nutshell" by Alex Martelli
5. "Python Crash Course" by Eric Matthes
6. "Python Pocket Reference" by Mark Lutz
7. "Flask Web Development" by Miguel Grinberg
8. "Dive into Python 3" by Mark Pilgrim
9. "Python Documentation" (Official Documentation)
10. "Python Testing with pytest" by Brian Okken

Web Resources:

1. https://realpython.com/
2. https://www.geeksforgeeks.org/python-programming-language/
3. https://docs.python.org/3/ • https://www.w3schools.com/python/
4. https://stackoverflow.com/ • http://pythontutor.com/
5. https://docs.python-guide.org/
6. https://realpython.com/courses/python-basics-cheat-sheet/
7. https://github.com/vinta/awesome-python

GENERIC VALUE-ADDED COURSE: CHAT GPT AND AI TOOLS

Course Code	Credit	Total Hours	Total Marks
PG232V06/GV2315	1	100	100

Learning Objectives:

1. Develop proficiency in ChatGPT and AI tools for conversation design.
2. Apply AI tools for effective Chatbot and virtual assistant development.

Course Outcomes

	On the successful completion of the course, student will be able to:	
1	know and understand the concepts of chat GPT and AI tools including natural language processing techniques, chatbot architectures and ethical considerations	**K1, K2**
2	use and analyse Chat GPT and AI tools in enhancing human computer interactions, ethical considerations in AI design and their practical applications across various industries, enabling them to design and implement effective AI driven chatbot solutions.	**K3, K4**
3	evaluate AI tools for conversational applications, assessing their performance limitations, and potential improvements, fostering strong analytical and problem solving skills	**K5, K6**

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** – Analyze, **K5-**Evaluate, **K6**-Create

Unit I: Introduction to AI and Chat GPT
- Overview of Artificial Intelligence
- Definition, history, and key concepts of AI.
- Types of AI: Narrow AI vs. General AI.
- Introduction to Chatbots
- Definition, applications, and types of chatbots.
- Importance of chatbots in modern business and customer service.
- Understanding Chat GPT
- Introduction to Chat GPT and its capabilities.
- How Chat GPT works: NLP, machine learning, and deep learning concepts.
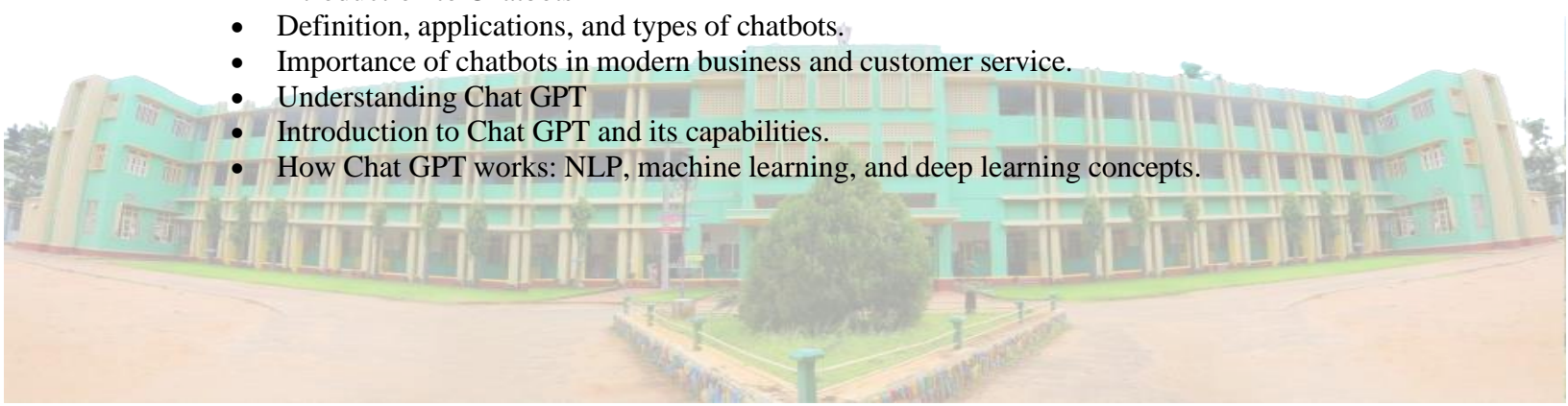
Unit II: NLP Fundamentals

- Basic Concepts of NLP
- Tokenization, stemming, lemmatization.
- Part-of-speech tagging and named entity recognition.
- Word Embeddings and Vectorization
- Word2Vec, GloVe, and other word embedding techniques.
- Vectorization of text data for machine learning models.

Unit III: Deep Learning and Neural Networks

- Introduction to Deep Learning
- Neural networks architecture and working principles.
- Activation functions, loss functions, and optimization algorithms.
- Recurrent Neural Networks (RNNs) and Long Short-Term Memory (LSTM):
- Understanding sequential data and the need for RNNs.
- LSTM networks for handling sequential data in NLP tasks.

Unit 4: Chatbot Development

- Tools and Frameworks
- Introduction to popular NLP libraries: NLTK, SpaCy, and TensorFlow.
- Chatbot development frameworks: Dialogflow, Microsoft Bot Framework, Rasa, etc.
- Building a Basic Chatbot
- Designing conversation flow and user interactions.
- Integrating NLP techniques for understanding user input.
- Implementing responses and feedback loops.

Unit 5: Advanced Topics and Applications

- Advanced NLP Techniques
- Sentiment analysis, text summarization, and language translation.
- Sequence-to-sequence models for chatbots.
- Ethical Considerations and Bias in AI
- Understanding ethical concerns in AI and chatbot development.
- Mitigating biases in training data and algorithms.
- Real-world Applications:
- Chatbots in customer service, healthcare, finance, and other industries.
- Case studies and success stories of AI-powered chatbot implementations.

Textbooks:

1. "Speech and Language Processing" by Dan Jurafsky and James H. Martin
2. "Deep Learning" by Ian Goodfellow, Yoshua Bengio, and Aaron Courville
3. "Natural Language Processing in Action" by Lane, Howard, and Hapke
4. "Attention is All You Need" (Original Transformer Paper) by Vaswani et al.
5. Online Documentation and Research Papers

Reference Books:

1. "Natural Language Processing in Action" by Lane, Howard, and Hapke
2. "Foundations of Machine Learning" by Mehryar Mohri, Afshin Rostamizadeh, and Ameet Talwalkar
3. "Deep Learning" by Ian Goodfellow, Yoshua Bengio, and Aaron Courville
4. "Pattern Recognition and Machine Learning" by Christopher M. Bishop

Web Resources:

1. TalkAI: ChatGPT Without Registration - Free Use
2. ChatGPT (openai.com)
3. CodeDesign.ai | AI Website Builder
4. NLP Research Scientist:
5. Data Scientist - NLP:
6. Machine Learning Engineer:
7. Product Manager - NLP:
8. Conversational AI Developer:
9. AI Ethics and Bias Analyst:
10. AI Trainer or Data Annotation Specialist:
11. AI Consultant:
12. Technical Writer for AI:
13. Research Engineer - Conversational AI:

SEMESTER II

GENERIC VALUE-ADDED COURSE: MASTER IN DIGITAL MARKETING ADS

Course Code	Credit	Total Hours	Total Marks
PG232V07/GV2316	1	100	100

Learning Objectives:

1. To make students proficient in creating and executing effective digital marketing ad campaigns, utilizing various platforms, targeting techniques, and advertising strategies.
2. To analyze campaign data, assess ad performance and adapt marketing strategies empowering them to make data driven decisions and optimize digital ad efforts.

Course Outcomes

On the successful completion of the course, student will be able to:	
1	recall and understand the dynamic landscape of digital marketing, including trends, ethical considerations and the role of advertising in digital branding, enabling them to design and execute effective digital advertising campaigns that align with industry best practices.	**K1, K2, K6**
2	apply fundamental digital marketing concepts, including advertising strategies, ad platforms, and targeting techniques, establishing a knowledge of digital advertising	**K3**
3	analyze digital marketing campaigns, evaluating ad performance, audience engagement and ROI to optimize advertising strategies and budgets, fostering strong analytical and data-driven decision making skills	**K4,K5**

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** – Analyze , **K5**-Evaluate, **K6**-Create

Unit 1: Introduction to Digital Marketing Ads
- Overview of Digital Marketing
- Evolution of Digital Advertising
- Importance of Digital Marketing Ads
- Key Digital Advertising Platforms
- Trends and Challenges in Digital Marketing

Unit 2: Digital Advertising Strategy

- Setting Advertising Goals and Objectives
- Target Audience Segmentation
- Customer Journey Mapping
- Competitive Analysis
- Budgeting and Resource Allocation

Unit 3: Digital Advertising Channels

- Search Engine Marketing (SEM)
- Display Advertising
- Social Media Advertising
- Email Marketing
- Content Advertising
- Mobile Advertising
- Video Advertising

Unit 4: Creating Compelling Ad Campaigns

- Ad Copywriting and Design
- Ad Formats and Creatives
- Landing Page Optimization
- A/B Testing and Experimentation
- Ad Campaign Tracking and Analytics

Unit 5: Optimization and Performance Measurement

- Key Performance Indicators (KPIs)
- Conversion Rate Optimization (CRO)
- ROI Analysis and Reporting
- Ad Fraud Detection and Prevention
- Legal and Ethical Considerations in Digital Advertising

Textbooks:

1. "Digital Marketing: Strategy, Implementation and Practice" by Dave Chaffey and

Fiona Ellis- Chadwick - This book provides a comprehensive overview of digital

marketing strategies and implementation.

2. "Digital Marketing Excellence: Planning, Optimizing and Integrating Online

Marketing" by Dave Chaffey and PR Smith - Another essential book by Dave Chaffey,

focusing on planning, optimizing, and integrating online marketing efforts.

3. "Social Media Marketing: A Strategic Approach" by Melissa Barker, Donald I. Barker, and

Nicholas

F. Bormann - This textbook covers social media marketing strategies and tactics.

Reference Books:

1. "Contagious: How to Build Word of Mouth in the Digital Age" by Jonah Berger - This

book explores the factors that make ideas and products go viral, providing insights for digital

marketing.

2. "Invisible Selling Machine" by Ryan Deiss - This book offers a blueprint for creating

automated marketing systems and effective digital sales funnels.

3. "Epic Content Marketing: How to Tell a Different Story, Break through the Clutter, and

Win More Customers by Marketing Less" by Joe Pulizzi - Joe Pulizzi emphasizes the

importance of content marketing in this book.

Web Resources:

1. https://www.slideshare.net/NiteshBalraju/digital-advertising-ppt
2. https://www.slideshare.net/JackM29/types-of-digital-advertising
3. https://www.slideshare.net/DelitaGading/display-advertising-in-digital-marketing

GENERIC VALUE-ADDED COURSE: ANGULAR JS

Course Code	Credit	Total Hours	Total Marks
PG232V08/GV2317	1	100	100

Learning Objectives:

1. To make proficient in developing dynamic web applications using Angular JS, mastering key concepts, components, and best practices in front end web development.
2. To create interactive, responsive, and maintainable web applications, applying Angular JS for improved user experiences and efficient data handling.

Course Outcomes

	On the successful completion of the course, student will be able to:	
1	learn and understand the significance of single page applications, routing and the role of Angular JS in modern web development, enabling them to design and implement interactive and efficient web applications that align with industry standards and best practices.	K1, K2
2	apply essential Angular JS concepts, including data binding, controllers and directives, establishing a knowledge of the framework.	K3
3	analyze and assess Angular JS applications, identifying performance, code optimization opportunities, and effective user interface design principles, fostering strong analytical skills.	K4

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** – Analyze

Unit 1: Introduction to AngularJS
- Objective: Understand the basics of AngularJS and its fundamental concepts.
- Overview of AngularJS
- Learn what AngularJS is, its history, and why it is used.
- Setting Up Your Development Environment
- Install necessary tools like Node.js and Angular CLI.
- Understanding MVC Architecture
- Comprehend the Model-View-Controller architecture used in AngularJS.
- Expressions and Directives

- Learn about expressions, data binding, and built-in directives like ng-repeat and ng-model.

Unit 2: Deep Dive into AngularJS Directives
- Objective: Explore AngularJS directives in detail and learn how to use them effectively.
- Custom Directives
- Create custom directives to extend the functionality of AngularJS.
- Filters and Forms
- Use filters for data formatting and validation in forms.
- Dependency Injection
- Understand dependency injection and how it is implemented in AngularJS.
- Services and Factories
- Learn about services and factories for creating reusable components.

Unit 3: Working with AngularJS Components
- Objective: Master the concepts of components, modules, and routing in AngularJS.
- Components and Modules
- Understand component-based architecture and create modular AngularJS applications.
- Routing and Views
- Implement client-side routing and multiple views in AngularJS applications.
- HTTP Communication
- Learn to make HTTP requests using AngularJS's $http service.
- Testing in AngularJS
- Explore testing techniques using tools like Jasmine and Karma for AngularJS applications.

Unit 4: Advanced AngularJS Concepts
- Objective: Explore advanced topics like directives, animations, and security in AngularJS.
- Animations
- Implement animations using AngularJS's built-in animation module.
- Authentication and Authorization
- Learn about user authentication and authorization techniques in AngularJS applications.
- Internationalization and Localization
- Explore methods to internationalize and localize AngularJS applications for different languages and regions.
- Error Handling and Debugging
- Understand error handling techniques and best practices for debugging AngularJS applications.

Unit 5: Building Real-World Applications and Best Practices

- Objective: Apply your knowledge to build real-world AngularJS applications and understand best practices.
- Project Work
- Work on a small to medium-sized project to apply your AngularJS skills.
- Code Optimization and Performance
- Learn about best practices for optimizing AngularJS code and improving performance.
- Security Best Practices
- Understand security best practices to protect AngularJS applications from common vulnerabilities.
- Community Involvement
- Engage with the AngularJS community, participate in forums, and contribute to open-source projects.

TextBooks:

1. "Angular Development with TypeScript" by Yakov Fain and Anton Moiseev
2. "ng-book: The Complete Book on Angular" by Nathan Murray, Ari
3. Lerner, Felipe Coury, and Carlos Taborda
4. "Angular in Action" by Jeremy Wilken
5. "Angular Up and Running" by Shyam Seshadri and Sergey Melnikov

Reference Books:

1. "Programming Angular" by Diego Netto and Kevin Hennessy
2. "Angular Essentials" by Dhananjay Kumar

Web Resources:

1. https://angular.io/
2. https://angular-university.io

SEMESTER II

GENERIC VALUE-ADDED COURSE: ADVANCED ARTIFICIAL INTELLIGENCE

Course Code	Credit	Total Hours	Total Marks
PG232V09/GV2318	1	100	100

Learning Objectives:

1. Develop proficiency in advanced AI techniques.
2. Apply advanced AI to diverse domains for data-driven innovation.

Course Outcomes

	On the successful completion of the course, student will be able to:	
1	know and understand the role of advanced AI in various domains, including healthcare, robotics, and natural language processing, enabling them to design and implement cutting edge AI solutions that align with industry standards and ethical considerations.	K1,K2
2	apply advanced artificial intelligence concepts, including deep learning algorithms, reinforcement learning strategies, and neural network architectures, establishing a strong foundational knowledge in AI.	K3
3	analyze complex AI systems, evaluating their performance, ethical implications and areas for improvement fostering strong analytical and problem solving skills in advanced AI applications.	K4, K5

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** – Analyze **K5-**Evaluate

Unit 1: Fundamentals of Artificial Intelligence
- Introduction to Artificial Intelligence:
- Historical overview
- Types of AI: Narrow vs General Intelligence
- Ethical and societal implications
- Machine Learning Basics:
- Supervised, Unsupervised, Reinforcement learning
- Feature engineering and selection
- Evaluation metrics
- Deep Learning Foundations:
- Neural networks, activation functions
- Backpropagation and gradient descent
- Convolutional and recurrent neural networks
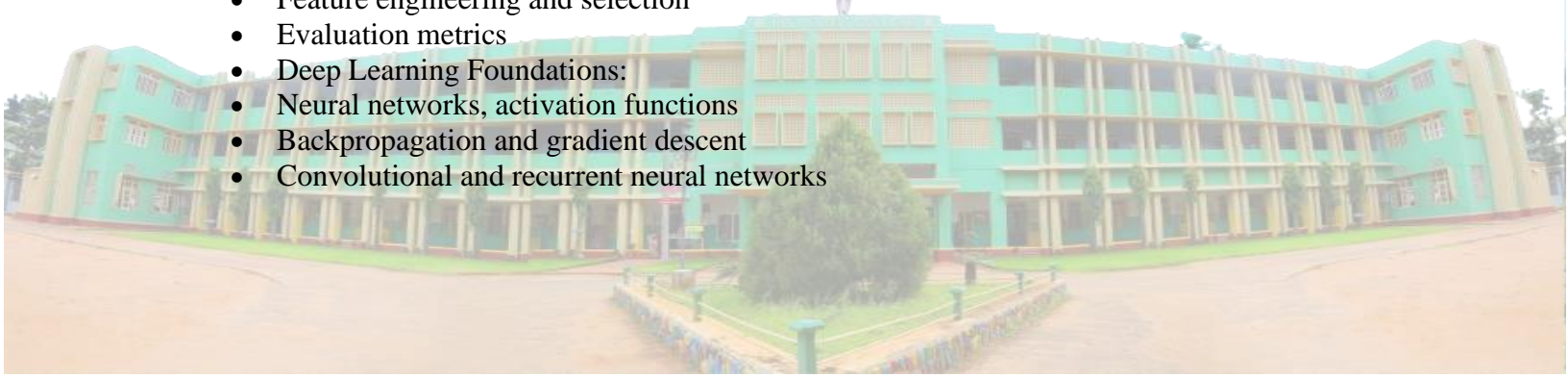
Unit 2: Advanced Machine Learning Techniques

- Advanced Deep Learning Architectures:
- Generative Adversarial Networks (GANs)
- Transformers and attention mechanisms
- Variational Autoencoders (VAEs)
- Reinforcement Learning:
- Markov Decision Processes
- Q-learning, Policy Gradient methods
- Deep Reinforcement Learning
- Natural Language Processing (NLP):
- Tokenization, word embeddings
- Sequence-to-sequence models
- BERT, GPT, and other pre-trained models

Unit 3: AI in Computer Vision

- Image Processing and Feature Extraction:
- Filters, edge detection
- Image segmentation
- Object detection and tracking
- Convolutional Neural Networks (CNNs):
- Architectures (VGG, ResNet, etc.)
- Transfer learning
- Image generation using CNNs
- Advanced Computer Vision:
- Semantic segmentation
- Pose estimation
- Object recognition in videos

Unit 4: AI in Natural Language Processing

- Advanced NLP Techniques:
- Named Entity Recognition (NER)
- Sentiment analysis
- Text summarization and generation
- Language Models:
- Transformer-based architectures
- Training large-scale language models
- Ethical considerations in language generation
- Dialogue Systems and Chatbots:
- Rule-based vs Machine Learning-based approaches
- Building interactive chatbots
- Handling contextual conversations

Unit 5: Special Topics and Applications

- AI Ethics and Bias:
- Bias in AI algorithms
- Fairness and accountability
- Ethical guidelines and regulations

- AI in Healthcare:
- Disease prediction
- Drug discovery
- Medical image analysis
- AI in Robotics:
- Robot perception and decision-making
- Autonomous navigation
- Human-robot interaction
- AI for Business and Industry:
- Predictive analytics
- Process automation
- Customer behavior analysis
- AI and Future Technologies:
- Quantum computing and AI
- AI in IoT (Internet of Things)
- AI and blockchain

Text Books:
1. "Deep Learning" by Ian Goodfellow, Yoshua Bengio, and Aaron Courville.
2. "Reinforcement Learning: An Introduction" by Richard S. Sutton and Andrew G. Barto.
3. "Natural Language Processing in Action" by Lane, Howard, and Hapke.
4. "Computer Vision: Algorithms and Applications" by Richard Szeliski.
5. "Artificial Intelligence: A Modern Approach" by Stuart Russell and Peter Norvig.
6. "Speech and Language Processing" by Dan Jurafsky and James H. Martin.
7. "Computer Vision: Algorithms, Learning, and Inference" by E. Richard Hartley and Andrew Zisserman

Reference Books:
1. "Artificial Intelligence: A New Synthesis" by Nils J. Nilsson.
2. "Machine Learning: A Probabilistic Perspective" by Kevin P. Murphy.
3. "Pattern Recognition and Machine Learning" by Christopher M. Bishop.
4. "Probabilistic Graphical Models: Principles and Techniques" by Daphne Koller and Nir Friedman.
5. "Programming Computer Vision with Python" by Jan Erik Solem.

Web Resources:

1. https://www.ibm.com/topics/artificial-intelligence
2. https://www.techtarget.com/searchenterpriseai/definition/deep-learningdeep-neural-network
3. https://www.simplilearn.com/tutorials/machine-learningtutorial/reinforcement-learning
4. https://www.datacamp.com/blog/7-ai-projects-for-all-levels
5. https://www.javatpoint.com/computer-vision

SEMESTER II

GENERIC VALUE-ADDED COURSE: ADVANCED DISTRIBUTED QUEUE

(APACHE KAFKA)

Course Code	Credit	Total Hours	Total Marks
PG232V10/GV2319	1	100	100

Learning Objectives:

1. To make expertise in advanced Apache Kafka implementation
2. To use Kafka for real time data processing and scalable distributed systems.

Course Outcomes

| On the successful completion of the course, student will be able to:	
1	remember and understand the significance of Kafka in data streaming, real time analytics, and event driven architectures, enabling them to design and implement advanced distributed systems that align with industry standards and best practices.	**K1,K2**
2	explain Kafka implementations, evaluating their performance, scalability, and fault tolerance and problem solving skills in distributed data processing.	**K2**
3	apply and analyze advanced concepts of Apache Kafka, including message queuing, stream processing, and data integration, establishing a solid foundational knowledge of the technology.	**K3,K4**

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze

Unit 1: Introduction to Apache Kafka
- Overview of Apache Kafka and its role in distributed messaging.
- Kafka architecture: brokers, producers, consumers, and topics.
- Setting up a Kafka cluster.
- Producing and consuming messages.

Unit 2: Kafka Topics and Partitions
- Understanding Kafka topics and partitions.
- Partitioning strategies and topic configuration.
- Message distribution and replication.
- Data retention and compaction.
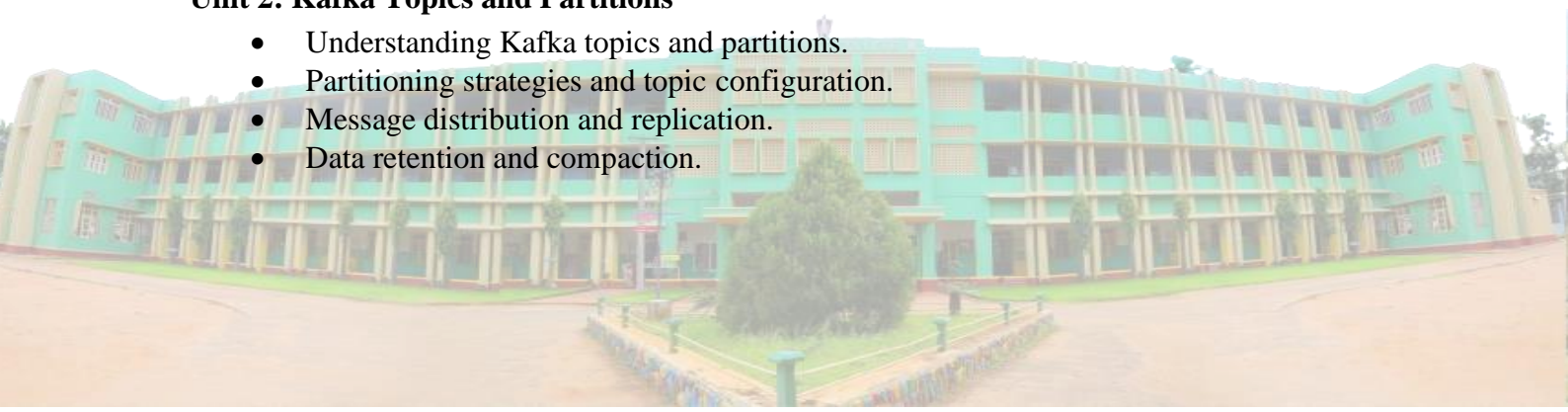
Unit 3: Kafka in Real World Applications
- Log compaction for changelog and data retention.
- Integration of Kafka with other data systems (e.g., databases).
- Kafka Connect for data pipelines.
- Monitoring and performance tuning.

Unit 4: Kafka Stream Processing
- Stream processing fundamentals with Kafka Streams.
- Realtime data processing and transformations.
- Joining and aggregating data streams.
- Building stream processing applications.

Unit 5: Advanced Kafka Topics and Capstone Project
- Kafka security and authorization.
- Kafka as an event driven microservices backbone.
- Kafka ecosystem tools (e.g., Confluent Platform).
- Final capstone project: Implementing a real world Kafka use case.

Text Books:
1. Database Internals: A Deep Dive into How Distributed Data Systems Work, Alex Petrov, 2021
2. System Design Interview – An insider's guide, Alex Xu, 2020
3. Understanding Distributed Systems, Second Edition, Roberto Vitillo, 2020

Reference Books:

1. Distributed Services with Go Your Guide to Reliable, Scalable, and Maintainable Systems, Travis Jeffery, 2021
2. Distributed Systems Maarten van Steen, Andrew S. Tanenbaum, 2020
3. Designing Data Intensive Application, Martin Kleppmann, 2017

Web Resources:

1. https://www.slideshare.net/NexThoughts/apache-kafka-65082138
2. https://www.slideshare.net/ConfluentInc/apache-kafka-architecture-fundamentals-explained

SEMESTER IV

GENERIC VALUE-ADDED COURSE: **TECHNICAL WRITING**

Course Code	Credit	Total Hours	Total Marks
GV2301	1	100	100

Learning Objectives:

1. Equip students with the skills to communicate complex technical information clearly and concisely through written documents, such as manuals, reports, and instructional guides.
2. Teach students to adapt their writing style to audience and industries, enabling them to create effective technical documentation that meets professional standards.

Course Outcomes

	On the successful completion of the course, student will be able to:	
1	remember and apply fundamental principles of technical writing, including formatting, style guides, and document organization, ensuring adherence to established conventions.	**K1, K3**
2	understand the importance of audience analysis, information gathering and ethical considerations in technical writing, enabling them to produce documents that meet the needs of diverse readers while upholding ethical standards.	**K2, K3**
3	analyze and evaluate critically complex technical information, synthesizing it into clear and comprehensible documents, demonstrating effective problem- solving skills.	**K4, K5**

K1 - Remember; **K2** - Understand; **K3** – Apply, **K4** – Analyze, **K5-**Evaluate

Unit 1: Introduction to Technical Writing

- Understanding the importance of technical writing in different industries.
- Differentiating technical writing from other forms of writing.
- Identifying the target audience and purpose of technical documents.
- Overview of key principles, including clarity, conciseness, and precision.
- Common challenges in technical writing and how to address them.
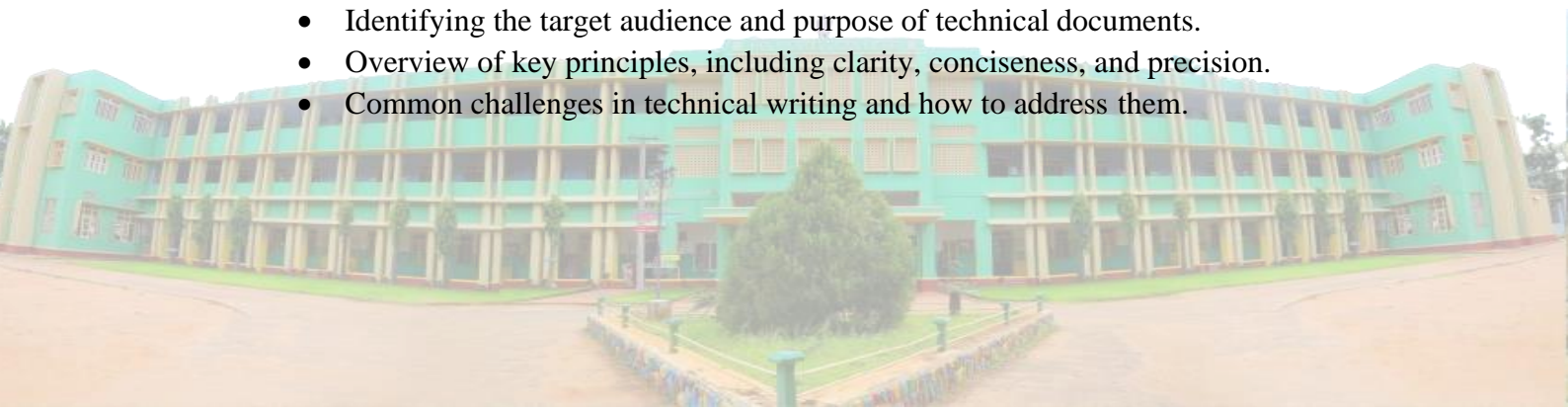
Unit 2: Planning and Research

- The prewriting process: Defining objectives and scope.
- Conducting effective research and gathering relevant data.
- Organizing information and creating outlines.
- Developing a document structure for different types of technical documents.
- Citation and referencing in technical writing.

Unit 3: Writing Techniques and Style

- Writing clearly and concisely: Avoiding jargon and complex language.
- Choosing the appropriate tone for the audience and purpose.
- Grammar and punctuation in technical writing.
- Visual aids and graphics: Incorporating images, tables, and diagrams.
- Reviewing and editing for clarity and coherence.

Unit 4: Document Types and Genres

- User manuals and instructional guides.
- Technical reports and research papers.
- Proposals, business plans, and project documentation.
- Online documentation and help systems.
- Case studies: Analyzing examples from different industries.

Unit 5: Collaboration and Project Management

- Collaborative writing in technical teams.
- Version control and document management tools.
- Understanding project timelines and deadlines.
- Peer review and feedback processes.
- Finalizing and publishing technical documents.

Textbooks:

1. "Technical Communication: A Reader-Centered Approach" by Paul V. Anderson
2. "Technical Writing: Process and Product" by Sharon J. Gerson and Steven M. Gerson
3. "Technical Communication" by Mike Markel
4. "Handbook of Technical Writing" by Gerald J. Alred, Charles T. Brusaw, and Walter E. Oliu
5. "Technical Writing For Dummies" by Sheryl Lindsell-Roberts
6. "Technical Writing 101: A Real-World Guide to Planning and Writing Technical Content" by Alan S. Pringle and Sarah S. O'Keefe
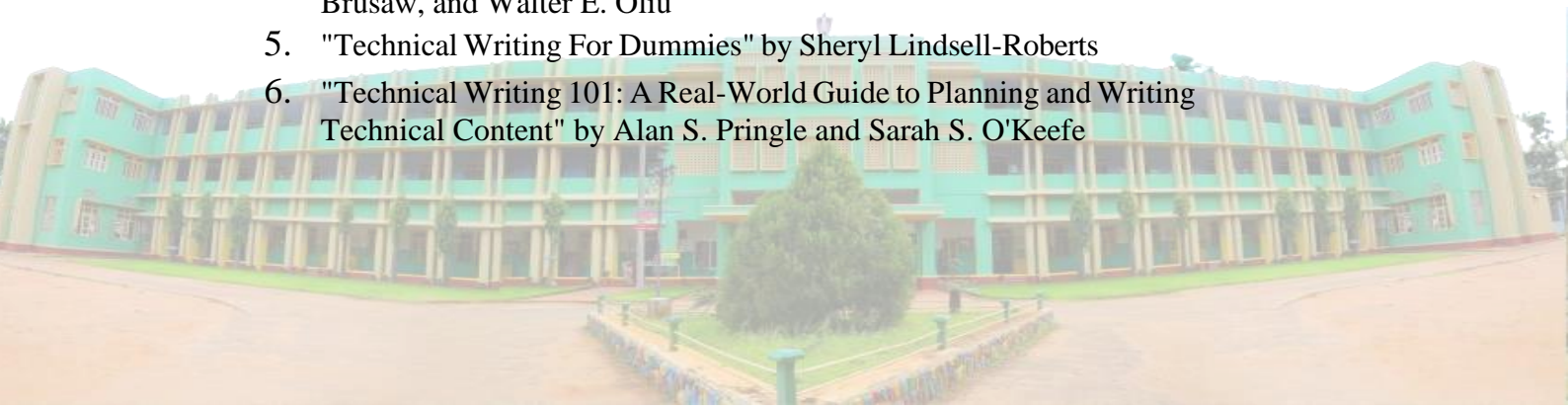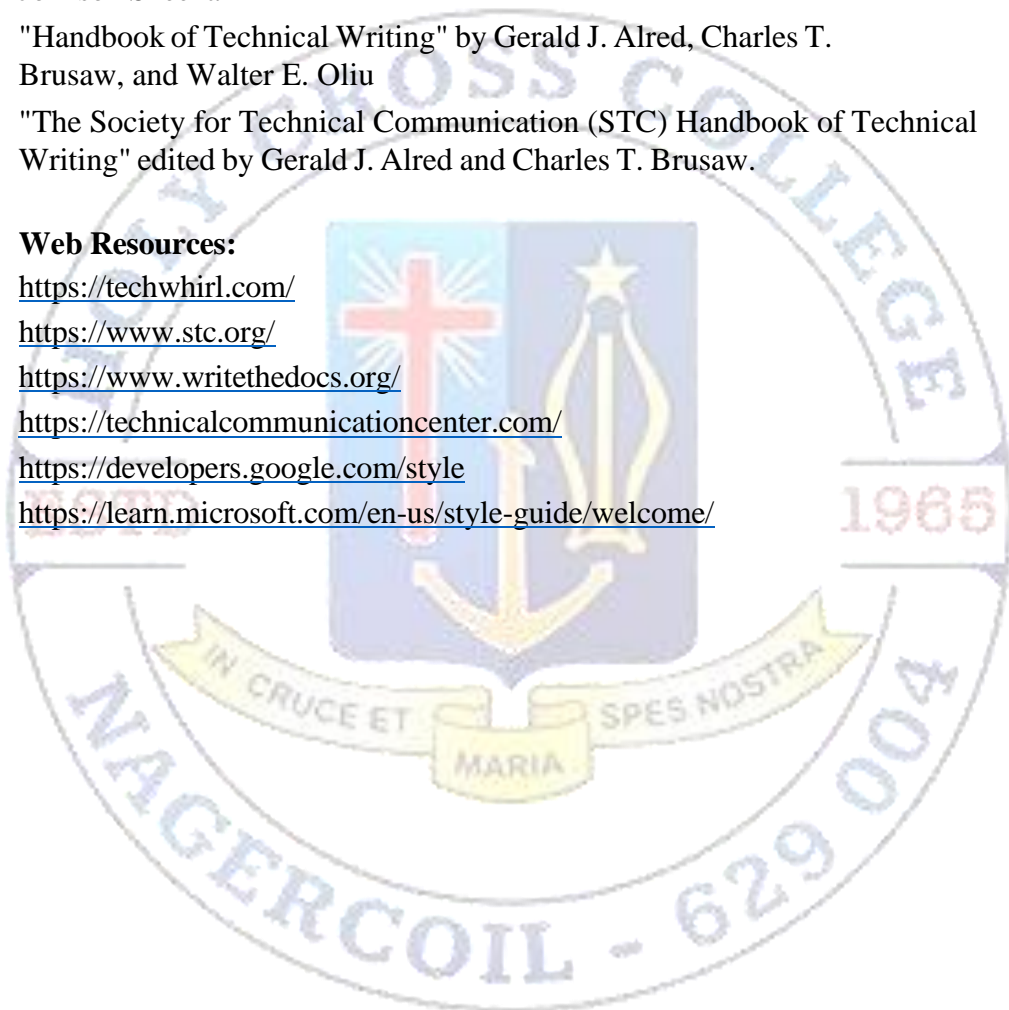
References:

1. "Microsoft Manual of Style for Technical Publications" by Microsoft Corporation
2. "Read Me First! A Style Guide for the Computer Industry" by Sun Technical Publications
3. "The Chicago Manual of Style" by The University of Chicago Press Editorial Staff
4. "Technical Editing" by Carolyn D. Rude
5. "Technical Communication Strategies for Today" by Richard Johnson Sheehan
6. "Handbook of Technical Writing" by Gerald J. Alred, Charles T. Brusaw, and Walter E. Oliu
7. "The Society for Technical Communication (STC) Handbook of Technical Writing" edited by Gerald J. Alred and Charles T. Brusaw.

Web Resources:

1. https://techwhirl.com/
2. https://www.stc.org/
3. https://www.writethedocs.org/
4. https://technicalcommunicationcenter.com/
5. https://developers.google.com/style
6. https://learn.microsoft.com/en-us/style-guide/welcome/

SEMESTER IV

GENERIC VALUE-ADDED COURSE: DATA SCIENCE

Course Code	Credit	Total Hours	Total Marks
GV2302	1	100	100

Learning Objectives:

1. Equip students with the ability to apply machine learning algorithms and data modeling techniques to solve real world problems and make data driven predictions and recommendations.
2. Teach students to effectively communicate and visualize their data findings and insights to diverse audiences, including technical and non-technical stakeholders, through clear and persuasive data.

Course Outcomes

| On the successful completion of the course, student will be able to:	
1	define data science concepts, including statistical methods, data cleaning techniques and programming languages like Python establishing a knowledge of the field.	**K1**
2	classify and develop complex data sets, applying data visualization and statistical techniques to extract meaningful insights and patterns.	**K2,K3**
3	examine the ethical implications and limitations of data science, as well as the role of data in decision-making processes, enabling them to make informed and responsible data-driven decisions in various contexts	**K4,K5**

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** – Analyze , **K5-**Evaluate

Unit 1: Introduction to Data Science

- Overview of Data Science and its applications
- Understanding the Data Science workflow
- Basics of data collection, cleaning, and preprocessing
- Introduction to data visualization and exploratory data analysis (EDA)

Unit 2: Data Manipulation and Analysis

- Data wrangling techniques using Python or R
- Descriptive statistics and summary metrics
- Hypothesis testing and statistical inference
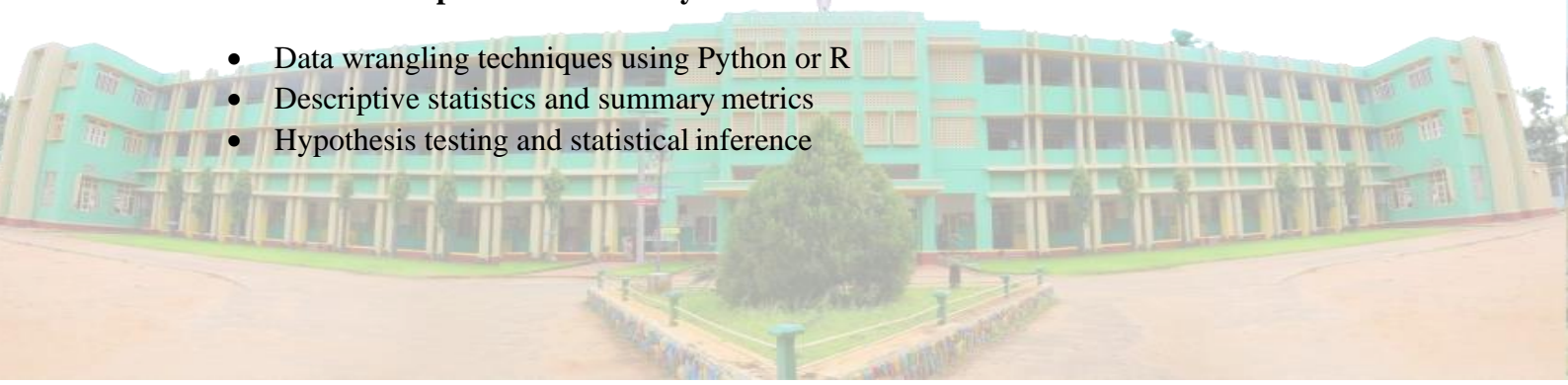
- Correlation and causation in data analysis

Unit 3: Machine Learning Fundamentals

- Introduction to machine learning and its types
- Supervised learning: Regression and Classification
- Unsupervised learning: Clustering and Dimensionality Reduction
- Model evaluation and selection

Unit 4: Advanced Topics in Data Science

- Feature engineering and selection
- Time series analysis and forecasting
- Natural Language Processing (NLP)
- Introduction to deep learning and neural networks

Unit 5: Real-World Data Science Projects

- Guided project work applying concepts learned in previous units
- Data-driven decision-making and problem-solving
- Presentation and communication of data insights
- Ethical considerations in Data Science

Textbooks:

1. Introduction to Data Science" by Jeffrey Stanton
2. "Data Science for Business" by Foster Provost and Tom Fawcett
3. "Python for Data Analysis" by Wes McKinney

Reference Books:

1. "The Elements of Statistical Learning" by Trevor Hastie, Robert Tibshirani, and Jerome Friedman
2. "Hands-On Machine Learning with Scikit-Learn, Keras, and TensorFlow" by Aurélien Géron
3. "Data Science from Scratch" by Joel Grus

Web Resources:
1. Kaggle
2. Towards Data Science
3. W3school
4. Coursera

SEMESTER IV

GENERIC VALUE-ADDED COURSE: CLOUD COMPUTING

Course Code	Credit	Total Hours	Total Marks
GV2303	1	100	100

Learning Objectives:

1. Enable students to understand the fundamental principles of cloud computing, including virtualization, scalability, and resource provisioning to effectively design and manage cloud based solutions.
2. Teach students how to leverage cloud platforms and services, such as AWS, Azure, or Google Cloud, to deploy secure and optimize applications and data storage in the cloud, meeting industry standards and best practices.

Course Outcomes

On the successful completion of the course, student will be able to:	
1	remember key cloud computing concepts, including virtualization, cloud service models and security protocols.	K1
2	understand the implications of cloud compliance, cost management and disaster recovery as well as the role of cloud in modern IT infrastructures, enabling them to make informed decisions regarding cloud adoption and management in organizations.	K2, K3
3	analyse cloud architecture and deployment models, evaluating their suitability for different business requirements in cloud design.	K4, K5

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** – Analyze , **K5-**Evaluate

Unit 1: Introduction to Cloud Computing

- What is cloud computing?
- Historical context and evolution of cloud technology.
- Advantages and challenges of cloud computing.
- Key cloud service providers and their offerings.
- Cloud computing trends and industry impact.
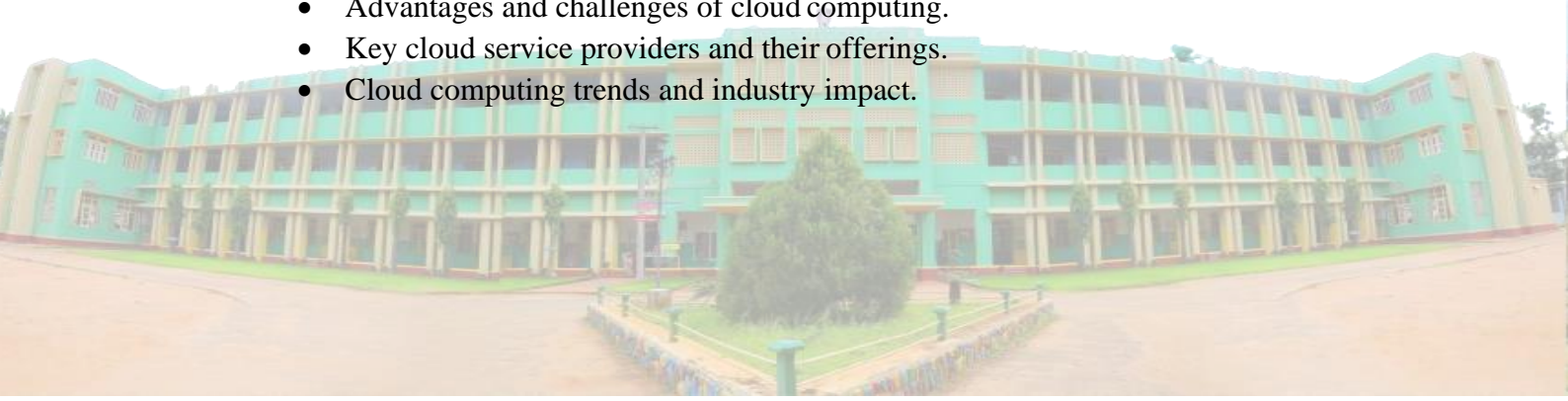
Unit 2: Cloud Service Models

- Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS).
- Comparison of service models and use cases.
- Practical examples and case studies of each service model.
- Lab: Deploying virtual machines on an IaaS platform.

Unit 3: Cloud Deployment Models

- Public, private, hybrid, and multicloud deployments.
- Factors influencing deployment model selection.
- Case studies of organizations using different deployment models.
- Lab: Setting up a private cloud environment.

Unit 4: Cloud Security and Compliance

- Cloud security challenges and best practices.
- Data protection, encryption, and identity management in the cloud.
- Regulatory compliance and industry standards.
- Lab: Implementing cloud security measures.

Unit 5: Cloud Migration and Management

- Strategies for migrating applications to the cloud.
- Cloud management tools and platforms.
- Cost management and optimization in the cloud.
- Lab: Managing cloud resources and optimizing costs.

Text books:

1. "Cloud Computing: Concepts, Technology & Architecture" by Thomas Erl, Ricardo Puttini, and Zaigham Maand Zaigham Mahmood
2. "Cloud Computing: A Hands-On Approach" by Arshdeep Bahga and Vijay Madisetti
3. "Cloud Computing: From Beginning to End" by Ray J. Rafaels

Reference Books:

1. "The Big Switch: Rewiring the World, from Edison to Google" by Nicholas Carr
2. Cloud Native Patterns: Designing Change-Tolerant Software" by Cornelia Davis
3. "Architecting the Cloud: Design Decisions for Cloud Computing Service Models" by Michael J. Kavis

Web Resources:

1. https://cloud.google.com/docs https://docs.aws.amazon.com/ 2.

2. https://docs.microsoft.com/en-us/azure/

3. https://www.coursera.org/ https://www.udacity.com/ https://www.edx.org/

SEMESTER IV

GENERIC VALUE-ADDED COURSE: FINANCIAL LITERACY

Course Code	Credit	Total Hours	Total Marks
GV2304	1	100	100

Learning Objectives:

1. Educate participants on fundamental financial concepts, including budgeting, saving and managing debt, to enhance their personal financial management skills.
2. Empower learners to make informed financial decisions, understand investment options, and plan for their financial future, promoting financial security and independence.

Course Outcomes

.On the successful completion of the course, student will be able to:		
1	relate fundamental financial concepts, including budgeting, savings, and debt management to establish a foundational understanding of personal finance.	K1, K2
2	choose and analyse financial statements, investment options, and risk management strategies, enabling them to make informed decisions and assess financial risks.	K3, K4
3	determine the importance of financial planning, tax regulations, and long term financial goals, equipping them to create and manage comprehensive financial plans for themselves and others	K5,K6

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** – Analyze , **K5**-Evaluate, **K6**-Create

Unit 1: Introduction to Financial Literacy

- Understanding Financial Literacy
- Importance of Financial Literacy
- Setting Financial Goals
- Basics of Personal Finance
- Building a Financial Plan

Unit 2: Budgeting and Money Management

- Creating a Personal Budget
- Tracking Expenses and Income
- Saving and Emergency Funds
- Managing Debt
- Credit Scores and Credit Management
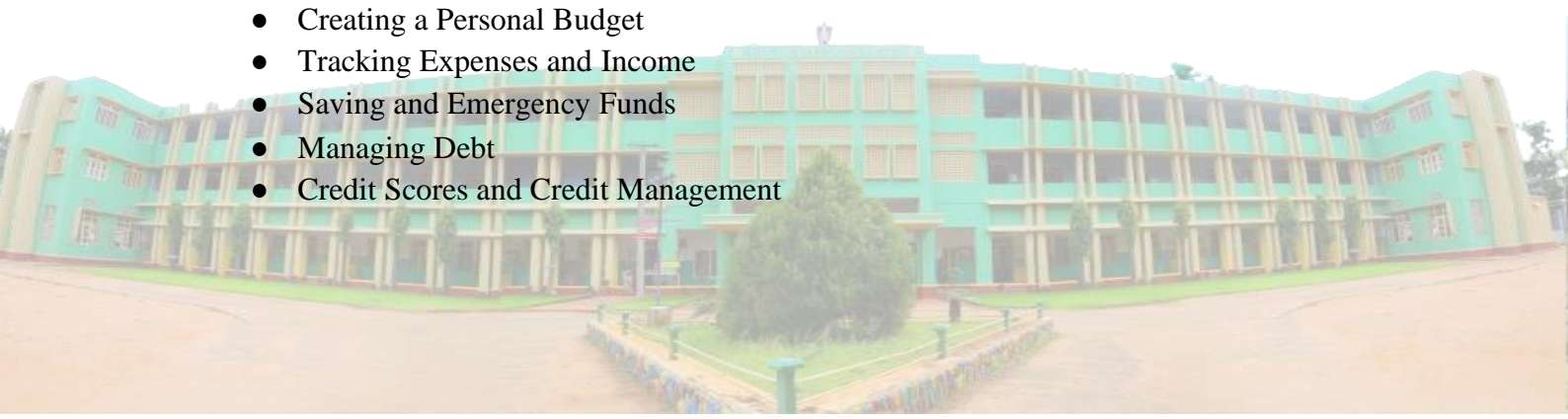
Unit 3: Saving and Investing

- Importance of Saving
- Types of Savings Accounts
- Introduction to Investing
- Investment Vehicles (Stocks, Bonds, Mutual Funds)
- Risk and Return in Investments

Unit 4: Retirement Planning

- Retirement Planning Basics
- Retirement Accounts (401(k), IRA, Pension)
- Social Security and Medicare
- Investment Strategies for Retirement
- Retirement Income Planning

Unit 5: Financial Goals and Future Planning

- Setting Long-Term Financial Goals
- Building Wealth and Financial Independence
- Estate Planning and Wealth Transfer
- Financial Literacy Resources and Tools
- Final Project: Creating a Personal Financial Plan

Text books:

1. "Personal Finance" by Jack Kapoor, Les Dalby, and Robert J. Hughes:
2. "Foundations of Financial Management" by Stanley B. Block and Geoffrey A. Hirt
3. "Your Financial Revolution: Time to Recognize, Revitalize, and Release Your Financial Power" by Gary Keesee

Reference Books:

1. "The Total Money Makeover: A Proven Plan for Financial Fitness" by Dave Ramsey
2. "The Millionaire Next Door: The Surprising Secrets of America's Wealthy"by Thomas J. Stanley and William D. Danko
3. "Common Sense on Mutual Funds" by John C. Bogle

Web Resources:

1. www.investopedia.com
2. www.nefe.org:
3. (www.khanacademy.org/college-careers-more/personal-finance)

SEMESTER IV

GENERIC VALUE-ADDED COURSE: .NET FRAMEWORK

Course Code	Credit	Total Hours	Total Marks
GV2305	1	100	100

Learning Objectives:

1. Teach students to develop software applications using .NET technologies, including C# and ASP.NET, enabling them to create functional and scalable software solutions.
2. Provide learners with the skills to design, test and deploy .NET based applications, fostering proficiency in the complete software development lifecycle.

Course Outcomes

On the successful completion of the course, student will be able to:		
1	list key,NET framework components and concepts, such as C# , ASP.NET, and the . NET Framework libraries, establishing a solid foundational knowledge of the technology.	K1
2	infer and dissect.NET based applications, identifying performance bottle necks, security vulnerabilities, and problem solving skills.	K2,K4
3	make use of scalability, cross platform development and security within the .NET ecosystem, enabling them to create robust and secure software solutions that meet modern industry standards.	K3,K5,K6

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** – Analyze , **K5-**Evaluate, **K6**-Create

Unit 1: Introduction to .NET Framework

- Overview of the .NET Framework and its components.
- Historical context and evolution of .NET.
- Common Language Runtime (CLR) and the .NET ecosystem.
- Installing and setting up the .NET development environment.

Unit 2: C# Programming

- Introduction to C# programming language.
- Data types, variables, and operators in C#.
- Control structures: loops and conditionals.
- Objectoriented programming (OOP) principles in C#.
- Lab: Writing and debugging C# programs.

Unit 3: Building Windows Applications

- Windows Forms applications with C#.
- Eventdriven programming and GUI design.
- Controls and user interface (UI) components.
- Handling user input and user interactions.
- Lab: Developing a simple Windows Forms application.

Unit 4: Web Development with ASP.NET

- Introduction to ASP.NET web development.
- Creating web forms and web applications.
- Serverside scripting with ASP.NET.
- Data access and database integration with ASP.NET.
- Lab: Building a basic ASP.NET web application.

Unit 5: Advanced Topics and Project

- Advanced .NET features and technologies (e.g., ASP.NET Core, WPF, Xamarin).
- Design patterns and best practices in .NET development.
- Building a complete .NET application project.
- Project presentations and peer review.
- Examining realworld .NET applications and case studies.

Text Books:

1. "CLR via C#" by Jeffrey Richter
2. "Pro C# 9 with .NET 5" by Andrew Troelsen and Philip Japikse
3. "C# in Depth" by Jon Skeet
4. "Entity Framework Core in Action" by Jon P Smith
5. "Pro .NET Memory Management" by Konrad Kokosa
6. "Design Patterns: Elements of Reusable Object-Oriented Software" by Erich Gamma, Richard Helm, Ralph Johnson, and John Vlissides

Reference Books:

1. "Code Complete: A Practical Handbook of Software Construction" by Steve McConnell.
2. "Clean Code: A Handbook of Agile Software Craftsmanship" by Robert C. Martin
3. "The Pragmatic Programmer: Your Journey to Mastery" by Dave Thomas andAndy Hunt
4. "Design Patterns: Elements of Reusable Object-Oriented Software" by ErichGamma, Richard Helm, Ralph Johnson, and John Vlissides

Web Resources:

1. https://www.c-sharpcorner.com/learn/c-sharp-asynchronous-programming
2. https://www.c-sharpcorner.com/article/tutorial-working-with-windows-forms- part-i/
3. https://dotnettutorials.net/course/csharp-dot-net-tutorials/
4. https://www.javatpoint.com/c-sharp-tutorial

SEMESTER IV

GENERIC VALUE-ADDED COURSE: JAVA SERVER FACES (JSF)

Course Code	Credit	Total Hours	Total Marks
GV2306	1	100	100

Learning Objectives:

1. To instruct students in the use of Java Server Faces for building web applications, including developing user interfaces and managing application state.
2. Teach students how to integrate JSF with Java EE technologies and databases, enabling them to create dynamic and data-driven web applications effectively.

Course Outcomes

	On the successful completion of the course, student will be able to:	
1	choose fundamental JSF concepts, such as managed Beans, Face lets, and component libraries, a foundational knowledge of the framework.	K1
2	understand and examine JSF applications, identifying performance bottle necks, usability issues, fostering strong analytical and problem solving skills.	K2,K4
3	identify the role of JSF in web development, including its integration with other Java technologies, to create robust, user-friendly, and maintainable web applications that align with industry best practices.	K3,K5

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** – Analyze , **K5-**Evaluate

Unit 1: Introduction to Java Server Faces (JSF)

- Overview of JSF and its significance in web development.
- Historical context and evolution of JSF.
- Key concepts: Components, managed beans, and navigation.
- Setting up the development environment for JSF.

Unit 2: JSF Architecture and Components

- Understanding the JSF life cycle.
- UI components and component tree structure.
- Data binding and form handling.
- Navigation in JSF applications.
- Lab: Building a simple JSF application.

Unit 3: Managed Beans and Data Management

- Introduction to managed beans in JSF.
- Bean scopes and their use cases.
- Data validation and conversion.
- Working with backing beans.
- Lab: Implementing managed beans in a JSF application.

Unit 4: Event Handling and Validation

- Event handling in JSF: Action and value change listeners.
- Input validation with JSF validators.
- Exception handling and error messages.
- Custom validation and conversion.
- Lab: Implementing event handling and validation in a JSF application.

Unit 5: Advanced Topics and Project

- Advanced JSF features (e.g., composite components, templates).
- Internationalization and localization in JSF.
- Building a complete JSF application project.
- Project presentations and peer review.
- Examining realworld JSF applications and case studies.

Reference Books:

1. "Core JavaServer Faces" by David Geary and Cay S. Horstmann

2. "Mastering JavaServer Faces 2.2" by Anghel

Web Resources:

1. https://docs.oracle.com/javaee/7/tutorial/jsf-intro.htm
2. (https://www.d.umn.edu/~tcolburn/cs4531/corejsf/)
3. (https://www.oreilly.com/library/view/javaserver-faces-20/9780071625098/)
4. (https://www.manning.com/books/javaserver-faces-in-action)

SEMESTER IV

GENERIC VALUE-ADDED COURSE: BASIC PYTHON

Course Code	Credit	Total Hours	Total Marks
GV2307	1	100	100

Learning Objectives:

1. Introduce the fundamentals of Python programming, covering syntax, data types, and basic control structures to enable them to write simple Python programs.
2. To teach how to solve elementary programming problems using Python, instilling problem-solving skills and the ability to apply Python concepts to practical tasks.

Course Outcomes

On the successful completion of the course, student will be able to:	
1	define modular programming, algorithm design, and learn problem-solving techniques in Python, enabling them to write efficient and effective Python code for various applications.	K1,K2
2	apply fundamental Python concepts, including variables, data types, and control structures, establishing a foundational knowledge of Python programming.	K3
3	analyze python code to identify errors, inefficiencies and potential improvements, fostering strong analytical and debugging skills	K4,K5

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** – Analyze , **K5-**Evaluate

Unit 1: Introduction to Python

- Introduction to Python programming
- Setting up the Python development environment
- Writing and running your first Python program
- Variables, data types, and basic operations
- Understanding Python's syntax and indentation
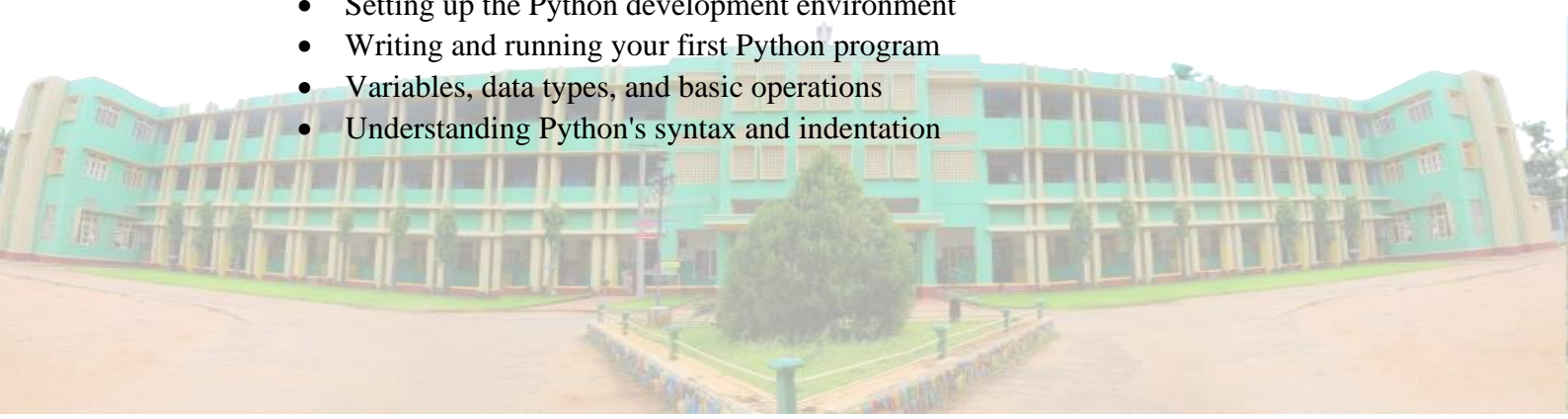
Unit 2: Control Structures and Functions

- Conditional statements (if, else if, else)
- Loops (for and while)
- Functions and their use
- Scope and lifetime of variables
- Practice exercises to reinforce learning

Unit 3: Data Structures in Python

- Lists, tuples, and dictionaries
- Manipulating and accessing elements in data structures
- Slicing and indexing
- Iterating through data structures
- Practical applications and use cases
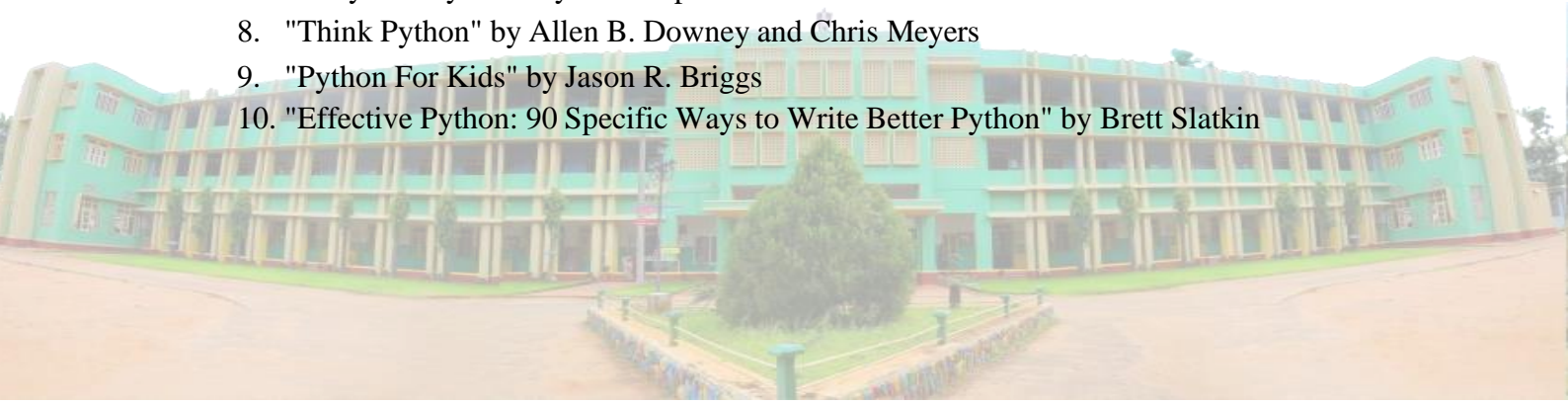
Unit 4: File Handling and Modules

- Reading and writing files in Python
- Understanding modules and libraries
- Importing and using built in modules
- Creating and using custom modules
- Real world examples of module usage

Unit 5: Error Handling and Basic Projects

- Handling exceptions and errors
- Debugging techniques
- Building simple Python projects
- Applying knowledge from previous units to solve problems
- Preparing for further Python learning

Textbooks:

1. "Python Crash Course" by Eric Matthes
2. "Automate the Boring Stuff with Python" by Al Sweigart
3. "Learning Python" by Mark Lutz
4. "Python Programming for the Absolute Beginner" by Michael Dawson
5. "Python Pocket Reference" by Mark Lutz
6. "Head-First Python" by Paul Barry
7. "A Byte of Python" by Swaroop C H
8. "Think Python" by Allen B. Downey and Chris Meyers
9. "Python For Kids" by Jason R. Briggs
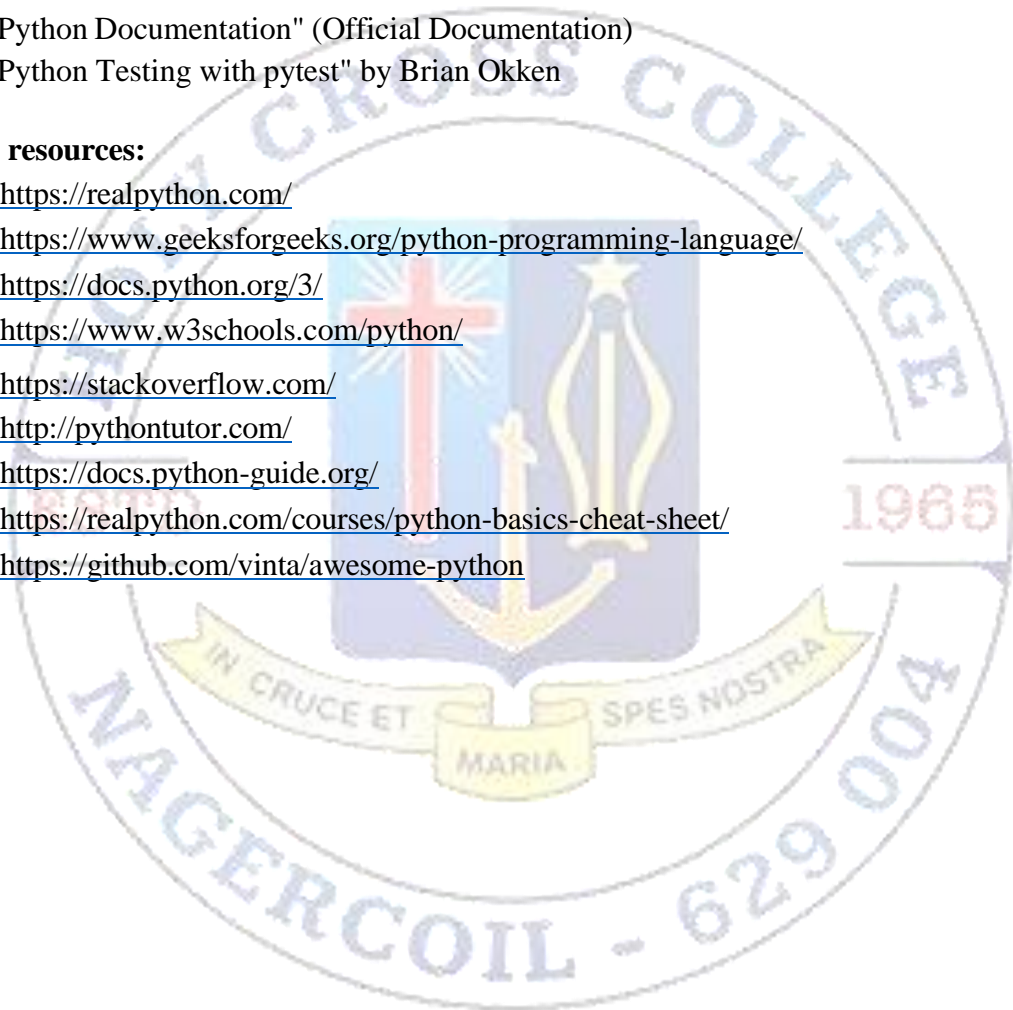10. "Effective Python: 90 Specific Ways to Write Better Python" by Brett Slatkin

References:

1. "Fluent Python" by Luciano Ramalho
2. "Python Cookbook" by David Beazley and Brian K. Jones
3. "Effective Python: 90 Specific Ways to Write Better Python" by Brett Slatkin
4. "Python in a Nutshell" by Alex Martelli
5. "Python Crash Course" by Eric Matthes
6. "Python Pocket Reference" by Mark Lutz
7. "Flask Web Development" by Miguel Grinberg
8. "Dive into Python 3" by Mark Pilgrim
9. "Python Documentation" (Official Documentation)
10. "Python Testing with pytest" by Brian Okken

Web resources:

1. https://realpython.com/
2. https://www.geeksforgeeks.org/python-programming-language/
3. https://docs.python.org/3/
4. https://www.w3schools.com/python/
5. https://stackoverflow.com/
6. http://pythontutor.com/
7. https://docs.python-guide.org/
8. https://realpython.com/courses/python-basics-cheat-sheet/
9. https://github.com/vinta/awesome-python

SEMESTER IV

GENERIC VALUE-ADDED COURSE: GOOGLE WEB TOOLKIT (GWT)

Course Code	Credit	Total Hours	Total Marks
GV2308	1	100	100

Learning Objectives:

1. To instruct students in using GWT for developing responsive web applications, including creating user interfaces, managing client-server communication, and handling events.
2. Teach students how to integrate GWT with java and other web technologies, enabling them to build interactive and cross-browser-compatible web applications effectively.

Course Outcomes

On the successful completion of the course, student will be able to:	
1	explain and understand the role of GWT in building web applications, the integration of Java and JavaScript, and GWT's advantages and limitations	**K1,K2**
2	apply key GWT concepts, such as GWT modules, widgets and event handling, establishing a foundational knowledge of GWT development.	**K3**
3	analyze GWT applications, identifying performance bottlenecks, code optimization opportunities, and effective user interface design, fostering strong analytical and problem solving skills.	**K4, K5**

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** – Analyze , **K5-**Evaluate

Unit 1: Introduction to Google Web Toolkit

- Overview of GWT and its role in web application development.
- Historical context and evolution of GWT.
- Key concepts: Java to JavaScript compilation, cross browser compatibility.
- Setting up the development environment for GWT.

Unit 2: GWT Widgets and Layout

- Understanding GWT widgets and layouts.
- Building interactive user interfaces with GWT widgets.
- Event handling and UI components.
- Styling GWT applications with CSS.
- Lab: Creating a basic GWT user interface.

Unit 3: GWT Remote Procedure Calls (RPC)

- Implementing client server communication with GWT RPC.
- Creating GWT services and server side code.
- Serialization and data transfer in GWT.
- Asynchronous calls and error handling.
- Lab: Building a GWT application with RPC.

Unit 4: GWT Internationalization and Localization

- Internationalization (i18n) and localization (l10n) in GWT.
- Managing resource bundles and localized messages.
- Implementing language and region specific features.
- Lab: Adding internationalization support to a GWT application.

Unit 5: GWT Advanced Topics and Project

- GWT code splitting and optimization techniques.
- Integrating third party libraries and components.
- Building a complete GWT based web application.
- Project presentations and peer review.
- Final project: Developing a GWT web application.

Text books:

1. "GWT in Action" by Robert Hanson, Adam Tacy, and Jason Essington
2. "Beginning Google Web Toolkit: From Novice to Professional" by Bram Smeets and Arun Gupta
3. "HTML and CSS: Design and Build Websites" by Jon Duckett
4. "Learning Web Design: A Beginner's Guide to HTML, CSS, JavaScript, and Web Graphics" by Jennifer Robbins
5. "HTML5 Pocket Reference" by Jennifer Niederst Robbins

Websites for learning GWT:
1. [http://www.gwtproject.org]
2. [https://github.com/gwtproject/gwt]

Websites for learning HTML:

1. [https://developer.mozilla.org/en-US/docs/Web/HTML]
2. [https://www.w3schools.com]

SEMESTER IV

GENERIC VALUE-ADDED COURSE: CYBER SECURITY

Course Code	Credit	Total Hours	Total Marks
GV2309	1	100	100

Learning Objectives:

1. Equip students with the knowledge and skills to identify and address common cyber security threats and vulnerabilities, including malware, phishing and network attacks.
2. Teach students to apply security best practices and strategies to protect information systems, data, and networks, fostering the ability to create a secure computing environment.

Course Outcomes

On the successful completion of the course, student will be able to:		
1	remember and understand the importance of compliance, ethical hacking, and equipping them to design and maintain secure information systems that align with industry standards and regulations.	**K1, K2**
2	apply essential cyber security concepts, including encryption, access controls, and security policies, to establish a foundational knowledge of the field.	**K3**
3	analyze security threats, vulnerabilities, and incident response strategies, enabling them to identify and mitigate cybersecurity risks effectively.	**K4, K5**

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** – Analyze, **K5-**Evaluate

Unit 1: Introduction to Cybersecurity

- Overview of Cybersecurity
- Importance of Cybersecurity
- Key Terminology
- Cybersecurity Frameworks and Standards

Unit 2: Cyber Threats and Attack Vectors

- Types of Cyber Threats
- Social Engineering Attacks
- Malware and Viruses
- Network Attacks
- Web Application Security

Unit 3: Securing Computer Systems and Networks

- Password Security
- Encryption and Cryptography
- Network Security
- Endpoint Security
- Patch Management

Unit 4: Incident Response and Case Studies

- Incident Response Planning
- Cybersecurity Incidents and Breaches
- Case Studies and Analysis
- Legal and Ethical Considerations

Unit 5: Risk Management and Future Trends

- Cyber Risk Assessment
- Risk Mitigation Strategies
- Emerging Cybersecurity Trends
- Career Opportunities in Cybersecurity
- Ethical Hacking and Penetration Testing

Textbooks:
1. "Computer Security: Principles and Practice" by William Stallings and Lawrie Brown
2. "Network Security Essentials" by William Stallings
3. "Hacking: The Art of Exploitation" by Jon Erickson
4. "Security Engineering: A Guide to Building Dependable Distributed Systems" by Ross J. Anderson
5. "CISSP All-in-One Exam Guide" by Shon Harris and Fernando Maymí
6. "Web Application Security: A Beginner's Guide" by Bryan Sullivan and Vincent Liu

Reference Books:

1. "Hacking: The Art of Exploitation" by Jon Erickson
2. "Metasploit: The Penetration Tester's Guide" by David Kennedy, Jim O'Gorman, Devon Kearns, and Mati Aharoni
3. "The Web Application Hacker's Handbook" by Dafydd Stuttard and Marcus Pinto
4. "Network Security Essentials" by William Stallings
5. "Zero Trust Networks: Building Secure Systems in Untrusted Networks" by Evan Gilman and Doug Barth

Web Resources:

1. https://cyberscoop.com/
2. https://krebsonsecurity.com/
3. https://thehackernews.com/
4. https://www.darkreading.com/
5. https://isc.sans.edu/