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**Bunts Sangha's
S.M. Shetty College of Science, Commerce and Management Studies (Autonomous)
Hiranandani Gardens, Powai**

Bachelor of Science Information Technology

**B. Sc.(Information Technology)
(Programme Code: SMSUGIT05)**

First Year Course Structure

First Year Syllabus

New Education Policy (NEP) 2020

(To be implemented from the Academic Year 2024-2025)

Approved in the Academic Council Meeting held on 24.06.2024

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INTRODUCTION OF THE PROGRAMME

The Bachelor of Science in Information Technology (BSc IT) program is meticulously crafted to provide a comprehensive education in the ever-evolving field of Information Technology. Combining theoretical foundations with practical applications, we aim to equip students with the knowledge and skills necessary to thrive in various tech careers. Our focus is on fostering innovation, critical thinking, and problem-solving abilities, ensuring that graduates are ready to meet the challenges of a dynamic technological landscape.

The mission of our BSc IT program is to deliver high-quality education that emphasizes technical proficiency, ethical responsibility, and social awareness. We are dedicated to creating a learning environment that encourages students to engage in innovative research and develop practical solutions to real-world problems. Our vision is to be recognized as a leader in IT education, known for our commitment to academic excellence, cutting-edge research, and meaningful community engagement.

Our curriculum is designed to be both rigorous and flexible, covering a broad range of IT disciplines such as programming, software development, systems and network administration, database management, cybersecurity, and web development. By offering a diverse array of courses, we ensure that students gain a solid foundation in the core areas of IT while also having the flexibility to pursue their specific interests. The program is supported by state-of-the-art laboratories, research centers, and collaborative spaces that provide hands-on experience and foster teamwork and innovation.

The BSc IT program features a diverse and experienced faculty dedicated to mentoring students and guiding them toward academic and professional success. Our faculty members, experts in various IT fields, bring valuable insights and real-world experience into the classroom through active involvement in research and industry projects. The program offers numerous opportunities for internships, industry partnerships, and participation in IT competitions, enriching the learning experience and preparing students for successful careers.

Graduates are well-prepared for a wide range of IT roles, including software developers, network administrators, cybersecurity analysts, database administrators, IT consultants, and web developers. We are proud of our alumni's significant contributions to the tech industry and beyond. By joining our BSc IT program, you become part of a vibrant community dedicated to shaping the future of technology and making a positive societal impact.

PROGRAMME OUTCOME
B.ScIT

	Programme Outcome
PO1	Graduates will possess a strong foundation in IT concepts and practices, proficient in designing, implementing, and managing solutions in programming, database management, networking, cybersecurity, and software development.
PO2	Graduates will be able to analyze complex problems, identify computing requirements, and apply appropriate IT solutions. They will demonstrate critical thinking and innovative problem-solving abilities in diverse technical scenarios.
PO3	Graduates will be skilled in both written and verbal communication, essential for collaborating effectively in multidisciplinary teams. They will be capable of conveying technical information clearly to various stakeholders and working cohesively in team environments.
PO4	Graduates will understand and commit to professional, ethical, legal, security, and social responsibilities. They will be aware of the broader impacts of technology on society and the environment, and will practice responsible decision-making.
PO5	Graduates will recognize the importance of continuous learning and professional development. They will be adaptable to emerging technologies and evolving industry standards, maintaining their relevance and competence in the fast-paced IT field.

B.ScIT
FIRST YEAR SEMESTER I
COURSE STRUCTURE

COURSE CODE	COURSE TITLE	COURSE CREDIT
MAJOR MANDATORY (CORE) VERTICAL A		
UIT1.1	OOP with C++	2
UIT1.2	Database Management Systems	2
UIT1.3	OOP with C++ and Database Management Systems Practical	2
OPEN/ GENERIC ELECTIVE (OE/GE) VERTICAL B		
UOE1.1	Principles of Management	2
UOE1.4	Introduction to Financial Market	2
VSC (VOCATIONAL SKILL COURSES) VERTICAL C		
UIT1.4	Online Design Tools	2
SEC (SKILL ENHANCEMENT COURSE) VERTICAL D		
UIT1.5	Discrete Mathematics	2
AEC (ABILITY ENHANCEMENT COURSE) VERTICAL E		
UIT1.6	Effective Communication in English	2
IKS (INDIAN KNOWLEDGE SYSTEM) VERTICAL E		
UIT1.8	Computing Science in Ancient India	2
VEC (VALUE EDUCATION COURSE) VERTICAL E		
UIT1.7	Green Computing	2
CO-CURRICULAR (CC) VERTICAL F		
TOTAL CREDITS		22

B.Sc.IT
FIRST YEAR SEMESTER II
COURSE STRUCTURE

COURSE CODE	COURSE TITLE	COURSE CREDIT
MAJOR MANDATORY (CORE)		
VERTICAL A		
UIT2.1	Python Programming	2
UIT2.2	Web Technologies	2
UIT2.3	Python Programming and Web Technologies Practical	2
MINOR		
VERTICAL B		
UIT2.4	Digital Electronics	2
OPEN/ GENERIC ELECTIVE (OE/GE)		
VERTICAL C		
UOE2.7	Basics of Accounting	2
UOE2.10	Organizational Behaviors	2
VSC (VOCATIONAL SKILL COURSES)		
VERTICAL D		
UIT2.5	Robotic Process Automation	2
SEC (SKILL ENHANCEMENT COURSE)		
VERTICAL E		
UIT2.6	Numerical Methods	2
AEC (ABILITY ENHANCEMENT COURSE)		
VERTICAL E		
UIT2.7	English Technical Writing Skills	2
VEC (VALUE EDUCATION COURSE)		
VERTICAL E		
UIT2.8	Lifestyle for Holistic Health	2
CO-CURRICULAR (CC)		
VERTICAL F		
TOTAL CREDITS		22

Semester I

Course Code	UIT1.1					
Name of the Course	OOP with C++					
Name of Board of Studies	Information Technology and Data Science					
Semester	I					
Number of Credits	02					
Number of Lectures	30					
Lecture Duration	60 Minutes					
Total Marks:	CE	20	SEE	30	Total	50

Learning Objectives of the Course

Sr. No.	Objectives
LOC1	To explain the basic concepts of Object-Oriented Programming and procedural programming.
LOC2	To program using C++ features such as composition of objects, overloading concepts, inheritance and polymorphism.
LOC3	To develop C++ applications using object-oriented techniques.

Learning Outcomes of the Course

Sr.No.	Outcomes
CO1	Learners will be able to understand the fundamentals of Objects Oriented Programming.
CO2	Learners will be able to use the file handling, inheritance, polymorphism to develop the program by reusability approach.
CO3	Learners will be able to develop the programs using C++ language constructs.

Module. No	Details	No. of Lectures
1	Module 1: Object Oriented Programming and functions	10
	Object Oriented Programming (OOP): Introduction, OOP Vs POP, Token Expressions and Control Structures, Benefits and Application of OOP. What is C++?, More C++ statements, Structure of C++ program, Compilation and linking, Tokens, Keywords, Identifiers and constants, Basic Data Types, User Defined data types, Derived Data types, Symbolic Constants, Type compatibility, Declaration of variables, Manipulators, Type cast Operator, Expressions and their types, Implicit Conversion. Functions in C++: Main Function, Function Prototyping, Inline Function, Default arguments, Constant arguments, Function Overloading, Friend and Virtual Function, Math library function	
	Module 2: Classes, Objects, Constructors and Destructors	10
2	Classes and Objects: Specifying a class, Defining Member function, C++ Program with Class, Private member function, Static data members and	

	member functions, arrays within class, Memory allocation of objects, Array of objects, Pointer to members, Constant Member functions Constructors and Destructors: Concepts, Parameterized Constructor, Multiple Constructors in Class, Constructor with default arguments, Dynamic Initialization of Objects, Constructor with default arguments, Copy Constructor, Dynamic Constructor, Destructors, Inheritance-Single, Multilevel, Multiple, Hierarchical, Hybrid Inheritance, Virtual Base Class, Abstract Class, Constructor and Derived Classes, Polymorphism	
	Module 3: Pointers, Virtual Functions, Polymorphism and File Handling in C++	10
3	Pointers, Virtual Functions and Polymorphism: Pointers to objects, this pointer, Pointers to derived classes, Virtual Function, Pure Virtual Functions, C++ Stream Classes, Unformatted I/O Operations, Formatted Console I/O operations File Handling in C++: Introduction, File Streams, Opening and Closing a File, File Opening Modes Checking End of File, Random Access in File, Command Line Arguments, Working with Binary Mode Error Handling	
	TOTAL	30 Lectures

Reference Books:

1. Object Oriented Programming in C++ by E Balagurusamy, Tata McGraw- Hill- 8th Edition, 2020
2. C++ Programming: An Object-Oriented Approach, Behrouz A. Forouzan, Richard F. Gilberg, McGraw-Hill Education-1st edition, 2020
3. Object-oriented Programming C++ Simplified, Hari Mohan Pandey, University Science Press, 1st Edition, 2017
4. Object-Oriented Programming in C++, Robert Lafore, Sams- 4th Edition, 2002
5. Programming with ANSI C++, Bhushan Trivedi, Oxford University Press- 2nd Edition, 2012
6. Demystified Object- Oriented Programming with C++, Dorothy R. Kirk, Packt Publishing Lt-1st Edition, 2021
7. C++ How to Program, Paul Deitel, Harvey Deitel, Pearson Education-10th Edition, 2017

Course Code	UIT1.2					
Name of the Course	Database Management Systems					
Name of Board of Studies	Information Technology and Data Science					
Semester	I					
Number of Credits	02					
Number of Lectures	30					
Lecture Duration	60 Minutes					
Total Marks:	CE	20	SEE	30	Total	50

Learning Objectives of the Course

Sr. No.	Objectives
LOC1	To present an introduction to database management systems, with an emphasis on how to organize, maintain and retrieve information efficiently and effectively from a DBMS.
LOC2	To design different Data Models.
LOC3	To understand SQL to retrieve data and the concept of redundancy.
LOC4	To create, manipulation and querying of data in databases.

Learning Outcomes of the Course

Sr. No.	Outcomes
CO1	Learners will understand the fundamental elements of relational database management systems, relational algebra and SQL.
CO2	Learners will be able to create and design ER-models to represent simple database application scenarios.
CO3	Learners will be able to create, manipulate, query and backup the databases with features of SQL.

Module. No	Details	No. of Lectures
1	Module 1: Architecture, Conceptual modeling and database design	10
	<p>Database System concept and Architecture: Data versus Information, Introducing the Database, Role and Advantages of the DBMS, Relational Model, Evolution of File System Data Processing, Problems with File System Data Processing, Database Systems, Degrees of Data Abstraction.</p> <p>Conceptual modeling and database design: Data modeling using the Entity Relationship model (ER). The enhanced entity relationship model. Relational database design by ER and EER model. Practical database design methodology and use of UML diagrams.</p>	

2	Module 2: Normalization and Structured Query Language(SQL)	10
	<p>Normalization of Database Tables: Database Tables and Normalization, The Need for Normalization, The Normalization Process, Normal Forms, Surrogate Key Considerations.</p> <p>Structured Query Language (SQL):Introduction to SQL, SELECT Statement, FROM Clause, ORDERBY Clause, WHERE Clause, Aggregate Functions, Subqueries, SQL Functions, Relational Set Operators, Keys and its types, Constraints and its types.</p>	
3	Module 3: Advanced SQL and Transaction	10
	<p>Advanced SQL: Data Definition Commands, Creating Table Structures, Altering Table Structures, Data Manipulation Commands, Virtual Tables: Creating and using Views, triggers, joining database tables and schema modification.</p> <p>Transaction management and concurrency control and recovery: Introduction to transaction processing concepts and theory. Concurrency control technique. Database recovery technique.</p>	
	TOTAL	30 Lectures

Reference Books:

1. Database Management Systems, Ramakrishnan, Gehrke, McGraw- Hill, 3rd Edition, 2007
2. Database System Concepts, Silberschatz, Korth, Sudarshan, McGraw Hill, 5th Edition, 2006
3. Database Systems: Design implementation and management., Carlos Coronel, Steven Morris, Peter Rob, Cengage Learning, 9th Edition, 2010
4. Fundamentals of Database Systems, Ramez Elmasri, Shamkant B Navathe, Pearson, 6th Edition, 2010

Course Code	UIT1.3					
Name of the Course	OOP with C++ and Database Management Systems Practical					
Name of Board of Studies	Information Technology and Data Science					
Semester	I					
Number of Credits	04					
Number of Lectures	60					
Lecture Duration	60 Minutes					
Total Marks:	CE	20	SEE	30	Total	50

Learning Objectives of the Course

Sr. No.	Objectives
LOC1	To Develop the ability to write SQL queries to perform CRUD operations on databases.
LOC2	To Learn the process of designing and implementing relational database schemas based on given requirements.
LOC3	To understand the fundamentals of Objects Oriented Programming.
LOC4	To develop the programs using constructors.
LOC5	To use the inheritance, polymorphism to develop the program by reusability approach.

Learning Outcomes of the Course

Sr. No.	Outcomes
CO1	Learners will be able to create databases, tables, views, indexes, and manage database objects effectively.
CO2	Learners will be able to Demonstrate proficiency in writing SQL queries to retrieve, manipulate, and manage data stored in a database, basic CRUD operations (Create, Read, Update, Delete), as well as complex queries involving joins, subqueries, and aggregate functions.
CO3	Learners will be able to explain the difference between object-oriented programming and procedural programming.
CO4	Learners will be able to create programs using more advanced C++ features such as composition of objects, operator overloads, dynamic memory allocation, inheritance and polymorphism.
CO5	Learners will be able to develop C++ applications using object-oriented techniques.

Module No	Details	No. of Lectures
	Module 1	
1	Draw E-R diagram and convert entities and relationships to relation table for a given scenario a. Bank b. College	30
2	Write SQL query for given problem statement: a. Viewing all databases b. Creating a Database c. Viewing all Tables in a Database	
3	Perform the following Operations: a. Using CREATE statement b. Using INSERT statement c. Using SELECT statement	
4	Perform the following Operations: a. Using UPDATE statement b. Using ALTER statement c. Using RENAME statement d. Using Where Clause	
5	Perform the following Operations: a. Using DROP statement b. Using DELETE statement c. Using TRUNCATE statement	
6	Creating table with constraints: a. NOTNULL b. UNIQUE c. PRIMARY KEY d. FOREIGN KEY	
7	Restricting and sorting data a. Using DISTINCT, IN, AS, SORT, LIKE, ISNULL, OR b. Using Group By, Having clause, Order By clause	
8	Aggregate and Mathematical functions: a. AVG, MIN, MAX, SUM, COUNT b. Math Functions	
9	Working with SQL Functions a. Date Functions b. String Functions	
10	Subqueries a. With IN clause b. With EXISTS clause c. Handling NULL values	

11	Views a. Creating view b. Dropping view c. Selecting from a view	
12	Retrieving Data from Multiple Table: a. Joining Tables b. Aliases for Table Name	
13	TCL Statements: a. Using COMMIT statement b. Using ROLLBACK statement c. Creating SAVEPOINTS	
14	Database Trigger a. Using CREATE or REPLACE TRIGGER	
15	Perform the following a. DCL Statement- Granting And Revoking Permissions b. Backing up / Restoring Database	
	Module 2	
1	a. Write a C++ program to create a simple calculator. b. Write a C++ program to convert seconds into hours, minutes and seconds.	
2	a. Write a C++ program to find the volume of a square, cone, and rectangle. b. Write a C++ program to find the greatest of three numbers.	
3	a. Write a C++ program to find the sum of even and odd n natural numbers. b. Write a C++ program to generate all the prime numbers between 1 and n, where n is a value supplied by the user.	
4	a. Write a C++ program using classes and object Student to print the name of the student, roll_no. Display the same. b. Write a C++ program for Structure bank employee to print the name of the employee, account_no. & balance. Display the same also display the balance after withdraw and deposit	
5	a. Write a C++ Program to design a class having a static member function named showcount() which has the property of displaying the number of objects created of the class b. Write a C++ Program to design a class to input some data and print the same with a static member function.	
6	a. Write a Program to find Maximum out of Two Numbers using the friend function. (Note: Here one number is a member of one class and the other number is a member of some other class.) b. Write a C++ Program using a copy constructor to copy data of an object to another object.	
7	a. Write a C++ program to design a class representing complex numbers and having the functionality of performing addition & multiplication of two complex numbers using operator overloading. b. Write a C++ program to access members of a STUDENT class	30

	using pointer to object members	
8	<p>a. Write a C++ Program to generate Fibonacci Series by using Constructor to initialize the Data Members.</p> <p>b. Write a C++ Program to generate Reverse of the given number Series by using Constructor to initialize the Data Members.</p>	
9	<p>a. Write a C++ Program illustrating how the constructors are implemented and the order in which they are called when the classes are inherited. Use three classes named alpha, beta, gamma such that alpha, beta are base class and gamma is derived class inheriting alpha & beta.</p> <p>b. Write a C++ Program to illustrate the Function Overloading concepts for addition of numbers function.</p>	
10	<p>a. Write a C++ Program to design a student class representing student roll no. and a test class (derived class of student) representing the scores of the student in various subjects and sports class representing the score in sports. The sports and test class should be inherited by a result class having the functionality to add the scores and display the final result for a student.</p> <p>b. Write a C++ Program that illustrates single inheritance.</p>	
11	<p>a. Write a C++ Program that illustrates multiple inheritance</p> <p>b. Write a C++ Program that illustrates multilevel inheritance.</p>	
12	<p>a. Write a C++ program to maintain the records of a person with details (Name and Age) and find the eldest among them. The program must use this pointer to return the result.</p> <p>b. Write a C++ program to maintain the records of an employee with details (Emp_id, Name and Salary) and print the same. The program must use this pointer to return the result.</p>	
13	<p>a. Write a C++ program illustrating the use of virtual functions in class.</p> <p>b. Write a C++ Program to demonstrate the use of static data member in class.</p>	
14	<p>a. Write a C++ program to design a class representing the information regarding digital library (books, tape: book & tape should be separate classes having the base class as media). The class should have the functionality for adding new item, issuing, deposit etc. the program should use the runtime polymorphism.</p> <p>b. Write a C++ program to design a class pig, dog, animal by creating objects and override the animalSound() method.</p>	
15	<p>a. Write a C++ program to copy the contents of one file to another.</p> <p>b. Write a C++ program to implement I/O operations on characters. I/O operations includes inputting a string, Calculating length of the string, Storing the String in a file, fetching the stored characters from it, etc.</p>	
	Total	60 Lectures

Course Code	UOE1.1					
Name of the Course	Principles of Management					
Name of Board of Studies	Management					
Semester	I					
Number of Credits	02					
Number of Lectures	30					
Lecture Duration	60 Minutes					
Total Marks:	CE	20	SEE	30	Total	50

Learning Objectives of the Course

Sr. No.	Objectives
LOC1	To comprehend the core principles of management, enabling efficient organization of resources and attainment of organizational goals.
LOC2	To comprehend the development of critical thinking skills for evaluating management practices and making informed decisions in diverse business environments.

Learning Outcomes of the Course

Sr. No.	Outcomes
CO1	Learners will be able to understand the application of fundamental management principles by effectively organizing resources and contributing to the attainment of organizational goals.
CO2	Learners will be able to apply the critical thinking skills, enabling the evaluation and implementation of management practices conducive to success in diverse business contexts.
CO3	Learners will be able to demonstrate the ability to analyze complex business challenges through the application of strategic management principles, fostering innovative solutions and contributing to organizational growth and competitiveness.

Module. No	Details	No. of Lectures
1	Module 1: Foundations of Management	10
	<ul style="list-style-type: none"> ● Management Concept, Significance, Role & Skills, Levels of Management. ● Planning: Meaning, Importance, Elements, Process. ● Decision Making: Meaning, Importance, Process, Techniques of Decision Making 	
2	Module 2: Structuring Organizations	10
	<ul style="list-style-type: none"> ● Organizing: Concepts, Meaning, Advantages and Limitations. ● Departmentation: Meaning, Basis and Significance 	

	<ul style="list-style-type: none"> ● Span of Control: Meaning, Factors affecting span of control, Centralization vs Decentralization 	
3	Module 3: Managing Operations	10
	<ul style="list-style-type: none"> ● Directing: Meaning, Definition, Process, and importance of direction. ● Leadership: Meaning, Styles, and Qualities of a Good Leader. ● Coordination: Meaning, Definition, and importance of coordination, ● Controlling: Meaning, Process, and Techniques of Controlling. ● Groups: Types & Process of formation 	
	TOTAL	30 Lectures

Reference Books:

1. Principles of Management, Tripathi Reddy, Tata Mc. Grew Hill, 2015
2. Management Text and Cases, VSP Rao, Excel Books, Delhi, 2009
3. Management concepts and OB, P.S Rao and N.V Shah, Ajab Pustakalaya, 2015
4. Essentials of Management, Koontz II & W, Mc. Grew Hill, New York, 2020
5. Principles of Management Text and Cases, Dr. M Sakthivel Murugan, New Age Publications, 2008

Course Code	UOE1.4					
Name of the Course	Introduction to Financial Markets					
Name of Board of Studies	Accountancy and Finance					
Semester	I					
Number of Credits	02					
Number of Lectures	30					
Lecture Duration	60 Minutes					
Total Marks:	CE	20	SEE	30	Total	50

Learning Objectives of the Course

Sr. No.	Objectives
LOC1	Understand the structure and functioning of financial markets,
LOC2	Understand the significance and instrument of Money Market and Capital market and concept of financial services.

Learning Outcomes of the Course

Sr. No.	Outcomes
CO1	Learners will be able to understand the structure and importance of the Indian financial system
CO2	Learners will be able to apply the knowledge of the Money Market and Capital Market structure and instrument in work.
CO3	Learners will be able to analyze types of financial services and problem of Indian financial services

Module. No	Details	No. of Lectures
1	Indian Financial System	10
	Functions of Financial System. Financial concepts Meaning and Characteristics of Financial Markets, types, structure and function of Financial markets, role of financial market in Economic Development	
2	Money Market and Capital Market	10
	Introduction, Meaning, Structure & Characteristics of the Indian Money Market and Capital Market, instruments of Money Market and Capital Market, Role of RBI and SEBI in financial markets.	
3	Indian Financial Services	10
	Meaning, Objectives of financial services, types of financial services, importance, characteristics, problems in financial services sector in India, Framework of Financial institutions in India.	
	TOTAL	30 Lectures

Reference Books:

- 1) Financial Markets and Institutions by Frederic S. Mishkin and Stanley Eakins, 2018
- 2) Financial Markets and Services, E. Gordon and K. Natarajan, 2016
- 3) Indian Financial Market: A Complete Guide" by M. R. Vasudevan,
- 4) Indian Financial System by M. Y. Khan, 2015
- 5) Financial Markets and Institutions in India by Praveen Kumar Bhalla,2017

Course Code	UIT1.4					
Name of the Course	Online Design Tools					
Name of Board of Studies	Information Technology and Data Science					
Semester	I					
Number of Credits	02					
Number of Lectures	60					
Lecture Duration	60 Minutes					
Total Marks:	CE	20	SEE	30	Total	50

Learning Objectives of the Course

Sr. No.	Objectives
LOC1	To gain proficiency in using Canva to create visually appealing designs for various purposes, including graphics, presentations, posters, and social media posts.
LOC2	To understand and effectively utilize the comprehensive suite of post- production tools offered by DaVinci Resolve.
LOC3	To handle and use Animation Desk and learn the fundamental principles of animation.

Learning Outcomes of the Course

Sr. No.	Outcomes
CO1	Learners will demonstrate proficiency in using Canva to create a wide range of designs, including graphics, presentations, posters, and social media posts.
CO2	Learners will be able to understand and effectively use DaVinci Resolve's comprehensive set of post-production tools to manage their own video editing projects from start to finish.
CO3	Learners will be able to create engaging animations with smooth motion, proper timing, and synchronized audio.

Module. No	Details	No. of Lectures
	<p>Module 1: Canva</p> <p>1. Introduction to Canva and Account Setup</p> <ul style="list-style-type: none"> Explore the features and capabilities of Canva by navigating through the interface. <p>2. Graphics for Social Media</p> <ul style="list-style-type: none"> Create graphics for three different social media platforms (e.g., Facebook, Instagram, Twitter) using Canva. Experiment with different layouts, typography, and color schemes suitable for each platform. 	20

	<p>3. Poster Design</p> <ul style="list-style-type: none">• Design a poster using Canva's templates and design elements. Check the layout, typography, color theory, and imagery to create an eye-catching poster. <p>4. Presentation Slides</p> <ul style="list-style-type: none">• Utilize Canva's presentation templates and design elements effectively to create visually appealing slides. <p>5. Typography Basics</p> <ul style="list-style-type: none">• Create a typography-focused design using Canva, emphasizing different font styles, sizes, and formatting options. <p>6. Image Editing and Arrangement</p> <ul style="list-style-type: none">• Uploading images to Canva and practicing editing it using built-in editing tools. Experiment with cropping, resizing, and adding filters. <p>7. Crafting Marketing Materials</p> <ul style="list-style-type: none">• Design marketing materials such as a flyer, brochure, and business card using Canva. Explore various templates and design elements suitable for each marketing collateral type. <p>8. Story Design for Social Media</p> <ul style="list-style-type: none">• Create a series of Instagram or Facebook stories using Canva. Utilize Canva's story templates and design elements to craft engaging and visually appealing story sequences. <p>9. Customizing Designs from Scratch</p> <ul style="list-style-type: none">• Design a custom graphic or visual from scratch using Canva. Experiment with different design elements, layouts, and color schemes to create a unique and personalized design. <p>10. Effective Use of Templates</p> <ul style="list-style-type: none">• Choose a design template from Canva's library and customize it to suit your needs. Modify existing templates to match your design preferences and requirements.	
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	Module 2: Animation Desk	20
	<ol style="list-style-type: none"> 1. Interface Navigation: <ul style="list-style-type: none"> ● Familiarize yourself with the Animation Desk interface to learn where essential tools and functions are located. 2. Workspace Setup: <ul style="list-style-type: none"> ● Customize your workspace according to your preferences. Understand how to optimize the environment for efficient animation creation. 3. Basic Animation Principles: <ul style="list-style-type: none"> ● Create a simple animation demonstrating principles like squash and stretch, anticipation, and follow-through. 4. Media Management: <ul style="list-style-type: none"> ● Import various media assets (images, audio files) into your project. Learn how to organize and manage different types of media within the Animation Desk. 5. Drawing Techniques: <ul style="list-style-type: none"> ● Experiment with different drawing tools and techniques. Understand the capabilities and limitations of the drawing tools available. 6. Frame-by-Frame Animation: <ul style="list-style-type: none"> ● Create a short animation using frame-by-frame drawing and editing. Master the process of creating smooth animations frame by frame. 7. Onion Skinning: <ul style="list-style-type: none"> ● Utilize onion skinning to reference previous and upcoming frames. Learn how to use onion skinning effectively for accurate animation. 8. Keyframe Animation: <ul style="list-style-type: none"> ● Use keyframes to animate objects along a motion path. Understand the concept of keyframing and its application in creating complex animations. 9. Audio Integration: <ul style="list-style-type: none"> ● Add sound effects and background music to your animation. Learn how to synchronize audio with 	

	<p>animation for a more immersive experience.</p> <p>10. Exporting and Sharing:</p> <ul style="list-style-type: none"> ● Export your animation in various formats (e.g., GIF, video). Understand the different export options available and how to share your animations with others. 	
	Module 3: DaVinci Resolve	20
	<p>1. Navigating the User Interface in DaVinci Resolve</p> <ul style="list-style-type: none"> ● Familiarize with the layout, panels, and tools available in DaVinci Resolve. <p>2. Project Setup and Configuration</p> <ul style="list-style-type: none"> ● Create a new project in DaVinci Resolve and configure project settings according to your intended output format and resolution. <p>3. Basic Editing Tools and Techniques</p> <ul style="list-style-type: none"> ● Import media into a project and practice basic editing techniques such as cutting, trimming, and rearranging clips on the timeline. <p>4. Timeline Editing: Trimming, Cutting, and Rearranging Clips</p> <ul style="list-style-type: none"> ● Perform detailed timeline editing, including ripple, roll, slip, and slide edits. Practice using the blade tool and other trimming techniques. <p>5. Adding Transitions and Effects</p> <ul style="list-style-type: none"> ● Add transitions between clips and apply various effects to enhance the visual appeal. <p>6. Working with Audio: Mixing, Levels, and Effects</p> <ul style="list-style-type: none"> ● Import audio tracks and adjust levels, pan, and apply basic audio effects. <p>7. Creating Motion Graphics and Visual Effects</p> <ul style="list-style-type: none"> ● Learn to use keyframes, masks, and nodes to create simple animations and visual effects. <p>8. Compositing and Green Screen (Chroma Key) Techniques</p>	

	<ul style="list-style-type: none"> ● Perform chroma keying to replace green screen backgrounds with different visuals. Practice compositing multiple layers to create complex scenes. <p>9. Advanced Audio Editing and Mixing</p> <ul style="list-style-type: none"> ● Explore advanced audio editing techniques, including using equalizers, compressors, and audio plugins. <p>10. Export Settings and Formats: Rendering and Exporting Projects</p> <ul style="list-style-type: none"> ● Learn to export your project using different settings and formats. Practice rendering a project for different delivery platforms (e.g., YouTube, broadcast, film). 	
	TOTAL	60 Lectures

Reference Books:

1. Canva Made Simple: A step-by-step guide from getting started to designing like a pro, Angela Feser.
2. Canva like a pro by Ash Thompson.
3. Gesture Drawing for Animation, Walt Stanchfield.
4. The Beginner's Guide to DaVinci Resolve, Paul Saccone and Dion Scoppettuolo, Blackmagicdesign
5. The Definitive Guide to DaVinci Resolve, Paul Saccone and Dion Scoppettuolo, Blackmagicdesign

Course Code	UIT1.5					
Name of the course	Discrete Mathematics					
Name of Board of Studies	Mathematics and Statistics					
Semester	I					
Number of credits	2					
Number of lectures	30					
Lecture duration	60 minutes					
Total marks	CE	20	SEE	30	Total Marks	50

Learning Objectives of the Course

Sr. No.	Objectives
LOC1	Use mathematically correct terminology, notations and symbols.
LOC2	Apply logical reasoning to solve problems and construct counter examples.
LOC3	Familiarize prospective learners with mathematical structures that are fundamentally discrete and counting techniques.

Learning Outcomes of the Course

Sr. No.	Outcomes
	After Completing this course student will be able to:
CO1	Analyze Logical Proposition via Truth table, Understand Sets and Perform operations and Algebra on Sets and Determine Properties of relations and identify equivalence relation and partial order relation and sketch relation.
CO2	Identify Functions and determine their properties and Solve different problems related to Counting principles
CO3	Understand the concepts of probability and develop ability to analyze and interpret the data and Construct graphs and trees, which are widely used in software.

Module No.	Details	No. of Lectures
1	Module 1: Logic, Set Theory and Relations	10
	Logic & Set Theory: Introduction, Logic, Logical form and logical Equivalence, Conditional Statements, Sets and Elements, Subsets, Venn Diagrams, Set Operations, Algebra of Sets, Finite Sets, Counting Principle, Classes of Sets, Power Sets, Partitions Relations: Introduction, Cartesian Product, Relation, Types of Relations, Equivalence Relation, Equivalence Class, Partial Order Relations, Linear Ordering Hasse Diagrams	
2	Module 2: Functions and Techniques of Counting Functions: Functions, One-to-One, Onto, and Invertible Functions, Composition Function Techniques of Counting: Introduction, Basic Counting Principles, Mathematical Functions, Permutations,	10

	Combinations, The Pigeonhole Principle, The Inclusion–Exclusion Principle, Tree Diagrams, Combinations with Repetitions	
3	Module 3: Probability, Graphs and Trees	10
	Probability: Introduction, Sample Space and Events, Finite Probability Spaces, Addition and Complementary Theorem(Without proof), Conditional Probability, Independent Events, Independent Repeated trials, Binomial Distribution, Random Variable Graphs and Trees: Definitions and Basic Properties, Trails, Paths, and Circuits, Matrix Representations of Graphs, Isomorphism of Graphs, Coloring of Graphs, Complete, Regular and Bipartite graph, Rooted Trees, Spanning trees and Shortest Paths	
	TOTAL	30 Lectures

Reference Books:

1. Discrete Mathematics, Third Edition by Seymour Lipschutz, Schaum's out lines, McGraw- Hill Inc., 2017
2. Discrete Mathematics, Norman L. Biggs, Clarendon Press, Oxford 1989, Revised Edition.
3. Discrete Mathematics and Its Applications, Seventh Edition by Kenneth H. Rosen, McGraw Hill Education (India) Private Limited. (2011)
4. Discrete Mathematics with Applications by Sussana S. Epp, Cengage Learning, 4th Edition, 2010
5. Discrete Mathematical Structures, Third Edition by B. Kolman, RC Busby, S Ross, PHI, 1996

Name of the Programme	UIT1.6					
Name of the Course	Effective English Communication					
Name of Board of Studies	Mass Media and Communication Skills					
Semester	I					
Number of Credits	02					
Number of Lectures	30					
Lecture Duration	60 Minutes					
Total Marks:	CE	20	SEE	30	Total	50

Learning Objectives of the Course

Sr. No.	Objectives
LOC1	To develop the ability to communicate effectively in the learners and to be able to use language for real life functions.
LOC2	To locate and understand specific information contained in notices, instructions, signs and product description
LOC3	To develop basic-level reading comprehension and focus on the sub-skills of reading such as predicting, identifying factual details.

Learning Outcomes of the Course

Sr. No.	Outcomes
CO1	Learners will be able to read and understand basic English communication
CO2	Learners will be able to apply and write correct and coherent information in English
CO3	Learners will be able to execute by listening, understanding and conversing in English for everyday functioning.

Module. No	Details	No. of Lectures
1	Module 1: READING	10
	<ol style="list-style-type: none"> 1. Infer meaning from context 2. Locate and understand specific information from a product description (brochure/advertisement/poster) 3. Locate and understand specific information from a product description from short texts. 4. Learn topic related new words/phrases 5. Read information /interesting events (national & international)from newspapers & magazines 6. Read and understand short illustrated narratives 7. Draw simple inferences based on a story 8. Locate and understand information & provide accurate details about the events. 9. Read short informative text about new age jobs (newspapers/internet) 	

2	Module 2: WRITING	10
	<p>1. Paragraph writing:</p> <ul style="list-style-type: none"> ● Basic concepts of writing a paragraph (topic sentence/organization/coherence/transition phrases) ● Types of paragraph Expository Paragraph, Comparison Paragraph, Contrast Paragraph. ● Writing a paragraph <p>2. Describing an event Describing past events by using words, phrases and expressions.</p> <p>3. Describing an object Describing size, shape, colour, texture, material.</p> <p>4. Describing a place/location Describing through use of senses(smell, sight, touch etc) dimensions, geographical orientation</p>	
3	Module 3: LISTENING & SPEAKING	10
	<p>A. Listening:</p> <ul style="list-style-type: none"> ● Listing for the main idea in a spoken piece ● Pronunciation ● Differences between sounds ● Listening for pauses ● Addressing people ● Emphasis & tonal variations <p>B. Speaking:</p> <ul style="list-style-type: none"> ● Introducing oneself and others ● Asking for and giving information ● Making requests and responding to requests ● Giving Instructions ● Giving permission 	
	TOTAL	30 Lectures

Reference Books:

1. English through reading by W.W.S. Bhaskar and N.S. Prabhu, 2017
2. Study Reading- A course in reading skills for Academic purposes by Eric H. Glendinning and Beverly Holmstrom, 2004
3. Speaking English Effectively by Krishna Mohan, N.P. Singh, 2013

Course Code	UIT1.7					
Name of the Course	Skill Enhancement Course(SEC) : Green Computing					
Name of Board of Studies	Information Technology and Data Science					
Semester	I					
Number of Credits	02					
Number of Lectures	30					
Lecture Duration	60 Minutes					
Total Marks:	CE	20	SEE	30	Total	50

Learning Objectives of the Course

Sr. No.	Objectives
LOC1	To decrease the use of toxins and maximize energy efficiency in the product development and its use.
LOC2	To understand the new technologies which will help in efficient cooling and datacenter working.
LOC3	To decrease the use of paper and understand the recycling process.
LOC4	To understand the role of Chief Green Officer and the benchmarking process.

Learning Outcomes of the Course

Sr. No.	Outcomes
CO1	Learners will be able to understand about the current problems related to Computing and the working of the latest technologies which may help in energy efficiency of the datacenter.
CO2	Learners will be able to analyze the strategies to make the hardware use and recycling efficient.
CO3	Learners will be able to evaluate fundamental roles emerging as part of Green Computing working in industries.

Module. No	Details	No. of Lectures
1	Module 1: Green Computing Overview and Standards	10
	<p>Overview and Issues: Problems: Toxins, Power Consumption, Equipment Disposal, And Company's Carbon Footprint: Measuring, Details, Plan for the Future, Cost Savings: Hardware, Power.</p> <p>Initiatives and Standards: Global Initiatives: United Nations, Basel Action Network, Basel Convention, Europe, WEEE Directive, Restriction of Hazardous Substances, National Adoption, Asia: Japan, China, Korea.</p>	

2	Module 2:Power Usage and Cooling	10
	<p>Minimizing Power Usage: Power Problems, Monitoring Power Usage, Servers, Low-Cost Options, Reducing Power Use, Data Deduplication, Virtualization, Management, Bigger Drives, Involving the Utility Company, Low Power Computers, Monitors, Software.</p> <p>Cooling: Cooling Costs, Power Cost, Causes of Cost, Calculating Cooling Needs, Reducing Cooling Costs, Economizers, On-Demand Cooling, HP's Solution, System Design, Datacenter Design, Centralized Control.</p>	
3	Module 3:Recycling and Staying Green	10
	<p>Recycling and Hardware : Recycling, Refurbishing, Green Design, Hard Drive Recycling, EPEAT, RoHS, Energy Star, Computers, Servers, Consolidation, Products, Hardware Considerations, Remote Desktop, Using Remote Desktop</p> <p>Staying Green: Organizational Check-ups, Chief Green Officer, Evolution, Sell the CEO, SMART Goals, Equipment Check-ups, Gather Data, Tracking the data, Baseline Data, Benchmarking, Analyze Data, Conduct Audits, Certifications.</p>	
	TOTAL	30 Lectures

Reference Books:

1. Green IT, Author: Toby Velte, Anthony Velte, Robert Elsenpeter ,McGrawHill,September 2008
2. Green Computing and Green IT Best Practice, Jason Harris , Emereo,2008
3. Green Data Center: Steps for the Journey, Alvin Galea, Michael Schaefer,Mike Ebbers, Shroff Publishers and Distributors,2011
4. Green Computing Tools and Techniques for Saving Energy, Money and Resources, Bud E. Smith, CRC Press,2017
5. The Green Computing Book Tackling Energy Efficiency at Large Scale, Edited By Wu-chun Feng , CRC Press,2014

Name of the Programme	UIT1.8					
Name of the Course	IKS - Computing Science in Ancient India					
Name of Board of Studies	Information Technology and Data Science					
Semester	I					
Number of Credits	02					
Number of Lectures	30					
Lecture Duration	60 Minutes					
Total Marks:	CE	20	SEE	30	Total	50

Learning Objectives of the Course

Sr. No.	Objectives
LOC1	To understand ancient Indian scientific concepts and methodologies.
LOC2	To analyze various ancient Indian mathematical and cosmological concepts
LOC3	To enhance calculation speed and mental ability by providing alternative methods to perform mathematical operations quickly.

Learning Outcomes of the Course

Sr. No.	Outcomes
CO1	Understand the foundational principles and interdisciplinary connections within ancient Indian science.
CO2	Apply the concepts of vedic mathematics for answering numerical aptitude questions from Competitive Examinations
CO3	Analyze the planetary references in Vedic literature, and the interplay between them.

Module. No	Details	No. of Lectures
1	Module 1 - Computing Science in Ancient India	10
	<ul style="list-style-type: none"> ● Introduction, ● Overview of Ancient Indian Science, ● Binary Numbers in Indian Antiquity - The Sanskrit Metrical Tradition, ● Formal Structures in Indian Logic, 	
2	Module 2 - Formulae and Notations	10
	<ul style="list-style-type: none"> ● The Katapayadi Formula ● The Modern Hashing ● BNF Notation ● Planets in Vedic Literature, ● Speed of Light and Puranic Cosmology 	

3	Module 3 - Vedic Mathematics	10
	<ul style="list-style-type: none"> ● Introduction and History of Vedic Mathematics, ● Sutras of Vedic Mathematics ● Various techniques to carry out basic operations covering Addition, Subtraction, Multiplication, Division ● Quadratic Equations, Simultaneous Equations, Use of various Vedic Techniques for answering numerical aptitude questions from Competitive Examinations 	
	TOTAL	30 Lectures

Reference Books:

1. Computing Science in Ancient India edited by T.R.N. Rao, 2016
2. Science and Technology in ancient India by Angad Godbole and Pranav Chandavarkar, 2023
3. Vedic Mathematics made easy by Dhaval Bhatia, 2021
4. The essentials of Vedic Mathematics by Rajesh Thakur, 2013
5. Vedic Mathematics New Horizons by Dr. S.K. Kapoor, 2012
6. Vedic Mathematics for Learners by Manu Tripathi, 2022

Semester II

Course Code	UIT2.1					
Name of the Programme	Python Programming					
Name of Board of Studies	Information Technology and Data Science					
Semester	II					
Number of Credits	02					
Number of Lectures	30					
Lecture Duration	60 Minutes					
Total Marks:	CE	20	SEE	30	Total	50

Learning Objectives of the Course

Sr. No.	Objectives
LOC1	To understand the strengths and usefulness of Python language constructs.
LOC2	To use lists, tuples, strings and dictionaries in Python programs.
LOC3	To design object-oriented programs with Python classes & use of class inheritance.
LOC4	To write functions & to use exception handling in Python applications for error handling in Python.

Learning Outcomes of the Course

Sr. No.	Outcomes
CO1	Learners will be able to understand the basic concept of Python with the implementation of list, tuples, strings and data dictionaries.
CO2	Learners will be able to apply the concept of functions with modules in Python.
CO3	Learners will be able to analyze the implementation of Object-Oriented Programming & Exception Handling.

Module. No	Details	No. of Lectures
1	Module 1: Basics, List, Tuple, String and Dictionary	10
	<p>Beginning Python Basics: Overview, Execution of Python Program, Declaring Variables, Implementing Conditional Statements, Implementing Loops in Python, Use of Control Statements.</p> <p>List & Tuples: List, List Methods & built-in Functions, List Operations, Tuple assignment, Operations in Tuple, Built-in Functions in Tuple, Difference between list & Tuples.</p> <p>String & Dictionary: String, String Methods & functions, String slicing, Strings are Immutable.</p> <p>Dictionary syntax, Elements in dictionary, Built-in methods & functions used in Dictionary.</p>	

2	Module 2: Functions, Class and Objects	10
	<p>Functions: Defining & Calling Function, Types of Function- User Defined & Built-In, Function with Arguments & Parameters, Recursive Function.</p> <p>Class & Objects: Concept of class & object, Inheritance, Method Overloading, Method Overriding.</p>	
3	Module 3: Exception Handling and Modules	10
	<p>Exception Handling: Introduction, Syntax, Types of Exceptions- IndexError, ZeroDivisionError, NameError, SyntaxError, ValueError, etc.</p> <p>Modules: What is a Module?, Types of Modules- User Defined, Built-in (math, os, time, sys, random).</p>	
	TOTAL	30 Lectures

Reference Books:

1. Think Python, 2nd edition by Allen B. Downey, 2015
2. Exploring Python Book by Timothy Budd, 2011
3. Advanced Guide to Python 3 Programming by J Hunt, 2019
4. Python Basics: A Practical Introduction to Python 3 by David Amos, Dan Bader, Joanna Jablonski, Fletcher Heisler, 2012
5. Learning Python by Mark Lutz Fourth Edition, 2009

Name of the Programme	UIT2.2					
Name of the Course	Web Technologies					
Name of Board of Studies	Information Technology and Data Science					
Semester	II					
Number of Credits	02					
Number of Lectures	30					
Lecture Duration	60 Minutes					
Total Marks:	CE	20	SEE	30	Total	50

Learning Objectives of the Course

Sr. No.	Objectives
LOC1	Understand and use different HTML elements to create web pages.
LOC2	Learn how to develop dynamic web pages using HTML and PHP applying web design principles to make pages effective.
LOC3	Learn how PHP can be connected to a database to store and retrieve data.

Learning Outcomes of the Course

Sr. No.	Outcomes
CO1	Learners will understand the concepts and use of different HTML tags and the server-side scripting language PHP.
CO2	Learners will be able to analyze and apply different HTML tags and the server-side scripting language PHP.
CO3	Learners will be able to create static and dynamic web applications by implementing the concepts of HTML and PHP.

Module. No.	Details	No. of Lectures
1	Module 1: Introduction to WWW and HTML 5 Basic Tags	10
	What Is the World Wide Web?: Creating a Web, HTTP: The Protocol of the Web. Introduction to HTML: Basic HTML Document Structure, Text Formatting Tags, Creating Hyperlinks and Bookmarks, Types of Lists. HTML Tables: Creating simple tables, table dimensions, merging table cells, Formatting Tables: Applying Borders, Background and Foreground Fills, Changing Cell Padding, Spacing and Alignment. HTML Media: Embedding Images, Audio and Video on web page.	
2	Module 2:HTML 5 Page Layout, Forms Handling and PHP	10
	HTML Page Layout: Using Layout Elements, Semantic Elements, Creating, Positioning and Formatting Divisions. HTML Forms: Collecting user input with HTML Forms, Advanced Input Types in HTML5. PHP: Introduction, Server-side Scripting vs Client-Side Scripting,	

	PHP Syntax and Comments, Variables and Constants, Data Types, Control Structures, Looping, Functions, PHP Form Handling.	
3	Module 3: Advanced PHP and PHP with MySQL	10
	Advanced PHP: PHP Arrays, PHP Strings, PHP Errors, PHP Date and Time. PHP and MySQL: Why PHP and MySQL? Connect to MySQL, Creating Database and Tables, Inserting Single and Multiple Rows, Retrieving Last Inserted ID, MySQL Prepared Statement, Selecting Data, Updating Data, Deleting Data, Limiting Data.	
	TOTAL	30 Lectures

Reference Books:

1. The Complete Reference HTML & CSS, Thomas A. Powell, McGrawHill, 5th Edition, 2010
2. Step by Step HTML5, Faithe Wempen, Microsoft Press, 2011.
3. The Complete Reference PHP, Steven Holzner, McGrawHill, 2008.
4. Web Standards Programmer's Reference: HTML, CSS, JavaScript, Perl, Python, and PHP, Steven M. Schafer, Wiley Publishing, Inc., 2007
5. PHP & MySQL Novice to Ninja, Tom Butler, SPD, 7th, 2022.
6. Murach's HTML5 and CSS, Anne Boehm, Zak Ruvalcaba, Murach, 3rd Edition, 2015

Course Code	UIT2.3					
Name of the Course	Python Programming and Web Technologies Practical					
Name of Board of Studies	Information Technology and Data Science					
Semester	II					
Number of Credits	04					
Number of Lectures	60					
Lecture Duration	60 Minutes					
Total Marks:	CE	20	SEE	30	Total	50

Learning Objectives of the Course

Sr. No.	Objectives
LOC1	To understand why Python is a useful scripting language for developers.
LOC2	To understand how to use lists, tuples, strings and dictionaries in Python programs.
LOC3	To understand how to design object-oriented programs with Python classes & use of class inheritance.
LOC4	To understand how to write functions & to use exception handling in Python applications for error handling in Python.
LOC5	Understand and use different HTML elements to create web pages.
LOC6	Learn how to develop dynamic web pages using HTML and PHP applying web design principles to make pages effective.
LOC7	Learn how PHP can be connected to a database to store and retrieve data.

Learning Outcomes of the Course

Sr. No.	Outcomes
CO1	Learners will be able to understand the basic concept of Python with the implementation of list, tuples, strings and data dictionaries.
CO2	Learners will be able to apply the concept of functions with modules in Python.
CO3	Learners will be able to analyze the implementation of Object-Oriented Programming & Exception Handling.
CO4	Learners will understand the concepts and use of different HTML tags and the server-side scripting language PHP.
CO5	Learners will be able to analyze and apply different HTML tags and the server-side scripting language PHP.
CO6	Learners will be able to develop static and dynamic web applications by implementing the concepts of HTML and PHP.

Module No	Details	No. of Lectures
	Module 1	
1	Introduction to Python Language a) Create variables of different data types (numeric, string, list, tuple, dictionary) and perform basic operations on them. b) Create a program that asks the user to enter their name and their age. Print out a message addressed to them that tells them the year that they will turn 100 years old.	30
2	a) Create a program for Assigning a letter grade based on a numerical score using conditional statements. b) Implement a Python program to find the largest among three numbers using if-else statements.	
3	a) Using a python interpreter perform operations like arithmetic operator, relational operator. b) Write a Python program to accepts two integers and print their sum.	
4	a) Open IDLE and create a new Python file. Write a simple Python program to calculate the area of a circle given its radius and display the result. b) Write a program to print Fibonacci series.	
5	a) Write a Python program that checks if a given number is even or odd and prints the result. b) Implement a Python program to find the sum of all numbers between 1 and 100 using a loop statement.	
6	a) Write a Python program that prompts the user to enter their age. If the age is greater than or equal to 18, print "You are an adult." Otherwise, print "You are a minor." b) Write a Python program to check whether a given number is equal to the sum of the cubes of its digits	
7	Functions, Operators, Lists and Tuples and Dictionaries a) Write a Python program to create a function called add_numbers that takes two parameters a and b and returns their sum. b) Implement a function called factorial to compute the factorial of a given number using recursion.	
8	a) Write a Python program to perform bitwise AND, OR, and XOR operations on two integers provided by the user. b) Write a Python program that calculates the sum, difference,	

	product, and quotient of two numbers entered by the user.	
9	<p>a) Write a Python program to find the sum and average of numbers in a given list.</p> <p>b) Write a Python program to create a list of numbers and calculate their sum, average, minimum, and maximum values.</p>	
10	<p>a) Write a Python program to create a Python dictionary to store information about a person (e.g., name, age, email). Print each piece of information separately.</p> <p>b) Write a Python program to create a dictionary containing student names and their corresponding marks. Calculate the average marks of the students.</p>	
11	<p>Class & Object and Modules</p> <p>a) Design a class that stores the information of students and displays the same.</p> <p>b) Implement the concept of multiple inheritance using python.</p>	
12	<p>a) Create a python program implementing use of <code>__init__()</code> function.</p> <p>b) Implement the program showing method overriding & polymorphism.</p>	
13	<p>a) Write a Python program to create a module implementing a user defined module.</p> <p>b) Write a Python program to create a module implementing a user defined module with the use of from keyword.</p>	
14	<p>a) Write a Python program to create modules implementing built in modules (eg- math) .</p> <p>b) Write a Python program to create GUI using built-in modules.</p>	
15	<p>a) Write a program to print the reciprocal of even numbers using exception handling.</p> <p>b) Write a program to showcase exceptions as: KeyError, IndexError, ZeroDivisionError, ValueError, NameError.</p>	
	Module 2	
1	<p>a. Create a web page using different text formatting tags.</p> <p>b. Create a web page with links to different pages and allow navigation between web pages.</p>	30
2	<p>a. Create a web page with links within the pages using bookmarks.</p> <p>b. Create a web page to demonstrate concepts of types of Lists.</p>	
3	<p>a. Create a web page showing a simple table with border.</p>	

	<p>b. Create a web page showing a table using concepts of merging table cells. [rowspan]</p> <p>c. Create a web page showing a table using concepts of merging table cells. [colspan]</p> <p>d. Create a web page showing a table using concepts of merging table cells. [Rowspan and colspan]</p>	
4	<p>a. Embed images into a web page using the tag.</p> <p>b. Embed images into a web page making the hyperlinks to other web pages.</p>	
5	<p>a. Embed audio files into a web page using the <audio> tag.</p> <p>b. Embed video files into a web page using the <video> tag.</p>	
6	<p>Design a web page demonstrating different semantics elements and position them in proper manner. [Take any page for reference and try to recreate it or design a page on your own]</p>	
7	<p>a. Write a PHP code to find the greater of 2 numbers. Accept the no. from the user.</p> <p>b. Write a PHP Program to accept a number from the user and print its factorial.</p> <p>c. Write a PHP program to accept a number from the user and print whether it is prime or not.</p>	
8	<p>a. Write a PHP program to display the following Binary Pyramid:</p> <pre> 1 0 1 1 0 1 0 1 0 1 1 0 1 0 1 </pre> <p>b. Write a PHP Program to print Fibonacci series.</p> <p>c. Write a PHP Program to accept a number from the user and print its table.</p>	
9	<p>Design a registration form and validate all the controls placed on the form using PHP.</p>	
10	<p>Write a PHP program to design calculator [+ , - , * , / , % , square , cube , square root , cube root , exponent etc.].</p>	
11	<p>a. Write a PHP program to demonstrate different types of arrays.</p> <p>b. Write a PHP program to demonstrate different array sorting functions.</p>	
12	<p>Write a PHP program to demonstrate different string functions. [Minimum 15 Functions]</p>	
13	<p>Write a PHP program to create:</p> <p>a. Create a database College.</p>	

	<p>b. Create a table Department (Dno, Dname, Number_of_faculty)</p> <p>c. Create a table Student (sno, sname, dept, class, percentage)</p> <p>d. Add 3 records in the table Department.</p> <p>e. Add 10 records in table Student.</p>	
14	<p>a. Write a PHP program to Update rows in a table.</p> <p>b. Write a PHP program to Delete rows from a table.</p>	
15	<p>Write a PHP program to:</p> <p>a. Display the names of the students whose percentage is between 35 to 75 in a tabular format.</p> <p>b. Display the names of the students in the department selected by the user. [Take name of department as user input].</p> <p>c. Display details of a few students at a time using the Limit clause.</p>	
	Total	60 Lectures

Name of the Programme	UIT2.4					
Name of the Course	Digital Electronics					
Name of Board of Studies	Information Technology and Data Science					
Semester	II					
Number of Credits	02					
Number of Lectures	30					
Lecture Duration	60 Minutes					
Total Marks:	CE	20	SEE	30	Total	50

Learning Objectives of the Course

Sr. No.	Objectives
LOC1	To comprehend the fundamentals of number systems and codes and perform conversions between them.
LOC2	To understand the core concepts of logic gates and Boolean algebra and apply them in designing digital circuits.
LOC3	To construct and analyze combinational circuits for efficient data manipulation.
LOC4	To comprehend sequential circuits and their applications in digital systems

Learning Outcomes of the Course

Sr. No.	Outcomes
CO1	Understand the basic concepts of digital electronics.
CO2	Apply minimization techniques in real digital systems.
CO3	Design and develop digital circuits.

Module. No	Details	No. of Lectures
1	Module 1 - Number System and Digital Arithmetic	10
	<p>Number System and Codes</p> <ul style="list-style-type: none"> ● Binary Number System ● Binary Conversions - Binary to decimal conversion, Decimal to binary Conversion, ● Hexadecimal Number system ● Hexadecimal Conversion - Binary to hexadecimal, Hexadecimal to Binary, Hexadecimal to decimal, Decimal to Hexadecimal ● Introduction to Codes, BCD Code ● Alphanumeric Codes - ASCII, EBCDIC, Unicode <p>Digital Arithmetic</p> <ul style="list-style-type: none"> ● Binary Arithmetic - Binary addition, 1's Complement Subtraction, 2's Complement subtraction ● Hexadecimal Arithmetic - Hexadecimal Addition and Subtraction 	

2	Module 2 - Arithmetic Circuits and KMap	10
	<p>Arithmetic Circuits</p> <ul style="list-style-type: none"> ● Logic Gates - AND, OR, NOT, NAND, XOR, XNOR ● Boolean Algebra - Theorems of Boolean Algebra, DeMorgan's Theorems ● Designing digital circuit using boolean algebra ● Arithmetic Circuits Basic Building Blocks - Half adder, full adder, Half Subtractor, Full Subtractor <p>Minterm, Maxterm and Karnaugh Maps:</p> <ul style="list-style-type: none"> ● Introduction, minterms and sum of minterm form, maxterm and Product of maxterm form, ● Reduction technique using Karnaugh maps – 2/3/4 variable K-maps, ● Grouping of variables in K-maps, ● K-maps for product of sum form, minimize Boolean expression using K-map and obtain Kmap from Boolean expression 	
3	Module 3 - Combinational and Sequential Circuits	10
	<p>Combinational Circuits</p> <ul style="list-style-type: none"> ● Multiplexer, 2:1 Multiplexer, 4:1 Multiplexer ● Demultiplexer, 1: 2 Demultiplexer. 1:4 Demultiplexer ● Encoder, Decimal to BCD Encoder ● Decoder, BCD to Decimal Decoder <p>Sequential Circuits</p> <ul style="list-style-type: none"> ● Latch - SR latch, D latch ● FlipFlop - SR flip flop, D flip flop, JK flip flop, T flip flop ● Shift Registers ● Counters 	
	TOTAL	30 Lectures

Reference Books:

1. Digital Logic Design by Sonali Singh, 2015
2. Digital electronics - principles and Integrated circuits by Anil K. Maini, 2007
3. Digital Principles and applications by Donald p Leach, Albert Paul Malvino, Goutam Saha, 2014
4. Modern digital Electronics by R P Jain, 2009
5. Digital Electronics by D K Kaushik, 2005

Name of the Programme	UOE2.7					
Name of the Course	Basics of Accounting					
Name of Board of Studies	Accounting and Finance					
Semester	II					
Number of Credits	02					
Number of Lectures	30					
Lecture Duration	60 Minutes					
Total Marks:	CE	20	SEE	30	Total	50

Learning Objectives of the Course

Sr. No.	Objectives
LOC1	To acquire conceptual knowledge of financial accounting and Indian Accounting Standards.
LOC2	To understand accounting in a computerized environment.
LOC3	To provide knowledge on the technique for preparing accounts and financial statements.

Learning Outcomes of the Course

Sr. No.	Outcomes
CO1	Learners will be able to understand the basic accounting principles and accounting standards.
CO2	Learners will be able to apply and analyze financial transactions of the business for managerial decisions.
CO3	Learners will be able to create financial statements.

Module. No	Details	No. of Lectures
1	Introduction to Accounting	10
	<ul style="list-style-type: none"> ● Meaning and Scope of Accounting: Need and importance, Concept of Book Keeping, Branches of accounting, Objectives of accounting, Basic Terminologies. ● Introduction to Accounting Standards: Meaning and Scope. ● Accounting in Computerized Environment: Introduction, Features and application in various areas of Accounting. 	
2	Interpretation of Financial Statements	10
	<ul style="list-style-type: none"> ● Terminologies in company accounts – Balance Sheet (Equity and liabilities, shareholder's funds, share application money pending allotment, non-current liabilities, current liabilities, Assets, non-current assets, current assets) ● Terminologies in company accounts – Revenue Statement (Revenue from operations, Other income, Expenses, Exceptional items, Extraordinary items, Tax expense, Profit/(Loss) for the period, Earnings per equity share) 	

	<ul style="list-style-type: none"> ● Comprehending financial statements in annual reports of limited companies in India. 	
3	Analysis of Financial Statements	10
	<ul style="list-style-type: none"> ● Ratio analysis and Interpretation (based on vertical form of financial statements) including conventional and functional classification ● Balance sheet ratios: Current ratio, Liquid Ratio ● Revenue statement ratios: Gross profit ratio, Net profit ratio. ● Combined ratios: Return on capital employed, Return on proprietors fund. 	
	TOTAL	30 Lectures

Reference Books:

1. Financial Accounting for Management by N. Ramchandran and Ram Kumar Kakani, The McGraw Hill Companies, 2011
2. Accounting for Management - by T. Vijaykumar, The McGraw Hill Companies, 2009
3. Financial Accounting for Business Managers by Asish K. Bhattacharyya. - PHI Learning, 2012
4. Financial Accounting by A Mukherjee and M. Hanif. – The McGraw Hill Companies, 2021
5. Financial Accounting by V. Rajasekaran and R. Lalitha, Pearson Publication, 2010
6. Financial Accounting by P.C. Tulsian, Pearson Publication, 2002
7. Financial Accounting by CA Raj K Agrawal and CA Rupesh Agrawal, Taxmann's, 2015

Name of the Program	UOE2.10					
Name of the Course	Organisational Behaviour					
Name of Board of Studies	Management					
Semester	II					
Number of Credits	02					
Number of Lectures	30					
Lecture Duration	60 Minutes					
Total Marks:	CE	20	SEE	30	Total	50

Learning Objectives of the Course

Sr. No.	Objectives
LOC1	To understand the changing role of practicing managers and learn about the theories of motivation in a work environment.
LOC2	To study the components of Individual behavior and group dynamics, leadership and power politics.
LOC3	To understand in the work culture and change management

Learning Outcomes of the Course

Sr. No.	Outcomes
CO1	Learner will be able to understand the theories of motivation in an organization
CO2	Learner will analyze the factors influencing individual and group behavior, aspects of leadership and Power & politics in an organization
CO3	Learners will be able to adapt to the work culture and learn the nuances of managing change.

Module. No	Details	No. of Lectures
1	Module 1: Introduction of organizational Behavior	10
	Introduction of organizational Behavior: Meaning, Nature and scope of OB, Models of OB. Theories of Motivation: Maslow, Herzberg, Mc. Gregor Theory X and Theory Y, William Ouchi's Theory Z, Victor Vroom. ERG theory	
2	Module 2: Group Dynamics, Leadership, Power & Politics	10
	Group Dynamics: Individual Behavior (IQ, EQ, SQ). Group Formation, Team Building, Team Development, Goal Setting Leadership- Introduction and characteristics of Leadership, Formal and Informal leadership.	

	Power & Politics -Difference between Influence, Power & Authority, Sources of power, Organizational Politics, Ethics of Power, and Politics in Organizations.	
3	Module 3: Organizational Culture and Change Management	10
	Organizational Culture and Change Management: Work Culture, types of culture, creating and maintaining organizational culture. • Organizational Change, effects of Resistance to Change, ways to overcome resistance to change. Time and Stress Management.	
	TOTAL	30 Lectures

Reference Books:

1. Organizational Behavior, Stephen P. Robbins, Prentice Hall of India Private Ltd., 2018
2. Organizational Behaviour, Mirza S. Saiyadain, Tata c. Graw Hill, 2003
3. Understanding Organizational Behaviour, Udai Pareek, Oxford University Press. 2010.
4. Work and Organizational Behaviour, John Bratton, Militza Callinan, Carolyn Forshaw and Peter, Sawchuk Palgrave Macmilla, New York, 2010
5. Organizational Behavior, Fred Luthans, McGraw Hill. 2008
6. Organizational Behavior, by Margie Parikh and Rajen Gupta, Tata Mc. Graw Hill Education Private Limited, New Delhi, 2010

Name of the Programme	UIT2.5					
Name of the Course	Robotics Process Automation					
Name of Board of Studies	Information Technology and Data Science					
Semester	II					
Number of Credits	02					
Number of Lectures	30					
Lecture Duration	60 Minutes					
Total Marks:	CE	20	SEE	30	Total	50

Learning Objectives of the Course

Sr. No.	Objectives
LOC1	To make the Learners aware about automation today in the industry.
LOC2	To make the Learners aware about the tools used for automation.
LOC3	To help the Learners automate a complete process.

Learning Outcomes of the Course

Sr. No.	Outcomes
CO1	Learners will be able to Understand the mechanism of the business process and can provide the solution in an optimized way.
CO2	Learners will be able to apply and use Sequence, Flowchart, and Control Flow.
CO3	Learners will be able to create Automation for the business processes.

Module. No	Details	No. of Lectures
1	Module 1: Sequence, Flowchart, and Control Flow	10
	<ol style="list-style-type: none"> 1. Create a simple sequence-based project. 2. Create a flowchart-based project. 3. Automate UiPath Number Calculation (Subtraction, Multiplication, Division of numbers). 4. Create an automation UiPath project using different types of variables (number, datetime, Boolean, generic, array, data table) 5. Consider an array of names. We have to find out how many of them start with the letter "a". 6. Create an automation where the number of names starting with "a" is counted and the result is displayed. 7. Demonstrate switch statement with an example. 	

	<ol style="list-style-type: none"> 8. Create an automation To Print numbers from 1 to 10 with break after the writeline activity inside for each activity 9. Create an automation using Do...While Activity to print numbers from 5 to 1 10. Create an automation using Delay Activity between two writeline activities to separate their execution by 5 seconds 	
2	Module 2: Data Manipulation and Using Controls	10
	<ol style="list-style-type: none"> 1. Automate the process to extract data from an excel file into a data table and vice versa 2. Create an automation To Write data to specific cell of an excel sheet. 3. Create an automation To Read data to specific cell of an excel sheet. 4. Create an automation to append data to specific cell of an excel sheet. 5. Create an automation to Read an Excel sheet and write the data another sheet based on some condition. 6. Create an automation to sort a table of an excel sheet. 7. Create an automation To filter a table of an excel sheet 8. Implement the attach window activity. 9. Perform data scraping on any e-commerce website (eg. Amazon/Flipkart) 10. Automate the process of logging and taking screenshots in UiPath. 	
3	Module 3: Application with Plugins, Extensions, Handling User Events and Assistant Bots	10
	<ol style="list-style-type: none"> 1. Demonstrate the Mouse (click, double click and hover) activities in UiPath: 2. Demonstrate the Type into activities in UiPath. 3. Demonstrate the Type Secure text in UiPath. 4. Demonstrate the Image triggering events in UiPath. 5. Demonstrate the System triggering events in UiPath. 6. Install and automate any process using UiPath with the Mail Plugin 7. Install and automate any process using UiPath with the PDF Plugin 8. Install and automate any process using UiPath with the Excel Plugin 9. Install and automate any process using UiPath with the Word Plugin 10. Demonstrate the Exception handing in UiPath. 	
	TOTAL	30 Lectures

Reference Books:

1. Learning Robotic Process Automation, by Alok Mani Tripathi, Packt, 2018
2. Robotic Process Automation Tools, Process Automation and their benefits, by Srikanth Merianda, CreateSpace, 2018
3. The Simple Implementation Guide to Robotic Process, by Kelly Wibbenmeyer, iUniverse, 2018
4. Robotic Process Automation Projects, by Nandan Mullakara, Arun Kumar Asokan, Packt, 2020
5. Robotic Process Automation, by Anand Singh Gadwal, Wiley, 2023

Course Code	UIT2.6					
Name of the course	Numerical Methods					
Name of Board of Studies	Mathematics and Statistics					
Semester	II					
Number of credits	2					
Number of lectures	30					
Lecture duration	60 minutes					
Total marks	CE	20	SEE	30	Total Marks	50

Learning Objectives of the Course

Sr. No.	Objectives
LOC1	Course will enhance the problem-solving skills of students using extremely powerful numerical methods.
LOC2	Develop the ability to use algorithms for approximation problems.
LOC3	Ability to assess the approximation techniques to formulate and apply appropriate strategy to solve real world problems.

Learning Outcomes of the Course

Sr. No.	Outcomes
	After Completing this course student will be able to:
CO1	Apply numerical techniques to find the roots of nonlinear equations and Understand the difference operators and the use of interpolation.
CO2	Apply numerical techniques to find the solution of systems of linear equations and Analyze and Evaluate problems on numerical differentiation and integration.
CO3	Analyze and Evaluate on numerical solutions of Ordinary Differential Equation and Apply Linear Programming method for problem solving in real life.

Module No.	Details	No. of Lectures
1	Module 1: Solutions of Algebraic, Transcendental Equations and Interpolation	10
	Solutions of Algebraic and Transcendental Equations: The Bisection Method, The Newton-Raphson Method, The Regula-falsi method, The Secant Method. Interpolation: Forward Difference, Backward Difference, Newton's Forward Difference Interpolation, Newton's Backward Difference Interpolation, Lagrange's Interpolation	
2	Module 2: Solution of simultaneous algebraic equations (linear) using iterative methods: Gauss-Jordan Method, Gauss-Seidel Method.	10

	Numerical differentiation and Integration: Numerical differentiation, Numerical integration using Trapezoidal Rule, Simpson's 1/3rd and 3/8th rules.	
3	Module 3	10
	Numerical solution of 1st and 2nd order differential equations: Taylor series, Euler's Method, Modified Euler's Method, Runge-Kutta Method for 1 st and 2nd Order Differential Equations. Linear Programming: Linear optimization problem, Formulation and Graphical solution, Basic solution and Feasible solution.	
	TOTAL	30 Lectures

Books and References:

1. Introductory Methods of Numerical Methods by S. S. Sastry, PHI, 5th edition , 2012
2. Numerical Methods for Engineers by Steven C. Chapra, Raymond P.Canale, Tata Mc Graw Hill, 6th edition , 2010
3. Numerical Analysis by Richard L. Burden, J. Douglas Faires, Cengage Learning, 9th edition, 2011
4. Numerical Methods by T Veerarajan, T Ramachandran, Tata Mc Graw Hill, 7th edition, 2011

Name of the Programme	UIT2.7					
Name of the Course	English Technical Writing					
Name of Board of Studies	Mass Media and Communication Skills					
Semester	II					
Number of Credits	02					
Number of Lectures	30					
Lecture Duration	60 Minutes					
Total Marks:	CE	20	SEE	30	Total	50

Learning Objectives of the Course

Sr. No.	Objectives
LOC1	This course aims to provide conceptual understanding of developing a strong foundation in general writing, including research proposals and reports.
LOC2	Learners will be able to apply skills for writing Article, Blog, E-Book, Commercial web Page design, Business Listing Press Release, E-Listing and Product Description.
LOC3	This course aims to evaluate conceptual understanding of ethics and plagiarism

Learning Outcomes of the Course

Sr. No.	Outcomes
CO1	To understand basic concepts of Technical Communication.
CO2	To be able to organise and write reports.
CO3	To be able to use online collaborative tools.

Module. No	Details	No. of Lectures
1	Module 1: Technical Writing	10
	<p>Introduction to Technical Communication: Meaning, characteristics, essential practices</p> <p>Steps of Writing Technical Documents: Planning, Drafting, Revising, Editing, Proofreading</p> <p>Writing Collaboratively: Managing Projects, Conducting Meetings, Using Social Media and Other Electronic Tools in Collaboration,</p> <p>Introduction to Content Writing: Types of Content: Article, Blog, E-Books, Press Release, Newsletters Etc)</p> <p>Organizing Information: Principles for Organizing Technical Information, Understanding Conventional Organizational Patterns</p> <p>Emphasizing Important Information: Writing Clear, Informative Titles, Writing Clear, Informative Headings, Writing Clear Informative Lists, Writing Clear Informative Paragraphs.</p>	

2	Module 2: Report Writing	10
	<p>Report Components: Title page, Executive summary, Contents page, Introduction, Background information, Methodology, Findings, Analysis, Conclusion, Recommendations, Bibliography, Appendices, Glossary</p> <p>Types of Reports: Feasibility Reports, Investigative Reports, Laboratory Reports, Test Reports, Trip Reports, Trouble Reports</p> <p>Writing Proposals: Understanding the Process of Writing Proposals.</p> <p>Writing Informational Reports: Understanding the Process of Writing Informational Reports, Writing Directives, Writing Field Reports, Writing Progress and Status Reports, Writing Incident Reports, Writing Meeting Minutes.</p> <p>Writing Recommendation Reports: Understanding the Role of Recommendation Reports, Writing Recommendation Reports.</p>	
3	Module 3: Evaluation and Plagiarism	10
	<p>Reviewing, Evaluating, and Testing Documents: Understanding Reviewing, Evaluating, and Testing, Reviewing Documents, Using Internet tools to check writing Quality, Duplicate Content Detector,</p> <p>Plagiarism: Concept, Ethical and professional issues of plagiarism, ways to avoid plagiarism</p>	
	TOTAL	30 Lectures

Reference Books:

1. Technical Communication Mike Markel Bedford/St. Martin's 2014
2. Handbook of Technical Writing Gerald J. Alred, Charles T. Brusaw, Walter E. Oliu Bedford/St. Martin's 2008.
3. Technical Writing 101: A Real-World Guide to Planning and Writing Technical Content Alan S. Pringle and Sarah S. O'Keefe scriptorium 2009.

Name of the Programme	UIT2.8					
Name of the Course	Lifestyle for Holistic Health					
Name of Board of Studies	Information Technology and Data Science					
Semester	II					
Number of Credits	02					
Number of Lectures	30					
Lecture Duration	60 Minutes					
Total Marks:	CE	20	SEE	30	Total	50

Learning Objectives of the Course

Sr. No.	Objectives
LOC1	Define what holistic health is.
LOC2	Discuss the concepts of holistic health.
LOC3	Practice ways to attain holistic health.

Learning Outcomes of the Course

Sr. No.	Outcomes
CO1	Learners will be able to understand inner resources to strengthen mind- body connections.
CO2	Learners will be able to apply knowledge of health risks, disease, and wellness in diverse populations.
CO3	Learners will be able to evaluate health challenges to the mind-body- spirit and holistic methods.

Module. No	Details	No. of Lectures
1	Module 1: Ethics of Eating and Dietary Theory	10
	The Ethics of Eating and Importance of a Balanced Diet: What We Eat, When We Eat, How We Eat, Nutrient Requirements, Health Benefits, Weight Management, Mental Health, Cultural and Social Aspects. Dietary Theory: Diet Puzzle, Traditional Style Diets, Modern Themes, Finding the Right Diet	
2	Module 2: Health, Redefining Health and Stress Response	10
	Why be healthy: Authentic Self-Expression, Unpredictable Futures, Building Your Future, Spiritual Beings, This is your life. Redefining Health: Story of Self-Healing, How Lifestyle affects your body, Sick versus Well, Psychology of emotions. How to counteract the stress response: Introduction. How to elicit the relaxation response, simplified way to elicit the relaxation response, Meditation, Self-healing.	

3	Module 3: Radical Self-care and Healing Yourself	10
	<p>Radical Self Care: The Whole Health Cairn, Treatments that foster self-healing.</p> <p>Healing Yourself: Believe you can heal yourself, Find the Right Support, Listen to your body and intuition, Diagnose the root cause of illness, Work-Life balance, Write the Prescription for Yourself, Surrender Attachment to Outcomes.</p>	
	TOTAL	30 Lectures

Reference Books:

1. Integrative Nutrition: A Whole-Life Approach to Health and Happiness by Joshua Rosenthal, 2018
2. Mind Over Medicine: Scientific Proof That You Can Heal Yourself" by Lissa Rankin, M.D, 2014
3. The Healing Power of Mindfulness: A New Way of Being by Jon Kabat-Zinn, 2018
4. Holistic Health: A Comprehensive Guide to Wellness by Bruce W. Tuckman and Robert E. Kennedy,
5. The Encyclopedia of Natural Medicine by Michael T. Murray and Joseph Pizzorno, 3rd Edition, 2012

Scheme of Evaluation Pattern

Table 1A: Scheme of Continuous Evaluation (CE) Scheme of Evaluation Pattern

Sub-components	Maximum Marks	Conditions for passing
1) Fieldwork-based project work and report or assignment or presentation or report- writing or article/ book review or topic- based activity	10	a) A learner must be present for each of the sub-components. b) The subtotal of both the sub-components must be minimum 08 marks
2) Assignment/ Presentation/ Quiz	10	
Total	20	

Note: Learner must be Present in all the two exam components

**Table 1B: Scheme of Semester End Examination (SEE) Evaluation
Question Paper Pattern for Semester End Examination (SEE)**

Maximum Marks: 30 Minimum Marks to Pass: 12 Duration: 1 hour

Note: All questions are compulsory. Each question has an internal choice.

Question Number	Nature of Questions	Maximum Marks
1)	Attempt any TWO of the following: (From Module I)	10
	A.	
	B.	
	C.	
2)	Attempt any TWO of the following: (From Module II)	10
	A.	
	B.	
	C.	
3)	Attempt any TWO of the following: (From Module III)	10
	A.	
	B.	
	C.	

Note:

Percentage of 6 categories of Blooms Taxonomy in question paper

	Remember	Understand	Apply	Analyze	Evaluate	Create	
% in Question Paper	20	20	30	10	10	10	100 %

**Table 1C: Scheme of Semester End Practical Examination (SEE)
Evaluation Question Paper Pattern for Practical Semester End Examination (SEE)
Major Practical Subject Minor \ VSC \ SEC Practical Subject**

A Practical of 2 credits is evaluated for a total of 50 Marks

Internal Continuous Assessment: 40% [20 Marks]

Continuous Evaluation through: Students are expected to attend each practical and submit the written practical of the previous session.

Performing Practical and write up submission will be continuous internal evaluation. 2.5 marks can be awarded for each practical performance and write up submission totaling to 50 marks and can be converted to 20 marks.

Semester End Examination: 60% [30 Marks]

Question Number	Nature of Questions	Marks
1)	Implement following practical's:	
	A. Practical Question from Major 1	13
	B. Practical Question from Major 2	12
	C. Journal and Viva	05