ANNUAL CURRICULUM PLAN
2020 - 2021

INFORMATICS PRACTICES (NEW)
CLASS XI (Code No. 065)

Vision

- ***To enable the students to identify the components of computer system.***
- ***Create Python programs using different data types, lists and dictionaries.***
- ***To develop the analytical, problem-solving and logical programming skills of the students through Python Language.***
- ***Understand database concepts and Relational Database Management Systems.***
- ***Retrieve and manipulate data in RDBMS using Structured Query Language***
- ***To inculcate among students the data-handling techniques related to database management through SQL Language.***
- ***Identify the Emerging trends in the fields of Information Technology.***

TERM PERIOD – APRIL TO SEPTEMBER

Unit & Chapter	Transactional Strategies / Innovative Pedagogy	Learning Outcomes	Skill Development
Introduction to Computer System • Introduction to computer and computing: evolution of computing devices, components of a computer system and their inter-connections, Input/output devices. • Computer Memory: Units of memory, types of memory – primary and secondary, data deletion, its recovery and related security concerns. • Software: purpose and types – system and application software, generic and specific purpose software.	Activation and use of prior knowledge. Reading text structures Explaining text structures Connectors Summarisation Learning through Group Discussions Context Based Learning Virtual Classrooms	Students will be able understand the fundamental hardware components that make up a computer's hardware and the role of each of these components. To enable them to understand the difference between an operating system and an application program, and what each is used for in a computer	Core Skills - digital literacy Art Integration - Prepare a presentation on comparison between various Memory Types and their distinct characteristics.

Unit & Chapter	Transactional Strategies/ Innovative Pedagogy	Learning Outcomes	Skill Development
Introduction to the Emerging Trends • Artificial Intelligence, Machine Learning, Natural Language Processing, Immersive experience (AR, VR), Robotics. • Big data and its characteristics, Internet of Things (IoT), Sensors, Smart cities. • Cloud Computing and Cloud Services (SaaS, IaaS, PaaS); • Grid Computing • Block chain technology	Activation and use of prior know-ledge. Reading text structures Explaining text structures Connectors Summarisation Learning through Group Discussions Context Based Learning Virtual Classrooms	Students will learn about the emerging trends that will make a huge impact (in the future) on digital economy and interaction in digital societies.	Core Skills - digital literacy
Unit & Chapter	**Transactional Strategies/ Innovative Pedagogy**	**Learning Outcomes**	**Skill Development**
Introduction to Python • Basics of Python programming, Python interpreter - interactive and script mode. • Structure of a program, indentation, identifiers, keywords, constants, variables, types of operators, precedence of operators, data types, mutable and immutable data types. • Statements, expressions, evaluation and comments, input and output statements, data type conversion, debugging. • Control Statements: if-else, for loop	Activation and use of prior knowledge. Reading and understanding text structures Computational Thinking Learning by Doing Adaptive Learning Context Based Learning Virtual Classrooms through online teaching Assessment of student's learning through real-time AV monitored Practical based on the Unit.	Basic computational thinking will be achieved. Students will learn how to reason with variables, state transitions, conditionals, and iteration.	Core Skills - Design skills, logical reasoning, critical analysis, programming competency Interdisciplinary Linkage – Mathematics

TERM PERIOD – OCTOBER TO FEBRUARY

Unit & Chapter	Transactional Strategies/ Innovative Pedagogy	Learning Outcomes	Skill Development
Python Programming • Lists: list operations - creating, initializing, traversing and manipulating lists, list methods and built-in functions. • Dictionary: concept of key-value pair, creating, initializing, traversing, updating and deleting elements, dictionary methods and built-in functions.	Activation and use of prior knowledge. Reading and understanding text structures Computational Thinking Learning by Doing Adaptive Learning Virtual Classrooms through online teaching Assessment of student's learning through real-time AV monitored Practical based on the Unit.	Students will understand the notion of higher order data structures such as lists and dictionaries. It lays the foundation of the problem-solving skills of students through Python. They will develop Basic computational thinking.	Core Skills - Design skills, logical reasoning, critical analysis, programming competency
Structured Query Language • Database Concepts: Introduction, need, Database Management System. • Relational data model: Concept of domain, tuple, relation, candidate key, primary key, alternate key • Advantages of SQL, Data Definition Language, Data Query Language and Data Manipulation Language, Introduction to MySQL, creating a database using MySQL, Data Types • Data Definition: CREATE TABLE Data Query: SELECT, FROM, WHERE. Data Manipulation: INSERT	Activation and use of prior knowledge. Reading and understanding text structures Computational Thinking Learning by Doing Adaptive Learning Virtual Classrooms through online teaching Assessment of student's learning through real-time AV monitored Practical based on the Unit.	Students will get familiar with database concepts and Relational Database Management Systems. Ability to retrieve and manipulate data in RDBMS using Structured Query Language. Learning of the data-handling techniques related to database management through SQL.	Core Skills - Design skills, logical reasoning, critical analysis.

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