Janardan Bhagat Shikshan Prasarak Sanstha's

Changu Kana Thakur

Arts, Commerce and Science College, New Panvel (Autonomous)

Department of Information Technology

Program Specific Outcomes

	After completing the programme in Information Technology, Student will be able to:
PSO1	**Gain proficiency in the field of Networking and Security.**
PSO2	**Develop Programming skills that help to meet the needs of the IT industry.**
PSO3	**Build soft skills for employability and personality development in the Industrial environment.**

Course Outcomes

Name of the Programme: F.Y.B.Sc.I.T.	Programme Coordinator: Dr. (Mrs.) Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject:I.T.	Course: Introduction to C++ Programming (Major) Course Code: UIT1ICT	Course Coordinator: Mrs. S. R. Paringe
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Define basic concepts of C++ programming language.	Level I: Remembering
CO2	Illustrate different types of operators of C++ language.	Level II: Understanding
CO3	Explain characteristics of object oriented programming approach with C++.	Level V: Evaluating
CO4	Elaborate Classes and objects in OOPs.	Level VI: Creating

Name of the Programme: F.Y.B.Sc.I.T.	Programme Coordinator: Dr. (Mrs.) Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject:I.T.	Course: Introduction to C++ Programming Practical (Major) Course Code: UIT1ICP	Course Coordinator: Mrs. S. R. Paringe
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Demonstrate basic C++ programs.	Level II: Understanding
CO2	Construct C++ programs using conditional statements and loops.	Level III: Applying
CO3	Explain use of functions and arrays in C++ programs.	Level V: Evaluating
CO4	Build programs using classes and objects, constructors and inheritance.	Level VI: Creating

Name of the Programme: F.Y.B.Sc.I.T.	Programme Coordinator: Dr. (Mrs.) Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject:I.T.	Course: Computer Organization and Design (Major) Course Code: UIT1COT	Course Coordinator: Mrs. S. D. Chandvekar
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Explain the underlying principles of computers.	Level II: Understanding
CO2	Analyse how data is transferred between various peripheral devices in the computer.	Level IV: Analyzing
CO3	Define the various types of number systems and logic gates.	Level I: Remembering
CO4	Elaborate the different types of Flip-Flops.	Level VI: Creating

Name of the Programme: F.Y.B.Sc.I.T.	Programme Coordinator: Dr. (Mrs.) Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject:I.T.	Course: Computer Organization and Design Practical (Major) Course Code: UIT1COP	Course Coordinator: Mrs. S. D. Chandvekar
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Classify logic gates and their ICs and universal gates.	Level IV: Analyzing
CO2	Simplify the given Boolean expressions using a minimum number of logic gates and ICs.	Level IV: Analyzing
CO3	Build arithmetic circuits.	Level VI: Creating
CO4	Design Encoder, Decoder, Multiplexer and Demultiplexer.	Level VI: Creating

Name of the Programme: F.Y.B.Sc.I.T.	Programme Coordinator: Dr. (Mrs.) Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject:I.T.	Course: Satistical Methods (Major) Course Code: UIT1SMT	Course Coordinator: Ms. N.C. Patil
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Recall measure of central tendency and dispersion.	Level I: Remembering
CO2	Describe sampling theory.	Level I: Remembering
CO3	Classify discrete and continuous probability distribution to various problems.	Level III: Applying
CO4	Explain correlation and regression.	Level II: Understanding

Name of the Programme: F.Y.B.Sc.I.T.	Programme Coordinator: Dr. (Mrs.) Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject:I.T.	Course: Statistical Methods Practical (Major) Course Code: UIT1SMP	Course Coordinator: Ms. N.C. Patil
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Make use of basic commands of R programming.	Level III: Applying
CO2	Analyse the concepts of various descriptive statistical functions.	Level IV: Analyzing
CO3	Analyse the concepts of sampling theory.	Level IV: Analyzing
CO4	Explain the probability and regression.	Level II: Understanding

Name of the Programme: F.Y.B.Sc.I.T.	Programme Coordinator: Dr. (Mrs.) Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject:I.T.	Course: Introduction to Web Designing Practical(SEC) Course Code: UIT1IWP	Course Coordinator: Ms. Nikita H. Patil
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Explain head tag and body tag in the give web page.	Level 2 : Understanding
CO2	Creating static web pages using HTML5 and CSS	Level 6: Creating
CO3	Design a responsive website using HTML5 and CSS.	Level 6: Creating
CO4	Describe the procedure to organize display as per given screen layout using frames.	Level 2: Understanding

Name of the Programme: F.Y.B.Sc.I.T.	Programme Coordinator: Dr. (Mrs.) Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject: I.T.	Course: Digital and Technology Solution (VEC) Course Code: UVEC1DTS	Course Coordinator: Mrs. S. D. Chandvekar
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Build knowledge about digital paradigm.	Level III: Applying
CO2	Elaborate the importance of digital technology, digital financial tools, e-commerce.	Level VI: Creating
CO3	List the e-governance and Digital India initiatives	Level IV: Analyzing
CO4	Explain use & applications of digital technology	Level V: Evaluating

SEM II

Name of the Programme: F.Y.B.Sc.I.T.	**Programme Coordinator: Dr. (Mrs.) Jyotsna Thakur**	**Head of the Department: Mrs. I. S. Thakare**
Subject: I.T.	**Course: Fundamentals of Python Programming (Major) Course Code: UIT2PPT**	**Course Coordinator: Mrs. S. D. Chandvekar**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Explain Python syntax and basic programming concepts.	Level II: Understanding
CO2	Explain and utilize data types, variables, and operators in Python.	Level II :Understanding
CO3	Learn control flow statements (if-else, loops) for program control and logic.	Level V: Evaluating
CO4	Acquire knowledge of built-in data structures like lists, tuples, and dictionaries.	Level V: Evaluating

Name of the Programme: F.Y.B.Sc.I.T.	**Programme Coordinator: Dr. (Mrs.) Jyotsna Thakur**	**Head of the Department: Mrs. I. S. Thakare**
Subject:I.T.	**Course: Programming Fundamentals Using Python Practical (Major) Course Code: UIT2PPP**	**Course Coordinator: Mrs. S. D. Chandvekar**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Explaining the Scripting and Automation in python	Level II: Understanding
CO2	Implement the Handling of User Input	Level VI: Creating
CO3	Implement Programming Concepts like structure, pattern , etc.	Level VI: Creating
CO4	Identify the methods to create and manipulate programs.	Level V: Evaluate

Name of the Programme: F.Y.B.Sc.I.T.	Programme Coordinator: Dr. (Mrs.) Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject:I.T.	Course: Database Management System (Major) Course Code: UIT2DMT	Course Coordinator: Mrs. P.S. Dandge
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Design E-R model to represent normalized database.	Level VI: Creating
CO2	Explain the fundamental of RDBMS.	Level V: Evaluating
CO3	Explain the transactions of database.	Level V: Evaluating
CO4	Elaborate the Pl/Sql and View in DBMS.	Level VI: Creating

Name of the Programme: B.Sc.I.T.	Programme Coordinator: Dr. (Mrs.) Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject: IT	Course: Database Management System Practical (Major) Course Code: UIT2DMP	Course Coordinator: Mrs. P.S. Dandge
	After completing the course, Students will be able to	Bloom Taxonomy Level (BTL)
CO1	Build Basic Database.	Level VI: Creating
CO2	Build SQL statement.	Level III: Applying
CO3	Modify E-R model to relational table.	Level V: Creating
CO4	Construct integrity constraints.	Level V:Creating

Name of the Programme: **B.Sc.I.T.**	**Programme Coordinator:** **Dr. (Mrs.) Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **IT**	**Course: Linear Algebra (Major)** **Course Code: UIT2LAT**	**Course Coordinator:**
	After completing the course, Students will be able to	Bloom Taxonomy Level (BTL)
CO1	Define vector spaces and subspaces.	Level I: Remembering
CO2	Relate matrices and linear transformation.	Level II: Understanding
CO3	Find kernel and image of linear transformation.	Level I: Remembering
CO4	Evaluate matrix representation.	Level V: Evaluating

Name of the Programme: **F.Y. B.Sc.I.T.**	**Programme Coordinator:** **Dr. (Mrs.) Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **IT**	**Course: Linear Algebra Practical(Major)** **Course Code: UIT2LAP**	**Course Coordinator:** **Ms. N.C. Patil**
	After completing the course, Students will be able to	**Bloom Taxonomy Level (BTL)**
CO1	Make use of basic commands of python programming.	Level III: Applying
CO2	Explain properties of vector spaces.	Level II: Understanding
CO3	Analyse the concept of properties of linear transformation.	Level IV: Analyzing
CO4	Evaluate determinant and inverse of matrix.	Level V: Evaluating

Name of the Programme: F.Y.B.Sc.I.T.	Programme Coordinator: Dr. (Mrs.) Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject: I.T.	Course: Advanced Web Programming Practical (SEC) Course Code: UIT2AWP	Course Coordinator: Ms. P.P. Shenoy
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Use PHP to create dynamic web pages.	Level III: Applying
CO2	Create responsive web pages to interact with databases.	Level IV: Creating
CO3	Develop attractive web pages using advanced technologies such as JQuery and XML.	Level III: Applying

Name of the Programme: F.Y.B.Sc.I.T.	Programme Coordinator: Dr. (Mrs.) Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject: I.T.	Course: Introduction to Multimedia (Open Elective) Course Code: UOE2MAT	Course Coordinator: Mrs. S.D. Chandvekar
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Summarize the key concepts in current multimedia technology.	Level II: Understanding
CO2	Find different Image Format and study it.	Level I: Remembering
CO3	List the different types of audio and video format.	Level IV: Analyzing
CO4	Create quality multimedia software titles.	Level VI: Creating

Name of the Programme: **F.Y.B.Sc.I.T.**	**Programme Coordinator:** **Dr. (Mrs.) Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **I.T.**	**Course: Digital and Technology Solution (VEC)** **Course Code: UVEC2DTS**	**Course Coordinator:** **Mrs. S. D. Chandvekar**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Build Knowledge about digital paradigm.	Level III: Applying
CO2	Realization of importance of digital technology, digital financial tools, e-commerce.	Level IV: Analyzing
CO3	Elaborate with the e-governance and Digital India initiatives	Level VI: Creating
CO4	Explain use & applications of digital technology.	Level V: Evaluating

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Changu Kana Thakur

Arts, Commerce and Science College, New Panvel (Autonomous)

Department of Information Technology

Program Specific Outcomes

2024-25

	After completing the programme in Information Technology, Student will be able to:
PSO1	**Gain proficiency in the field of Networking and Security.**
PSO2	**Develop Programming skills that help to meet the needs of the IT industry.**
PSO3	**Build soft skills for employability and personality development in the Industrial environment.**

Course Outcomes

Name of the Programme: **S.Y.B.Sc.I.T.**	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **I.T.**	**Course: Advanced Python Programming (Major)** **Course Code: UIT3APT**	**Course Coordinator:** **Mr. P. P. Pawar**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Explain the concepts of Class & Objects & use of Regular Expression in Python Programming.	Level II :Understanding
CO2	Demonstrate the GUI forms and widgets.	Level III: Applying
CO3	Identify the software to create and manipulate connection with DB.	Level IV : Evaluating
CO4	Utilize the tools to design reports in charts, bars, etc.	Level III: Applying

Name of the Programme: **S.Y.B.Sc.I.T.**	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **I.T.**	**Course: Advanced Python Programming Practical (Major)** **Course Code: UIT3APP**	**Course Coordinator:** **Mr. P. P. Pawar**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Create class, objects, inheritance, overriding functions etc.	Level VI : Creating
CO2	Identify the methods to create and manipulate programs.	Level IV : Evaluating
CO3	Develop graphical user interface & connection with DB.	Level VI : Creating
CO4	Build reports by using python tools for charts, plots, frames, etc	Level IV : Evaluating

Name of the Programme: **S.Y.B.Sc.I.T.**	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **I.T.**	**Course: Advanced Database Management System and Big Data (Major)** **Course Code: UIT3ADT**	**Course Coordinator:** **Mrs. I. S. Thakare**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Explain advanced database objects required for PL/SQL programs.	Level II: Understanding
CO2	Elaborate the DDL and DML database statements and associated naming rules.	Level VI: Creating
CO3	Explain advanced database objects required for PL/SQL programs.	Level V : Evaluating
CO4	Explain the basic concepts of Big Data Analytics.	Level V : Evaluating

Name of the Programme: S.Y.B.Sc.I.T.	Programme Coordinator: Mrs. Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject: I.T.	Course: Advanced Database Management System and Big Data Practical (Major) Course Code: UIT3ADP	Course Coordinator: Mrs. I. S. Thakare
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Apply DDL and DML statements to access database.	Level III: Applying
CO2	Create database objects using SET operators.	Level VI : Creating
CO3	Build basic PL/SQL programs	Level VI : Creating
CO4	Develop PL/SQL program using Advanced Database objects.	Level VI : Creating

Name of the Programme: S.Y.B.Sc.I.T.	Programme Coordinator: Mrs. Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject: I.T.	Course: Computer Network (Minor) Course Code: UIT3CNT	Course Coordinator: Mr. V. C. Nimkar
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Explain the functions of each layer in OSI and TCP/IP model.	Level 2: Applying
CO2	Elaborate functions of data link layer and its protocol	Level 5: Creating
CO3	Define the concepts of wired and wireless LAN.	Level 1: Remembering
CO4	Elaborate functions of network layer and transport layer.	Level 5:Evaluating

Name of the Programme: S.Y.B.Sc.I.T.	Programme Coordinator: Mrs. Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject: I.T.	Course: Computer Network Practical (Minor) Course Code: UIT3CNP	Course Coordinator: Mr. V. C. Nimkar
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Able to determine information about IP address.	Level V: Evaluating
CO2	To apply network commands for network configuration.	Level III: Applying
CO3	Able to configure different client server.	Level VI: Creating
CO4	Able to configure different network security tools.	Level VI: Creating

Name of the Programme: S.Y.B.Sc.I.T.	Programme Coordinator: Mrs. Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject: I.T.	Course: Software Engineering Practical (VSC) Course Code: UIT3SEP	Course Coordinator: Ms. Dnyanada Shete
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Evaluate products-start-ups implementing software process models in software engineering methods.	Level V: Evaluating
CO2	Design the diagram in an open-source tool: Star UML.	Level VI: Creating
CO3	Construct systems using design principles.	Level VI: Creating
CO4	Design the existing software using UML diagrams.	Level VI: Creating

Name of the Programme: S.Y.B.Sc.I.T.	Programme Coordinator: Mrs. Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject: I.T.	Course: Field Project (Major) Course Code: UIT3OJT	Course Coordinator: Mrs. I. S. Thakare
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Assess interests and abilities in their field of study.	Level V : Evaluating
CO2	Develop work habits and attitudes necessary for job success.	Level VI : Creating
CO3	Build a record of work experience.	Level VI : Creating
CO4	Create professional work reports	Level VI : Creating

Name of the Programme: S.Y.B.Sc.I.T.	Programme Coordinator: Mrs. Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject: I.T.	Course: Introduction to Mobile App Development (OE3) Course Code: UOE3MDT	Course Coordinator: Mr. P. P. Pawar
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Explain the fundamental concepts of mobile app development.	Level II: Understand
CO2	Explain Android environment and development tools.	Level II: Understand
CO3	Develop rich user interfaces by using layouts and controls.	Level VI: Create
CO4	Utilize UI components for android application development.	Level III: Apply

SEM IV

Name of the Programme: **S.Y.B.Sc.I.T.**	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **I.T.**	**Course: Core Java (Major)** **Course Code: UIT4CJT**	**Course Coordinator:** **Mrs. S. M. Huddar**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Explain the basic concepts of java programming.	Level II: Understand
CO2	Build java code using control structures, iteration.	Level III: Applying
CO3	Explain advance class features.	Level V: Evaluating
CO4	Elaborate multithreading, exception handling.	Level VI : Creating

Name of the Programme: **S.Y.B.Sc.I.T.**	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **I.T.**	**Course: Core Java Practical (Major)** **Course Code: UIT4CJP**	**Course Coordinator:** **Mrs. S. M. Huddar**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Build basic programs by using operators.	Level III: Applying
CO2	Make use of the data types, methods and constructors to write java program.	Level III: Applying
CO3	Create a program on inheritance, arrays and vectors.	Level VI : Creating
CO4	Make use of the multithreading concepts.	Level III: Applying

Name of the Programme: S.Y.B.Sc.I.T.	Programme Coordinator: Mrs. Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject: I.T.	Course: Operating System (Major) Course Code: UIT4OST	Course Coordinator: Ms. Nikita H.Patil
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Explain the role of operating system with its function and services.	Level 2: Understanding
CO2	Compare Various Algorithm used for CPU Scheduling and Disk Scheduling Algorithm.	Level 2: Understanding
CO3	Apply various concepts related with Deadlock to solve Problems.	Level 3: Applying
CO4	Describe basic concepts of Linux in terms of operating system.	Level 1: Remembering

Name of the Programme: S.Y.B.Sc.I.T.	Programme Coordinator: Mrs. Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject: I.T.	Course: Operating System Practical (Major) Course Code: UIT4OSP	Course Coordinator: Ms. Nikita H.Patil
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Describe basic installation of Linux / windows operating system.	Level 1:Remembering
CO2	Explain the use of various windows commands.	Level 2: Understanding
CO3	Create a program using expr, if and while loop.	Level 6: Creating
CO4	Make use of various shell commands with regular expressions.	Level 3: Applying

Name of the Programme: S.Y.B.Sc.I.T.	Programme Coordinator: Mrs. Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject: I.T.	Course: Data Structure (Minor) Course Code: UIT4DST	Course Coordinator: Ms. Shweta S. Patil
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Define the basics of algorithm analysis and array operations.	Level I : Remembering
CO2	Elaborate Operations on Linked lists, Stack and Queue.	Level VI : Creating
CO3	Explain Different searching and sorting techniques, tree and AVL tree structures.	Level V: Evaluating
CO4	Solve Problems based on graph and hashing techniques.	Level VI : Creating

Name of the Programme: S.Y.B.Sc.I.T.	Programme Coordinator: Mrs. Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject: I.T.	Course: Data Structure Practical (Minor) Course Code: UIT4DSP	Course Coordinator: Ms. Shweta S. Patil
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Develop different data structure techniques.	Level VI : Creating
CO2	Create Linked list, Stack and Queue Operations.	Level VI : Creating
CO3	Make use of searching and sorting techniques	Level III : Applying
CO4	Build a tree and display its elements	Level VI : Creating

Name of the Programme: S.Y.B.Sc.I.T.	Programme Coordinator: Mrs. Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject: I.T.	Course: Mobile Application Development Practical (SEC Practical) Course Code: UIT4MAP	Course Coordinator: Ms. P.P. Shenoy
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Explain Android environment and development tools.	Level II : Understanding
CO2	Develop rich user interfaces by using layouts and controls.	Level VI : Creating
CO3	Utilize UI components for android application development.	Level III : Applying
CO4	Create android application.	Level VI : Creating

Name of the Programme: S.Y.B.Sc.I.T.	Programme Coordinator: Mrs. Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject: I.T.	Course: Community Engagement Project (Major) Course Code: UIT4CEP	Course Coordinator: Mrs. S.D. Chandvekar
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Connects and extends knowledge about facts and theories.	Level II : Understanding
CO2	Demonstrate diversity of Communities and Cultures.	Level II : Understanding
CO3	Develop relationships to further community action.	Level VI : Creating
CO4	Choose the team members, their backgrounds, strengths and areas of growth.	Level III : Applying

Name of the Programme: S.Y.B.Sc.I.T.	Programme Coordinator: Mrs. Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject: I.T.	Course: Introduction to AI tools with MS Office Suite (OE4) Course Code: UOE4AIT	Course Coordinator: Mr. P. P. Pawar
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Define basic concepts of Artificial Intelligence.	Level I: Remember
CO2	Analyze data with AI integration in Word and Excel.	Level IV: Analyze
CO3	Create enhanced presentations with AI features in PowerPoint.	Level VI: Create
CO4	Develop workflow efficiency across Microsoft Office suite.	Level III: Apply

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Changu Kana Thakur

Arts, Commerce and Science College, New Panvel(Autonomous)

Department of Information Technology

Program Specific Outcomes

Name of the Programme: **B.Sc.I.T.**	**Programme Coordinator:** **Dr. J. S. Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
	After completing the programme in Information Technology, Student will be able to:	
PSO1	**Gain proficiency in the field of Networking and Security.**	
PSO2	**Develop Programming skills that help to meet the needs of the IT industry.**	
PSO3	**Build soft skills for employability and personality development in the Industrial environment.**	

Course Outcomes

Name of the Programme: **T.Y. B.Sc. I.T.**	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **I.T.**	**Course: Software Project Management** **Course Code: UIT5SPM**	**Course Coordinator: Mrs. P. S. Dandge**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Define software project management and project planning.	Level I: Remembering
CO2	Explain risk management and resource allocation.	Level VI: Creating
CO3	Determine the cost of project based on project duration.	Level V: Evaluating
CO4	Elaborate the quality of leadership skills and advance project management tools.	Level VI: Creating

Name of the Programme: **T.Y. B.Sc. I.T.**	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **I.T.**	**Course: Project Dissertation** **Course Code: UIT5PDP**	**Course Coordinator: Mrs. P. S. Dandge**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Identify a problem definition.	Level III: Applying
CO2	Estimate system requirement.	Level V: Evaluating
CO3	Design data flow diagram.	Level VI: Creating
CO4	Plan the system design phase in SDLC.	Level III: Applying

Name of the Programme: T.Y. B.Sc. I.T.	Programme Coordinator: Mrs. Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject: I.T.	Course: Internet of Things Course Code: UIT5IOT	Course Coordinator: Ms. N. S. Pophale
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Explain Design Principles for Connected Devices.	Level II: Understanding
CO2	Elaborate the concepts of Prototyping Embedded Devices, its Physical Design and Online Components.	Level VI: Creating
CO3	Classify types of designing 3D modules.	Level IV: Analyzing
CO4	Explain the Market perspective and Ethical concept of IOT.	Level IV: Analyzing

Name of the Programme: T.Y. B.Sc. I.T.	Programme Coordinator: Mrs. Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject: I.T.	Course: Internet of Things Practical Course Code: UIT5ITP	Course Coordinator: Ms. N. S. Pophale
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Make use of Raspberry pi to display LED pattern, Time over 4-digit 7-segment and control whatsapp.	III: Applying
CO2	Build the interfacing of Raspberry pi with Oscilloscope, Fingerprint sensor, GPS Module.	Level VI: Creating
CO3	Create basic Home Automation using Raspberry Pi.	Level VI: Creating
CO4	Construct an application to monitor visitor using Raspberry Pi and Pi Camera.	Level VI: Creating

Name of the Programme: T.Y.B.Sc.I.T.	Programme Coordinator: Mrs. Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject: I.T.	Course: Advance Web Programming Course Code: UIT5AWP	Course Coordinator: Ms.D.R.Shete
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Explain the basic components concept of C# .NET framework language along with .NET framework.	Level VI: Creating
CO2	Elaborate advanced web concept in ASP.NET.	Level VI: Creating
CO3	Explain dynamic web page using ADO.NET fundamentals.	Level V: Evaluating
CO4	Make use of AJAX ,XML and Jquary programming skill in ASP.NET.	Level III: Apply

Name of the Programme: T.Y. B.Sc. I.T.	Programme Coordinator: Mrs. Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject: I.T.	Course: Advance Web Programming Practical Course Code: UIT5WPP	Course Coordinator: Ms. D. R. Shete
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Build console application in C#.	Level VI: Creating
CO2	Develop web applications with strong object – oriented principles.	Level VI: Creating
CO3	Develop connection between web pages using ASP.NET AJAX.	Level VI: Creating
CO4	Build dynamic web page in ASP.NET , XML and Jquery.	Level III: Applying

Name of the Programme: T.Y.B.Sc.I.T.	Programme Coordinator: Mrs. Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject: I.T.	Course: Linux System Administration Course Code: UIT5LSA	Course Coordinator: Ms. P.P. Shenoy
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Explain various commands to manage system level processes and handle software management on linux platforms.	Level II: Understanding
CO2	Elaborate storage and user management on linux platforms.	Level VI: Creating
CO3	Explain the detailed steps and files for configuration of different types of servers.	Level V: Evaluating
CO4	Make use of shell level programming in linux.	Level III: Applying

Name of the Programme: T.Y.B.Sc.I.T.	Programme Coordinator: Mrs. Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject: I.T.	Course: Linux System Administration Practical Course Code: UIT5LAP	Course Coordinator: Ms. P.P. Shenoy
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Make use of administrative level commands for user and storage management and Networking.	Level III: Apply
CO2	Construct the firewall rules for securing server with iptables and setup cryptographic services on linux machine.	Level VI: Creating
CO3	Create the configuration for different types of servers.	Level VI: Creating
CO4	Develop shell scripting programs on linux platform.	Level VI: Creating

Name of the Programme: T.Y.B.Sc.I.T.	Programme Coordinator: Mrs. Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject: I.T.	Course: Enterprise Java Course Code: UIT5ENJ	Course Coordinator: Mrs. S. M. Huddar
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Define servlet with java applications and database connectivity.	Level I: Remembering
CO2	Elaborate the fundamentals and core concepts of cookies, session, file uploading, file downloading and request dispatcher, EJB applications and JND.	Level VI: Creating
CO3	Explain JSP applications using JSTL and deploy EJB application and JSF applications.	Level V: Evaluating
CO4	Make use of knowledge of application using concept of Persistence, Object/Relational Mapping, JPA and Hibernate.	Level III: Applying

Name of the Programme: T.Y.B.Sc.I.T.	Programme Coordinator: Mrs. Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject: I.T.	Course: Enterprise Java practical Course Code: UIT5EJP	Course Coordinator: Mrs. S. M. Huddar
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Create applications using servlet with cookies and session.	Level VI: Creating
CO2	Develop the servlet IO, file applications and JSP application.	Level VI: Creating
CO3	Construct JSP, JSTL, EL and EJB applications.	Level III: Applying
CO4	Build the EJB applications with different types of beans and JPA applications.	Level III: Applying

SEM VI

Name of the Programme: **T.Y.B.Sc.I.T.**	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **I.T.**	**Course: Software Quality Assurance** **Course Code: UIT6SQA**	**Course Coordinator:** **Mrs. P. S. Dandge**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Define quality of software project.	Level I: Remembering
CO2	Explain testing and different testing method.	Level V: Evaluating
CO3	Elaborate software verification, validation and v test model.	Level VI: Creating
CO4	Classify level of testing.	Level IV: Analyzing

Name of the Programme: **T.Y.B.Sc.I.T.**	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **I.T.**	**Course: Security in Computing** **Course Code: UIT6SIC**	**Course Coordinator:** **Mr. P. P. Pawar**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Evaluate and contrast computing security issues.	Level V: Evaluating
CO2	Explain computing security vulnerabilities and threats.	Level V: Evaluating
CO3	Determine alternative countermeasures and controls.	Level V: Evaluating
CO4	Classify virtual machines and cloud computing.	Level VI: Creating

Name of the Programme: T.Y.B.Sc.I.T.	Programme Coordinator: Mrs. Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject: I.T.	Course: Security in Computing Practical Course Code: UIT6SCP	Course Coordinator: Mr. P. P. Pawar
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Design Routers by OSPF, NTP, SSH.	Level VI: Creating
CO2	Create AAA authentication.	Level VI: Creating
CO3	Apply & verify Extended Numbered ACL.	Level III: Applying
CO4	Test IPV6 by using firewalls & ACL.	Level VI: Creating

Name of the Programme: T.Y.B.Sc.I.T.	Programme Coordinator: Mrs. Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject: I.T.	Course: Principles of Geographic Information Systems Course Code: USIT6GIS	Course Coordinator: Mr. V. C. Nimkar
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Define importance of GIS and its use in representation of the real world.	Level I: Remembering
CO2	Explain data capture, storage, analysis and output in GIS.	Level V: Evaluating
CO3	Elaborate Map scale, projection and co-ordinate systems in GIS.	Level VI: Creating
CO4	Explain Spatial data analysis and Data visualization.	Level V: Evaluating

Name of the Programme: T.Y.B.Sc.I.T.	Programme Coordinator: Mrs. Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject: I.T.	Course: Principles of Geographic Information Systems Practicals Course Code:USIT6GIP	Course Coordinator: Mr.V.C.Nimkar
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Utilize QGIS software for managing vector and raster data.	Level III: Applying
CO2	Build maps with attributes and different data sets.	Level VI: Creating
CO3	Design georeferencing for maps.	Level VI: Creating
CO4	Make use of advanced operations like Nearest Neighborhood analysis, automating map creation etc.	Level III: Applying

Name of the Programme: T.Y.B.Sc.I.T.	Programme Coordinator: Mrs. Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject: I.T.	Course: Business Intelligence Course Code: UIT6BUI	Course Coordinator: Mrs. I.S. Thakare
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Explain the framework of the computerized Business Intelligence System and Decision support system.	Level I: Remembering
CO2	Analyse data by choosing relevant model as an algorithm for respective applications.	Level VI: Creating
CO3	Explain classification and clustering algorithms.	Level IV: Analyzing
CO4	Elaborate the applications of Business Intelligence.	Level V: Evaluating

Name of the Programme: T.Y.B.Sc.I.T.	Programme Coordinator: Mrs. Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject: I.T.	Course: Business Intelligence Practical Course Code: UIT6BIP	Course Coordinator: Mrs. I.S. Thakare
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Import legacy data from sources and apply ETL process on it.	Level I: Remembering
CO2	Apply classification and clustering algorithms.	Level VI: Creating
CO3	Apply linear and logistic regression algorithms.	Level IV: Analyzing
CO4	Examine what if analysis for data visualization.	Level V: Evaluating

Name of the Programme: T.Y.B.Sc.I.T.	Programme Coordinator: Mrs. Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject: I.T.	Course: IT Service Management Course Code: UIT6ISM	Course Coordinator: Mrs. S. R. Paringe
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Define IT Service management and its framework.	Level I: Remembering
CO2	Demonstrate four dimensions of service management.	Level II : Understanding
CO3	Explain ITIL service value system, service value chain, and continual improvement model.	Level V: Evaluating
CO4	Elaborate ITIL management practices.	Level VI : Creating

Name of the Programme: T.Y.B.Sc.I.T.	Programme Coordinator: Mrs. Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject: I.T.	Course: Advanced Mobile Programming Course Code: UIT6AMP	Course Coordinator: Mrs. S. R. Paringe
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Demonstrate basic android app.	Level II: Understanding
CO2	Design activity life cycle.	Level VI: Creating
CO3	Evaluate different layouts in android app.	Level V: Evaluating
CO4	Make use of intents, events, listeners and menus, dialog in mobile programming.	Level III: Applying

Name of the Programme: T.Y.B.Sc.I.T.	Programme Coordinator: Mrs. Jyotsna Thakur	Head of the Department: Mrs. I. S. Thakare
Subject: I.T.	Course: Project Implementation Course Code: UIT6PIP	Course Coordinator: Mr. V.C.Nimkar, Mr. P.P. Pawar
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Design user interface for input.	Level VI: Creating
CO2	Develop coding for the system.	Level VI: Creating
CO3	Examine various system testing.	Level IV: Analyzing
CO4	Predict the future scope of project.	Level VI: Creating

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Department of Information Technology

Program Specific Outcomes

Name of the Programme: **M.Sc.I.T.**	**Programme Coordinator:** **Dr. J. S. Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
	After completing the programme in Information Technology, Student will be able to:	
PSO1	**Apply IT in the field of Data Science, AI, Networking, Security and Cloud Computing.**	
PSO2	**Design solutions for complex IT problems.**	
PSO3	**Develop research, investigation skills and achieve professional competency in the field of I.T.**	

Course Outcomes

Name of the Programme: **M.Sc.I.T-Part I**	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **I.T.**	**Course: Data Science** **Course Code: PIT1DST**	**Course Coordinator:** **Ms. N. S. Pophale**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Explain layered framework and technology stack in data science.	Level II: Understanding
CO2	Elaborate management layers in data science.	Level VI: Creating
CO3	Explain assess supersteps in data science.	Level VI: Creating
CO4	Utilize transform and report supersteps.	Level III: Applying

Name of the Programme: **M.Sc.I.T-Part I**	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **I.T.**	**Course: Image Processing** **Course Code: PIT1IPT**	**Course Coordinator:** **Ms. D. R. Shete**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Explain basic fundamental concepts of digital image processing.	Level V: Evaluating
CO2	Examine the images in the frequency domain using various transforms.	Level IV: Analyzing
CO3	Evaluate the techniques for image enhancement, restoration & Categorise of various compression techniques.	Level V: Evaluating
CO4	Interpret Image compression, image segmentation, and representation techniques.	Level V: Evaluating

Name of the Programme: **M.Sc.I.T-Part I**	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **I.T.**	**Course: Soft Computing Techniques** **Course Code: PIT1SCT**	**Course Coordinator:** **Mr. P. P. Pawar**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Explain soft computing techniques and their roles in building intelligent machines.	Level V: Evaluating
CO2	Determine the use of Artificial Intelligence, Fuzzy Login & Genetic Algorithm	Level V: Evaluating
CO3	Make use of Fussy Logic Network for classification and regression problems.	Level III: Applying
CO4	Evaluate soft computing approaches and solutions for a genetic algorithm & given problem	Level VI: Creating

Name of the Programme: **M.Sc.I.T-Part I**	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **I.T.**	**Course: Practical of Data Science + Practical of Image Processing** **Course Code: PIT1PR1**	**Course Coordinator:** **Ms. N. S. Pophale** **Ms. D. R. Shete**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Construct program using utilities,auditing and data visualization in data science.	Level III : Applying
CO2	Build a program to retrieve, assess, process, transform and organise the data in data science.	Level VI : Creating
CO3	Design a program for image transformation.	Level VI : Creating
CO4	Design a program for Color Image Processing.	Level VI : Creating

Name of the Programme: **M.Sc.I.T-Part I**	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: I.T.	**Course: Cloud Computing** **Course Code: PIT1CCT**	**Course Coordinator:** **Ms. S. S. Patil** **Ms. N. H. Patil**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Define cloud computing and various virtualization technique.	Level I: Remembering
CO2	Classify the types of cloud and cloud computing architecture.	Level II: Understanding
CO3	Explain cloud security mechanism.	Level V: Evaluating
CO4	Elaborate advanced architecture and cloud delivery model.	Level VI: Creating

Name of the Programme: **M.Sc.I.T-Part I**	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare.**
Subject: I.T.	**Course: Practical of Cloud Computing + Practical of Soft Computing Techniques Course** **Code: PIT1PR2**	**Course Coordinator:** **Ms. S. S. Patil** **Mr. P.P.Pawar**
	After completing the course, Student will be able to	Bloom Taxonomy Level(BTL)
CO1	Create web services using java application (Netbeans).	Level VI: Creating
CO2	Make use of virtualization using VMWare ESXi server and managing with vCenter.	Level III: Applying
CO3	Design a simple linear neural network model and Back Propagation	Level VI: Creating
CO4	Make use of a program for in fuzzy logic and Genetic Algorithms.	Level III: Applying

Name of the Programme: **M.Sc.I.T-Part I**	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **I.T.**	**Course: Research Methodology** **Course Code: PIT1RMT**	**Course Coordinator:** **Mrs. P. S. Dandge**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Define the role business research	Level I: Remembering
CO2	Classify stages of the research Classify stages of the research and Measurement Sampling and Field work	Level VI: Creating
CO3	Distinguish different research methods and measurement concepts	Level IV: Analyzing
CO4	Explain Different concepts of data analysis	Level V: Evaluating

SEM II

Name of the Programme: **M.Sc.I.T-Part 1**	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **I.T.**	**Course: Big Data Analytics** **Course Code: PIT2BDA**	**Course Coordinator:** **Ms. N. S. Pophale**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Explain concept of Data and Big Data	Level II: Understanding
CO2	Explain clustering and association algorithm	Level V: Evaluating
CO3	Solve problem based on classification methods	Level III: Applying
CO4	Elaborate Data Products and Patterns with Hadoop in Data science	Level VI: Creating

Name of the Programme: **M.Sc.I.T-Part 1**	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **I.T.**	**Course: Modern Networking** **Course Code: PSC2MNT**	**Course Coordinator:** **Mrs. S. D. Chandvekar**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	List the elements of Modern Networking	Level I. Remembering
CO2	Classify different levels of Software Define Network	Level IV. Analyzing
CO3	Explain Network Virtualization Function and VLAN	Level V. Evaluating
CO4	Summarizing Quality of Service, Quality of Experience & Modern Network Architecture.	Level II. Understanding

Name of the Programme: **M.Sc.I.T-Part 1**	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **I.T.**	**Course: Natural Language Processing** **Course Code: PIT2NLT**	**Course Coordinator:** **Mr. P.P. Pawar**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Explain the field of natural language processing	Level II: Understanding
CO2	Design various POS tagging techniques and parsers	Level VI: Creating
CO3	Design, implement and test algorithms for semantic and pragmatic analysis.	Level VI: Creating
CO4	Apply NLP techniques to design real world NLP applications.	Level III: Applying

Name of the Programme: **M.Sc.I.T-Part I**	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **I.T.**	**Course: Practical of Big Data Analytics + Practical of Modern Networking** **Course Code: PIT2PR1**	**Course Coordinator:** **Ms. N. S. Pophale** **Mrs. S.D. Chandvekar**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Build hadoop and HDFS & develop application in MongoDB	Level VI : Creating
CO2	Construct a program using MapReduce & design an application in Hive	Level VI : Creating
CO3	Build IP SLA Tracking & Path Control & create AS-PATH attribute,	Level III : Applying
CO4	Construct IBGP & EBGP Session & develop Inter VLAN Routing	Level III : Applying

Name of the Programme: **M.Sc.I.T-Part 1**	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **I.T.**	**Course: Microservice Architectures** **Course Code: PIT2MAT**	**Course Coordinator:** **Mrs. S. D. Chandvekar**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Define Micro services Architecture & Micro services Boundaries. Elaborate Service Design and Micro Services in Practice	Level I. Remembering
CO2	Explain ASP.Net Core, Docker and Continuous Integration	Level II. Understanding
CO3	Explain Data Services & Micro Services Ecosystems	Level V. Evaluating
CO4	Create Data Services	Level VI. Creating

Name of the Programme: **M.Sc.I.T-Part I**	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **I.T.**	**Course: Practical of Microservices Architectures + Practical of Natural Language Processing** **Course Code: PIT2PR2**	**Course Coordinator:** **Mrs. S. D. Chandvekar** **Mr. P.P.Pawar**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Define Micro services Architecture & Micro services Boundaries , Elaborate Service Design and Micro Services in Practice	Level I : Remembering
CO2	Explain ASP.Net Core, Docker and Continuous Integration	Level II : Understanding
CO3	Apply various text pre-processing techniques and N-Gram Model for any given text.	Level III : Applying
CO4	Develop morphological analysis, grammar checker word generation and different POS taggers.	Level III : Applying

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Department of Information Technology

Program Specific Outcomes

Name of the Programme: **M.Sc.I.T.**	**Programme Coordinator:** **Dr. J. S. Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
	After completing the programme in Information Technology, Student will be able to:	
PSO1	**Apply IT in the field of Data Science, AI, Networking, Security and Cloud Computing.**	
PSO2	**Design solutions for complex IT problems.**	
PSO3	**Develop research, investigation skills and achieve professional competency in the field of I.T.**	

Course Outcomes

Name of the Programme: M.Sc.I.T-Part II	**Programme Coordinator: Mrs. Jyotsna Thakur**	**Head of the Department: Mrs. I. S. Thakare**
Subject:I.T.	**Course: Advanced AI (Major) Course Code: PIT3AIT**	**Course Coordinator: Mrs. S. R. Paringe**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Define the fundamental concepts of Advanced AI and its applications.	Level I: Remembering
CO2	Explain various machine learning algorithms to solve real-world problems.	Level II: Understanding
CO3	Determine the process of image formation and the role of camera parameters.	Level V: Evaluating
CO4	Elaborate Q-learning algorithm and Robotic application Domain.	Level VI: Creating

Name of the Programme: M.Sc.I.T-Part II	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject:I.T.	**Course: Machine Learning (Major)** **Course Code: PIT3MLT**	**Course Coordinator: Mrs. S.R. Paringe**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Explain the key issues in Machine Learning and its associated applications in intelligent business and scientific computing.	Level II. Understanding
CO2	Adapt the knowledge about classification and regression techniques where a learner will be able to explore his skill to generate data base knowledge.	Level VI. Creating
CO3	Elaborate and implement the techniques for extracting the knowledge using machine learning methods.	Level VI. Creating
CO4	Apply the algorithms to a real-world problem, optimize the models learned	Level III. Applying

Name of the Programme: **M.Sc.I.T-Part II**	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **I.T.**	**Course: Cyber Forensics (Major)** **Course Code: PIT3CFT**	**Course Coordinator:** **Mrs. S. D. Chandvekar**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Explain the cyber forensics with standard operating procedures.	Level II. Understanding
CO2	Elaborate recovery of the data from the hard disk with legal procedure.	Level IV. Creating
CO3	Explain recovery and analyse the data using forensics tool	Level V. Evaluating
CO4	Adapt the knowledge of network analysis and use it for analysing the internet attacks.	Level IV. Creating

Name of the Programme: **M.Sc.I.T-Part II**	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **I.T.**	**Course: Practical: Practical: Practical of Advanced AI + Practical of Machine Learning (Major)** **Course Code: PIT3PR1**	**Course Coordinator:** **Mrs. S.R. Paringe**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Explain the types of python libraries going to be used in AI Algorithms.	Level V: Evaluating
CO2	Develop a program to retrieve precise output by using Learning methods	Level VI: Creating
CO3	Develop machine learning models.	Level VI: Creating
CO4	Estimate a program to retrieve precise output by using ANN.	Level VI: Creating

Name of the Programme: **M.Sc.I.T-Part II**	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **I.T.**	**Course: Practical: Security Breaches and Countermeasures (Elective)** **Course Code: PIT3SBT**	**Course Coordinator:** **Mr.V.C. Nimkar**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Classify different security breaches that can occur.	Level II : Understanding
CO2	Identify vulnerabilities in the systems; breach the security of the system, and threats due to malware.	Level I : Remembering
CO3	Develop social engineering and educate people to be Careful from attacks due to it.	Level VI : Creating
CO4	Evaluate vulnerabilities in the Web Servers, Applications and newer technologies like mobiles, IoT and computing.	Level V : Evaluating

Name of the Programme: **M.Sc.I.T-Part II**	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **I.T.**	**Course: Practical: Technical Writing and Entrepreneurship Development (Elective)** **Course Code: PIT3TWT**	**Course Coordinator:** **Mrs. S. R. Paringe**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Develop technical documents that meet the requirements with standard guidelines.	Level III: Applying
CO2	Discover Better Quality Content Which Ranks faster at Search Engines.	Level IV: Analyzing
CO3	Evaluate the essentials parameters of effective Social Media Pages.	Level V: Evaluating
CO4	Discuss importance of innovation and entrepreneurship.	Level VI: Creating

Name of the Programme: **M.Sc.I.T-Part II**	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **I.T.**	**Course: Practical: Practical of Cyber Forensics + Practical of Security Breaches and Countermeasures (Elective)** **Course Code: PIT3PR2**	**Course Coordinator:** **Mr. V.C. Nimkar** **Mrs. S. D. Chandvekar**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Elaborate recovery of the data from the hard disk with legal procedure.	Level IV. Creating
CO2	Explain recovery and analyse the data using forensics tool	Level V. Evaluating
CO3	Make use of tools to perform foot printing and reconnaissance	Level III : Applying
CO4	Determine use of Enumeration and network scanning tools	Level III : Applying

Name of the Programme: **M.Sc.I.T-Part II**	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **I.T.**	**Course: Practical: Practical of Cyber Forensics + Practical of Technical Writing and Entrepreneurship Development (Elective)** **Course Code: PIT3PR3**	**Course Coordinator:** **Mrs. S. D. Chandvekar**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Elaborate recovery of the data from the hard disk with legal procedure.	Level IV. Creating
CO2	Explain recovery and analyses the data using forensics tool	Level V. Evaluating
CO3	Build effective Blogs and Social Media Pages.	Level III: Applying
CO4	Create Resumes, Research Proposals and Research Report.	Level VI: Creating

Name of the Programme: **M.Sc.I.T-Part II**	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **I.T.**	**Course: Practical:** Research Project **(Elective)** **Course Code:** PIT3RPP	**Course Coordinator:** **Mrs. S. D. Chandvekar**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Identify a problem definition.	Level III. Applying
CO2	Estimate system requirement.	Level V. Evaluating
CO3	Design data flow diagram.	Level VI. Creating
CO4	Plan the system design phase in SDLC.	Level VI. Creating

Name of the Programme: **M.Sc.I.T-Part II**	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **I.T.**	**Course: Practical:** Blockchain **(Major)** **Course Code:** PIT4BCT	**Course Coordinator:** **Mrs. S. R. Paringe**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Define the structure of blockchain system such as bitcoin and ethereum.	Level I: Remembering
CO2	Make use of different components in Solidity Programming.	Level III: Applying
CO3	Explain concepts of Hyper ledger, Smart Contracts & tokens, Mining Ether and crypto economics.	Level V: Evaluating
CO4	Elaborate the development of blockchain, EthereumD, Dapp applications.	Level VI: Creating

Name of the Programme: **M.Sc.I.T-Part II**	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **I.T.**	**Course: Practical:** Robotic Process Automation **(Major)** **Course Code:** PIT4RPT	**Course Coordinator:** **Ms. P.P. Shenoy**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Define the scope and techniques of robotic process automation using UIPath Studio.	Level I : Remembering
CO2	Explain the concept of sequence, flowchart and control flow used to manipulate data.	Level V : Evaluating
CO3	Make use of Exception Handling, Debugging and logging to handle user events and Assistant bots.	Level III : Applying
CO4	Elaborate the deployment and maintenance of bot along with maintaining the code.	Level VI : Creating

Name of the Programme: **M.Sc.I.T-Part II**	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **I.T.**	**Course: Practical:** Deep Learning **(Major)** **Course Code:** PIT4DLT	**Course Coordinator:** **Mrs. S. D. Chandvekar**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Examine basics of mathematical foundation that will help the learner to understand the concepts of Deep Learning.	Level IV :Analyzing
CO2	Define and describe model of deep learning	Level I.: Remembering
CO3	Design and implement various deep supervised learning architectures for text & image data.	Level VI. Creating
CO4	Design and implement various deep learning models and architectures.	Level VI. Creating

Name of the Programme: **M.Sc.I.T-Part II**	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **I.T.**	**Course: Practical: Practical of Blockchain + Practical of Robotic Process Automation + Practical of Deep Learning (Major)** **Course Code: PIT4PR1**	**Course Coordinator:** **Mrs. S. R. Paringe** **Mrs. S. D. Chandvekar**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Build programs for blockchain in Python.	Level III: Applying
CO2	Create blockchain and exhibit its use.	Level VI: Creating
CO3	Develop Automation of any process using recording and applications on excel file.	Level VI. Creating
CO4	Make use of tools to design various interface.	Level III: Applying

Name of the Programme: **M.Sc.I.T-Part II**	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **I.T.**	**Course: Human Computer Interaction (Elective)** **Course Code: PIT4HCT**	**Course Coordinator:** **Mr. V.C. Nimkar**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Define HCI principles that influence a system's interface design.	Level I: Remembering
CO2	Explain techniques used for any of the proposed systems.	Level II: Understanding
CO3	Explain the different design implementation systems.	Level II: Understanding
CO4	Elaborate different evaluation techniques.	Level VI: Creating

Name of the Programme: **M.Sc.I.T-Part II**	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **I.T.**	**Course: Security Operations Center (Elective)** **Course Code: PIT4SOT**	**Course Coordinator:** **Ms. P.P. Shenoy**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Classify different security breaches that can occur.	Level I :Remembering
CO2	Identify vulnerabilities in the systems, breach the security of the system, and threats due to malware.	Level II : Understanding
CO3	Develop social engineering and educate people to be Careful from attacks due to it.	Level VI : Creating
CO4	Evaluate vulnerabilities in the Web Servers, Applications and newer technologies like mobiles, IoT and computing.	Level IV : Analyze

Name of the Programme: **M.Sc.I.T-Part II**	**Programme Coordinator:** **Mrs. Jyotsna Thakur**	**Head of the Department:** **Mrs. I. S. Thakare**
Subject: **I.T.**	**Course: Project Implementation and Viva** **Course Code: PIT4PIP**	**Course Coordinator:** **Mrs. S. D. Chandvekar**
	After completing the course, Student will be able to	**Bloom Taxonomy Level(BTL)**
CO1	Design user interface for input	Level VI. Creating
CO2	Develop coding for the system	Level VI. Creating
CO3	Examine various system testing.	Level IV. Analysing
CO4	Predict the future scope of project	Level VI. Creating