SRI RAMAKRISHNA MISSION VIDYALAYA COLLEGE OF ARTS AND SCIENCE (AUTONOMOUS), COIMBATORE - 641 020

Name of the Programme: B.Sc Computer Science   **Month &Year of Revision:** May 2020

S.No.	Course Title	Course Code	% of Revision
1	CORE: FUNDAMENTALS OF IT	20UCS/USC1C01	100
2	CORE : INTERNET OF THINGS	20UCS/USC2C03	100
3	ELECTIVE: DATA SCIENCE USING R	20UCS/USC6ED2	100
4	CORE: JAVA PROGRAMMING	20UCS/USC3C07	20
5	CORE: .NET TECHNOLOGY (C#)	20UCS/USC4C08	80
6	CORE: WEB TECHNOLOGY	20UCS/USC5C12	20
7	CORE: OBJECT ORIENTED MODELLING AND DESIGN WITH UML AND SOAD	20UCS/USC5C13	80
8	CORE: SOFTWARE ENGINEERING	20UCS/USC6C14	60
9	CORE: PYTHON PROGRAMMING	20UCS/USC6C15	80

Note:

No.of Courses offered by the Department (A)	28
No.of Courses revised in BoS (20% Revision) (B)	09
Formula for Syllabus revision: (B/A)*100	32.14%

Course Title	Course code	Unit	Existing Content	Modified/Revised content	% of Revision/ Modification
CORE: JAVA PROGRAMMING	20UCS/USC3C07	V	**J2EE Overview**: Distributed Multitiered Applications-J2EE Containers -Packaging - Development Roles. **EJB:** Enterprise Bean-Session Bean- Entity Bean- Message Driven Bean-The Life Cycles of Enterprise Beans. **Servlet:** Servlet Life Cycle-Sharing Information-Initializing a Servlet-Writing Service Methods	JDBC: Environment- Driver Types- Connections-Statements Object - **Data Types** - Create Database-Select Database-Drop Database-Create Tables-**Drop Tables** – Insert Records-Update Records – Delete Records.	20
Total Percentage of course content Modified/Revised					**20%**

Course Title	Course code	Unit	Existing Content	Modified/Revised content	% of Revision/ Modification
CORE: .NET TECHNOLOGY (C#)	20UCS/USC4C08	I	Evaluation of .Net- Overview of .Net Framework- Exploring Visual studio IDE- Basic IDE operations. C# Fundamentals: Literals- Variables- Data types – Value types – Reference Types- Declaration of variables- Initialization of variables- Default values- constant variables- scope of variables. Operators and expressions: Arithmetic operator-relational operato9r- Logical operator- Assignment operator- Increment and decrement operator- Condition operator- Bitwise operator-type conversions	Console Application: Introduction to C# (1-5) – Understanding .Net: The C# Environment (11-16) – Overview of C# – Adding Comments – Command Line Arguments (18-25) – Literals, **Variables and Data Types**(34-49) - Classes and Objects	20

		II	Decision making and branching: Selection statements: if, If else, Nested If, Else if ladder, Switch statement. Decision making and looping: While, do While, For,for each -Jump Statement: Goto, Break, Continue.	Graphical User Interfaces with Windows Forms:Introduction – Windows Forms – Event Handling – Control Properties and Layout– Labels, TextBoxes and Buttons – GroupBoxes and Panels – CheckBoxesand**RadioButtons** – PictureBoxes – Tooltips – NumericUpDown Control – Mouse-Event Handling – **Keyboard-Event Handling**	**20**
		III	Handling arrays: Introduction- One dimensional array- Creating an array- Two dimensional array- Variable size arrays- system array class- array list class. Manipulating strings: Creating strings- string methods- Inserting methods- Comparing strings- Finding substrings-Mutable of strings- Arrays of strings	Menus – MonthCalendar Control – DateTimePicker Control – LinkLabel Control – ListBox Control – CheckedListBox Control – ComboBox Control – TreeView Control – **ListView Control – TabControl** – Multiple Document Interface (MDI) Windows – Visual Inheritance (441-501)	**20**
		IV	Class and objects: OOPS-Defining a class- Adding variables- Adding methods- Member access modifier- Creating objects- Accessing class members- Constructors- Overload constructors-Static members- Static constructors- private constructor- Copy constructor-Destructor- This reference. Inheritance: Classical inheritance- Defining a sub class- Multi level inheritance-Hierarchical Inheritance-Over riding methods-hiding methods-Abstract class- Abstract methods.	ADO.NET Overview (685-687) – Using Database Connections (688-692) – Fast Data Access: The Data Reader – Managing Data and Relationships: The DataSet Class (701-714)-Populating a DataSet – **Persisting DataSet Changes** – Working with ADO.NET (721-733) –The DataGrid Control (735-749) - Data Binding – Visual Studio.Net and Data Access (750-769)	**20**
			Total Percentage of course content Modified/Revised		*80%*

Course Title	Course code	Unit	Existing Content	Modified/Revised content	% of Revision / Modification
CORE: WEB TECHNOLOGY	20UCS/USC5C12			Overview of HTML5 – HTML5 and its Essentials – Exploring New Features of HTML5 – Fundamentals of HTML – Working with Text – Organizing Text in HTML – Working with Links and URLs – Creating Tables – Working with Forms – Working with Multimedia.	20

			Total Percentage of course content Modified/Revised		_20%_

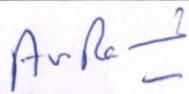| Course Title	Course code	Unit	Existing Content	Modified/Revised content	% of Revision / Modification
CORE: OBJECT ORIENTED MODELLING AND DESIGN WITH UML AND SOAD	20UCS/USC5C13	I	Introduction- Overview of object oriented system development – Object basics- The unified Process- Modelling concepts- Modelling as a design technique- Analysis and modelling- UML diagrams- Use case modelling- Class modelling – State modelling- Interaction modelling Object constraint language- Inception- Evolutionary Requirements – Domain models- System sequence diagrams – Operation contracts	Introduction-Objects and classes-Data Abstraction-Inheritance and Generalization-Disinheritance-Data Encapsulation-Aggregation-Abstract Classes-Polymorphism-Association and Links-Discrimininators-Metaclass-Metadata-Reification-Constraints-Container class-Generic function	20
		II	Requirements to design – Design patterns- Logical architecture- Package diagram- Design patterns- Model, View, Control pattern- Detailed design- Object design with GRASP pattern – Detailed class diagram with visibility	Unified Modeling Language: Introduction - Object Relationships- UML Building Blocks-UML Diagrams. Object-Oriented Analysis: Introduction-Object Modeling Technique(OMT)-Object diagram-State Diagram-Data flow Diagram-Analysis-Domain Class Model Analysis .	20

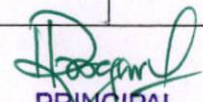|		III	Mapping design to code- Test driven development and refactoring- UML tools and UML as blueprint.	Object Oriented Design: Introduction-Consolidating Three Models to get operations on Classes-Design Algorithms-Design Optimization-Implementation of control for External Interactions. Object-Oriented Databases: Introduction-Relation vs Object -Oriented Data bases-Advantages and disadvantages of Object -Oriented Data bases-Comparison between OODBMS and RDBMS-Architecture of Object -Oriented Data bases-Usersof Oriented Data base Management Systems-Commercial object oriented Database Management Systems-Modeling a Logical Database Schema.	20
20		IV	More patterns- Analysis update- Objects with responsibilities- applying design patterns- Architectural Analysis- Logical Architecture refinement – Package design- Persistence framework with patterns	**Design Patterns: Introduction- Design Pattern-Activities in Applying Design Patterns-Classification of Design patterns-Describing Design Pattern-Implementation of Design Patterns-Anti-patterns-Refactoring.** **Case Study: ATM Machine- Library Management System-Passport Automation system.**	20
Total Percentage of course content Modified/Revised					*80%*

Course Title	Course code	Unit	Existing Content	Modified/Revised content	% of Revision / Modification
CORE: SOFTWARE ENGINEERING	20UCS/USC6C14	I	Introduction — software engineering the software process software process models — the linear sequential model — the proto type model — the RAD model — evolutionary software process models — component based development — the formal methods model — fourth generation techniques.	Defining Software - Software Application Domain - Legacy Software (3-9) Process Model - Waterfall Model - Incremental Process Models - Spiral Model - Specialized Process Models - The Unified Process	20
		II	Software design and software engineering — the design process — design principles — design concepts — effective modular design — design heuristics for effective modularity — the design model — design documentation.	Design Concepts: The Design Process - Design concepts - Design Model Architectural Design: Software Architecture - Architectural Genres - Architectural Styles - Architectural Design - Assessing Alternative Architectural Designs - Architectural Mapping Using Data Flow	20

			Quality concepts. — the quality movement — software quality assurance — software reviews — formal technical reviews — formal approaches to SQA — statistical software quality assurance — software reliability — mistake proofing for software — the ISO 9000 quality standards — the SQA plan.	Risk Management: Software Risks - Risk Identification - Risk Projection - **Risk Refinement - RMMM** Software Quality Assurance - Background Issues - Elements of SQA - SQA Tasks - Formal Approaches to SQA - Statistical Software Quality Assurance - Software Reliability -The SQA Plan	20
Total Percentage of course content Modified/Revised					*60%*

Course Title	Course code	Unit	Existing Content	Modified/Revised content	% of Revision / Modification

CORE: PYTHON PROGRAMMING	20UCS/USC6C15	II	Functions: passing parameters, variable number of arguments – scope – passing functions – mapping functions in a dictionary – lambda.
			        Modules: standard – sys – math – time – dir.
			        Error Handling: Exception hierarchy – handling multiple exceptions.
				NumPy: Introduction to NumPy – The Basics of NumPy arrays–Computation on NumPy Arrays–Aggregations: **Min. Max,** and Everything in Between – Computation on Arrays.	20

		III	File handling: Writing and reading / parsing binary data, text& xml files.
			    Object- oriented programming – inheritance, polymorphism, creating classes.
			    Processes and threading – delegating work.
				Pandas: Introduction to pandas - Data manipulation with pandas–Operating on null values, hierarchical indexing – Combining Datasets – Aggregation and **Grouping**.	20

		IV	Regular expressions – character classes, grouping and capturing, assertions and flags.
			    Database Programming: DBM & SQL databases.
			    Web Programming: Building CGI applications – Django framework.
				Matplotlib: Introduction to Matplotlib– Visualization with Matplotlib – Simple line plots – scatter plots – visualizing errors – Histograms, **binnings and density** – Customizing plots – Multiple sub plots – Text annotation.	20

		V	IOT – Definition and Overview
			    Middleware: platform, communication and software
			    Developing IOT: Case study – Weather Monitoring System.
				Sci-kit Learn: Introduction to Scikit Learn: Data representation – Hyper parameters &Validation: Selecting the best model – Learning Curves. – Correlation - Linear Regression: **Simple Linear Regression**.	20

			Total Percentage of course content Modified/Revised		*80%*

Chairman
Board of Studies

PRINCIPAL.
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