Sri Ramakrishna Mission Vidyalaya College of Arts and Science
Coimbatore-641 020.
Department of Computer Science.
Action Taken Report (ATR) of Feedback on Curriculum (2019-20).

The Department of Computer Science participating in a well organized descriptive feedback system accompanying all the stakeholders including faculty members, students, Alumni, and employers to help the individuals and Department as a whole to enrich the curriculum. The percentage of refinement has been incorporated in the revised curriculum(BOS on 27.11.2020) is depicted as follows:

S.No.	Course Title	Course Code	% of Revision
1	**Core1:**Fundamentals of IT	20UCS1C01	100
2	**Core3:**Internet of Things	20UCS2C03	100
3	**Core5:** Data Base Management System	20UCS3C05	05
4	**Core7:** Java Programming	20UCS3CO7	20
5	**Core8:** .Net Technology	20UCS4CO8	80
6	**Core10:** Android Programming	20USC4C10	05
7	**Core11:**Operating System	20UCS5C11	10
8	**Core12:** Web Technology	20UCS5C12	20
9	**Core13:** Object Oriented Modeling analysis design with UML	20UCS5C13	80
10	**Core14:** Software Engineering	20UCS6C14	60
11	**Core15:** Python & IoT	20UCS6C15	80
12	**Elec Group B:**Data Science using R	20USC6EL2	100
13	Group Project	20UCS6CPR	100

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

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12	**Elec Group B:**Data Science using R	20USC6EL2	100
13	Group Project	20UCS6CPR	100

Course Title	Course code	Unit	Existing Content	Modified/Revised content	% of Revision / Modification
Fundamentals of IT	20UCS1C01				**New course**

Course Title	Course code	Unit	Existing Content	Modified/Revised content	% of Revision / Modification
Internet of Things	20UCS2C03				**New course**

Course Title	Course code	Unit	Existing Content	Modified/Revised content	% of Revision/ Modification
Database Management systems	20UCS3CO5	V	Introduction to PL/SQL Data base objects: Advantages of PL/SQL – The generic PL/SQL block – the PL/SQL execution environment - PL/SQL - The character set – Literals - PL/SQL data types – variables – constants – LOB types – logical comparisons - displaying user messages on the VDU Screen – comments – Control structures. PL/SQL transactions: oracle transactions – processing a PL/SQL block – what is a cursor?	Introduction to PL/SQL Data base objects: Advantages of PL/SQL – The generic PL/SQL block – the PL/SQL execution environment - **PL/SQL - The character set – Literals - PL/SQL data types – variables – constants –** LOB types – logical comparisons - displaying user messages on the VDU Screen – comments – Control structures – what is a cursor? – Types of Cursor- Implicit and Explicit cursor.	5
Total Percentage of course content Modified/Revised					*5%*

Course Title	Course code	Unit	Existing Content	Modified/Revised content	% of Revision/ Modification
JAVA PROGRAMMING	20UCS3C07	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
.Net Technology	20UCS4CO8	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:	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

			Arithmetic operator-relational operato9r- Logical operator- Assignment operator- Increment and decrement operator- Condition operator- Bitwise operator-type conversions		
		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 – CheckBoxes and**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	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-	20

			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.	<mark>749) - Data Binding – Visual Studio.Net and Data Access (750-769)</mark>	
			Total Percentage of course content Modified/Revised		*80%*

Course Title	Course code	Unit	Existing Content	Modified/Revised content	% of Revision/ Modification
Android Programming	20USC4C10	I	Fundamentals of Java for Android Application Development: Introduction to Java - Need for Java for Android application development - features of java - Introducing java Dalvik Virtual Machine - Developing a Simple Java Program [using Eclipse IDE]:- writing the java program - compiling and executing the java program.　　Introducing android (listing the version history of android platform - discussing android APIs - Describing the android architecture - application framework - exploring the features of android) - The Manifest file.　　Downloading and installing android (downloading and installing the android SDK - setting up android virtual device - setting up android physical device)	Introducing android (listing the version history of android platform - discussing android APIs - Describing the android architecture - application framework - exploring the features of android) - The Manifest file.　　Downloading and installing android (downloading and installing the android SDK - setting up android virtual device - setting up android physical device)　　Developing and executing the first android application (using eclipse IDE to create an application - running your application - exploring the application - using command line tools)	5
Total Percentage of course content Modified/Revised					5%

Course Title	Course code	Unit	Existing Content	Modified/Revised content	% of Revision/ Modification
Operating System	20UCS5C11	V	Windows2000: History-DesignPrinciples-SystemComponents-Environmental Subsystems-File System-Networking-Programmer Interface. Windows XP: History-Design Principles-System Components-Environmental Subsystems-File System-Networking-Programmer Interface.	The Linux system: History- Design Principles – kernel Modules –Process management- Scheduling – Memory Management- File system – Input and Output- Inter process Communication- Network Structure Windows2000: History-Design Principles-System Components-Environmental Subsystems-File System-Networking-Programmer Interface.	10
Total Percentage of course content Modified/Revised					*10%*

Course Title	Course code	Unit	Existing Content	Modified/Revised content	% of Revision/ Modification
Web Technology	20UCS5C12	I		<mark>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.</mark>	**20**
Total Percentage of course content Modified/Revised					20%

Course Title	Course code	Unit	Existing Content	Modified/Revised content	% of Revision/ Modification
Object Oriented Modeling analysis design with UML	20UCS5C13	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	<mark>Introduction-Objects and classes-Data Abstraction-Inheritance and Generalization-Disinheritance-Data Encapsulation-Aggregation-Abstract</mark>	**20**

			modelling- Class modelling – State modelling- Interaction modelling Object constraint language- Inception- Evolutionary Requirements – Domain models- System sequence diagrams – Operation contracts	Classes-Polymorphism-Association and Links-Discrimininators-Metaclass-Metadata-Reification-Constraints-Container class-Generic function	
		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 -	20

				Oriented Data bases-Usersof Oriented Data base Management Systems-Commercial object oriented Database Management Systems-Modeling a Logical Database Schema.	
		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
Software Engineering	20UCS6C14	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	15
		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 ModelArchitectural Design: Software Architecture - Architectural Genres - Architectural Styles - Architectural Design - Assessing Alternative Architectural Designs - Architectural Mapping Using Data Flow	15

		III	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	**10**
		IV	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.	Web Application Testing: Testing Concepts for Web Apps - Content Testing - User Interface Testing - Configuration Testing - Component Level Testing - Navigation Testing - Performance Testing.(529 - 553)	**10**
		V		Risk Management: Software Risks - Risk Identification - Risk Projection - Risk Refinement - RMMM	**10**
			Total Percentage of course content Modified/Revised		*60%*

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

Python & IoT	20UCS6C15	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%*

Course Title	Course code	Unit	Existing Content	Modified/Revised content	% of Revision/ Modification
Data Science Using R					New course
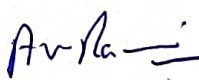
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Stakeholders' feedback and suggestions received for the academic year 2018-19

Action Taken Report

Suggestions from the feedback	Action taken
▪ The courses, Object oriented Modelling and design, Lab exercise, Database management System, Android Programming and Web technologies may be revised. ▪ The courses "Java Programming" and "Web programming" may be offered as NME I and NME II, respectively.	Will be implemented
▪ The courses, R Programming, Data science and Analytics, Fundamentals of IoT may be introduced. ▪ The courses, HTML, Data analytics, Data Science, IoT may be introduced.	Will be implemented
▪ Case studies or self-study contents may be introduced.	Will be implemented

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Action Taken Report

Suggestions from the feedback	Action taken
- HTML may be introduced in the course "Web Technologies" - The NME Course may be modified as lab course. - The courses Data Science using R and Fundamentals of IoT may be introduced. - The courses Java Programming, Web Technology, Android Programming, Database Management system may be revised. - JDBC concepts may be included in the course "Java programming".	Will be implemented
The OBE system may be introduced.	Implemented

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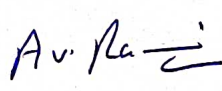College of Arts & Science
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Stakeholders' feedback and suggestions received for academic year 2016-17

Action Taken Report

Suggestions from the feedback	Action taken
■ The core courses: "C programming", "C++ Programming", "JAVA Programming" "Web technology"," Data Structures" and "RDBMS" to be revised. ■ The Core practical courses "JAVA Programming Lab" & "Web technology Lab" to be revised. ■ "Data Structures and Algorithms" and "Web programming" courses may be revised.	Implemented
■ The Core Courses: "Python and IOT", "OOMD with UML & SOAD" and "Android programming", Core programming lab: "Python lab", "Android programming lab", to be introduced. ■ "Web programming" and "Introduction to Mobile applications" may be introduced as NME Papers.	Implemented
■ The nomenclature of the course "Communication Network" may be changed as "Networks & Cyber security" with inculcation of cyber security concepts ■ The nomenclature of the course "ORACLE Lab" may be changed as "RDBMS Lab".	Implemented

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Stakeholders' feedback and suggestions received for the academic year 2015-16

Action Taken Report

Suggestions from the feedback	Action taken
- The course "Programming Lab in C" may be revised. - The concepts of Data Structure may be included in the course "JAVA programming Lab". - The course ".Net Technology-I & .Net Technology-II" may be revised. - The course "C, C++ & Web Technology Practical lab" may be updated.	Implemented
- The course "Oracle Lab" may be introduced. - The course "Multimedia lab" may be introduced.	Implemented
Rearranging of courses - The course "Cyber security" may be shifted from elective to core course. - The nomenclature of "Artificial Intelligence" may be changed as "Artificial Intelligence & Soft Computing" with the inculcation of soft computing concepts and also shifted from core to elective.	Implemented
Recent edition books may be included as reference/text books.	Implemented

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