Krantiguru Shyamji Krishna Verma Kachchh University
Master of Science (Information Technology)
Semester: I

Paper Code: CCCS101	**Total Credit :** 4
Title of Paper: Advanced Web Programming	**Total Marks :** 70 **Time :** 3 Hrs

Unit	Description	Weighting
I	***Introduction to C#:*** C# : Data Types(Boxing and UnBoxing), Operators, Access Specifier, OOPS Concepts: Class, Inheritance, Constructor, Destructor, Abstraction, interface, polymorphism (Over loading and over ridding), Garbage Collection, Array (One Dimensional and Two Dimensional), Jagged Array, Collection: Generic Collection (List),Non Generic Collection (Array list, Hash table,),Indexer(One Dimension) and property, Delegates and events(Multicasting , Multicasting Event),Exception Handling, Introduction to Namespace: Creating & Using Namespace(DLL)	**20%**
II	***ADO.Net*** Architecture of ADO.Net, Comparison with ADO(Connected and Disconnected Architecture),.Net Data provider, Data Adapter, Data Set, Data Row, Data Column, Data Relation, command, Data Reader, Creating and Using Stored Procedure	**20%**
III	***Overview of Asp.NET Framework*** Client Server Architecture, Application Web Servers, Installation of IIS server, Types of Files in Asp.NET, Types of controls in Asp.NET, Page Architecture, Adding Controls to a Webpage, The Page Class, Webfor Introduction to standard Controls (Buttons, Textbox, Checkbox, Label, Panel, List box, Drop down list etc.) Running an Asp.Net Application, File Upload Control What is Validation? Client Side Validation, Server Side Validation Types (RequieredField Validator, Range Validator, CompareField Validator, RegularExpression Validator, Custom Validator, ValidationSummery Control)	**20%**
IV	ASP.NET Page Life Cycle, Server Controls : label, dropdown list box, validation controls, list box, text box, radio button, check box, State Management : session, cookie, View State, Data Rendering Controls: Grid View, Data List, Repeater, Binding and perform operations (Insert, Update, Delete) with Grid View, Creating Simple 3-tier Application, Creating and Using web services. ***Introduction to AJAX*** Understanding Need of Ajax in Web Application, Ajax controls: Script Manager, Update Panel, Update Progress, Timer Reading Datasets From XML Writing DataSets With XML, WebServices (Introduction, HTTP, SOAP, UDDI,XML, Creating a Web Servic, Consuming a Web Service)	**20%**
V	**State Management:** What is State? Why is it Required in Asp.Net? Client Side State Management, Server Side State Management Various State Management Techniques (View State, Query String, Cookie, Session State, Application State) **What is Master Page?** Requirement Of a Master Page in an Asp.NET application Designing Website with Master Page, Theme and CSS	**20%**

	Caching Application pages and Data Overview, Page Output Caching, Partial Page Caching, Absolute Cache Expiration, Sliding Cache Expiration, Data Caching	
Basic Text & Reference Books :-		
1.	Asp.Net – Unleashed	
2.	Complete Reference C# - Herbert schildt (TMH Publication)	

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Semester: I

Paper Code: CCCS101			**Total Credit :** 4 **Total Marks :** 70 **Time :** 3 Hrs
Title of Paper: Advanced Web Programming			
Unit	**Description**		**Total Marks**
I	Q.1 (A) Answer the Following. (Definitions, Blanks, Full Forms, True/False, Match the Following)	06	14
	Q.1 (B) Program based on C#. (With Internal Option)	08	
II	Q.2 (A) Answer the Following. (Definitions, Blanks, Full Forms, True/False, Match the Following)	06	14
	Q.2 (B) Medium / Long Questions. (With Internal Option)	08	
III	Q.3 (A) Short / Medium Questions (With Internal Option)	06	14
	Q.3 (B) Medium / Long Questions. (With Internal Option)	08	
IV	Q.4 (A) Short / Medium Questions (With Internal Option)	06	14
	Q.4 (B) Program based on ASP.Net. (With Internal Option)	08	
V	Q.5 (A) Short / Medium Questions (With Internal Option)	06	14
	Q.5 (B) Medium / Long Questions. (With Internal Option)	08	

Krantiguru Shyamji Krishna Verma Kachchh University
Master of Science (Information Technology)
Semester: I

Paper Code: CCCS102	**Total Credit :** 4
Title of Paper: Mobile Computing	**Total Marks :** 70 **Time :** 3 Hrs

Unit	Description	Weighting
I	**Introduction To Mobile Apps:** Why we Need Mobile Apps, Different Kinds of Mobile Apps, Briefly about Android **Introduction Android:** History Behind Android Development, What is Android?, Pre-requisites to learn Android, Brief Discussion on Java Programming **Android Architecture:** Overview of Android Stack, Android Features, Introduction to OS layers **Deep Overview in Android Stack:** Linux Kernel, Libraries, Android Runtime, Application Framework, Dalvik VM **Installing Android Machine:** Configuring Android Stack, Creating Eclipse Environment, Integrating Android with Eclipse IDE, Exploring Eclipse IDE	
II	**Creating First Android Application:** Creating Android Project, Debugging Application through DDMS, Setting up environment, AVD Creation, Executing Project on Android Screen **Android Components:** Activities, Services, Broadcast Receivers, Content Providers **Hello World App:** Creating your first project, The manifest file, Layout resource, Running your app on Emulator **Building UI with Activities:** Activities, Views, layouts and Common UI components, Creating UI through code and XML, Activity lifecycle, Intents, Communicating data among Activities **Advanced UI:** Selection components (GridView, ListView, Spinner), Adapters, Custom Adapters, Complex UI components, Building UI for performance, Menus, Creating custom and compound Views	
III	**Notifications:** Toast, Custom Toast, Dialogs, Status bar Notifications **Styles And Themes:** Creating and Applying simple Style, Inheriting built-in Style and User defined style, Using Styles as themes **Resources and Assets:** Android Resource, Using resources in XML and code, Localization, Handling Runtime configuration change **Intent, Intent Filters and Broadcast Receivers:** Role of filters, Intent-matching rules, Filters in your manifest, Filters in dynamic Broadcast Receivers, Creating Broadcast receiver **Receiving System Broadcast:** Understanding Broadcast action, category and data, Registering Broadcast receiver through code and through XML, Sending Broadcast	
IV	**Data Storage:** Shared Preferences, Android File System, Internal storage, External storage, SQLite **Introducing SQLite:** SQLiteOpenHelper and creating a database, Opening and closing a database, Working with cursors Inserts, updates, and deletes **Content Providers:** Accessing built in content providers, Content provider MIME types, Searching for content, Adding, changing, and removing content, Creating content provider, Working with content files **Services:** Overview of services in Android, Implementing a Service, Service lifecycle, Inter Process Communication (AIDL Services) **Multimedia in Android:** Drawing and Working with Animation, Multimedia Supported audio formats, Simple media playback,	

	Supported video formats, Simple video playback **Location Based Services and Google Maps:** Using Location Based Services, Finding current location and listening for changes in location, Proximity alerts **Working with Google Maps:** Showing google map in an Activity, Map Overlays, Itemized overlays, Geocoder, Displaying route on map	
V	**Web Services and WebView:** Consuming web services, Receiving HTTP Response (XML, JSON) Parsing JSON and XML, Using We, View **Sensors:** How Sensors work, Using Orientation and Accelerometer sensors, Best practices for performance **WiFi:** Monitoring and managing Internet connectivity, Managing active connections, Managing WiFi networks **Telephony Services:** Making calls, Monitoring data connectivity and activity, Accessing phone properties and status, Controlling the phone, Sending messages **Camera:** Taking pictures, Media Recorder, Rendering previews **Bluetooth:** Controlling local Bluetooth device, Discovering and bonding with Bluetooth devices, Managing Bluetooth connections, Communicating with Bluetooth **Android Application Deployment:** Android Application Deployment on Android Market	
Basic Text & Reference Books :-		
1.	Lauren Darcey and Shane Conder, "Android Wireless Application Development", Pearson Education, 2nd ed. (2011)	
2.	Reto Meier, "Professional Android 2 Application Development", Wiley India Pvt Ltd (2011)	
3.	Mark L Murphy, "Beginning Android", Wiley India Pvt Ltd(2009)	
4.	Sayed Y Hashimi and Satya Komatineni, "Pro Android", Wiley India Pvt Ltd(2009)	

Chapter wise Coverage from Text Book:

Chapters: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 19, 20, 21, 29

Krantiguru Shyamji Krishna Verma Kachchh University
Master of Science (Information Technology)
Semester: I

Paper Code: CCCS102			**Total Credit :** 4 **Total Marks :** 70 **Time :** 3 Hrs
Title of Paper: Mobile Computing			
Unit	**Description**		**Total Marks**
I	Q.1 (A) Answer the Following. (Definitions, Blanks, Full Forms, True/False, Match the Following)	06	14
	Q.1 (B) Medium / Long Questions. (With Internal Option)	08	
II	Q.2 (A) Answer the Following. (Definitions, Blanks, Full Forms, True/False, Match the Following)	06	14
	Q.2 (B) Medium / Long Questions. (With Internal Option)	08	
III	Q.3 (A) Short / Medium Questions (With Internal Option)	06	14
	Q.3 (B) Medium / Long Questions. (With Internal Option)	08	
IV	Q.4 (A) Short / Medium Questions (With Internal Option)	06	14
	Q.4 (B) Medium / Long Questions. (With Internal Option)	08	
V	Q.5 (A) Short / Medium Questions (With Internal Option)	06	14
	Q.5 (B) Medium / Long Questions. (With Internal Option)	08	

Krantiguru Shyamji Krishna Verma Kachchh University
Master of Science (Information Technology)
Semester: I

Paper Code: CCCS103	**Total Credit :** 4
Title of Paper: Data Warehousing and Data Mining	**Total Marks :** 70
	Time : 3 Hrs

Unit	Description	Weighting
I	***Introduction*** An overview and definition along with clear understanding of the four appearing in the definition. Differences between Operational Database Systems and Data Warehouses Overview of Multi-dimensional Data Model, and the basic differentiation between "Fact"and "Dimension"; Multi-dimensional Cube Concept Hierarchies of "Dimensions" Parameters: Examples and the advantages. Star, Snowflakes, and Fact Constellations Schemas for Multi-dimensional Databases Measures: Their Categorization and Computation, Pre-computation of Cubes, Constraint on Storage Space, Possible Solutions OLAP Operations in Multi-dimensional Data Model: Roll-up, Drill-down, Slice & Dice, Pivot (Rotate). Indexing OLAP Data; Efficient Processing of OLAP Queries. Type of OLAP Servers: ROLAP versus MOLAP versus HOLAP, Metadata Repository	**20%**
II	***Data warehouse Architecture*** The Design of A Data Warehouse: A Business Analysis Framework; The Process of Data Warehouse Design, A 3-Tier Data Warehouse Architecture; Enterprise Warehouse, Data mart, Virtual Warehouse, Discovery-Driven Exploration of Data Cubes; Complex Aggregation at Multiple Granularity: Multi-feature Cubes, Constrained Gradient Analysis of Data Cubes	**20%**
III	***Pre-Processing*** The need for Pre-processing, Descriptive Data Summarization Data Cleaning: Missing Values, Noisy Data, Data Cleaning as a Process Data Integration & Transformation, Data Cube Aggregation; Attribute Subset Selection, Dimensionality Reduction:(Basic Concepts only). Numerosity Reduction: Regression & Log-linear Models, Histograms, Clustering, Sampling. Data Dicretization & Concept Hierarchy Generation For Numerical Data: Binning, Histogram Analysis, Entropy-based Discretization, Interval Merging by χ Analysis, Cluster Analysis, Discretization by Intuitive Partitioning For Categorical Data	**20%**
IV	***Data Mining- An Introduction*** An Overview; What is Data Mining; Data Mining - on What Kind of Data Data Mining Functionalities - What Kind of Patterns Can be Mined; Concept/Class Description: Characterization & Discrimination; Mining Frequent Patterns, Associations, and Correlations; Classification & Prediction; Cluster Analysis; Outlier Analysis, Classification of Data Mining Systems Data Mining Task Primitives, Integration of a Data Mining System with a Database or Data Warehouse System**,** Major Issues in Data Mining	**20%**
V	***Mining Frequent Pattern, Association and correlations*** Basic Concepts: Market Basket Analysis; Frequent Itemsets, Closed Itemsets, and Association Rules; Frequent Pattern Mining: A Roadmap Apriori Algorithm: Finding Frequent Itemsets Using Candidate Generation; Generating Association Rules from Frequent Itemsets; Improving the Efficiency of Apriori. From Association Mining to Correlation Analysis; Interesting: An Example; From Association Analysis to Correlation Analysis Introduction to Classification and Prediction, Supervised learning, Unsupervised learning, Classification by decision tree induction	**20%**
Basic Text & Reference Books :-		
1.	Jiawei Han & Micheline Kamber, "Data Mining: Concepts & Techniques", Morgan Kaufmann Publishers (2002)	

Krantiguru Shyamji Krishna Verma Kachchh University
Master of Science (Information Technology)
Semester: I

Paper Code: CCCS103			**Total Credit :** 4 **Total Marks :** 70 **Time :** 3 Hrs
Title of Paper: Data Warehousing and Data Mining			
Unit	**Description**		**Total Marks**
I	Q.1 (A) Answer the Following. (Definitions, Blanks, Full Forms, True/False, Match the Following)	06	14
	Q.1 (B) Medium / Long Questions. (With Internal Option)	08	
II	Q.2 (A) Answer the Following. (Definitions, Blanks, Full Forms, True/False, Match the Following)	06	14
	Q.2 (B) Medium / Long Questions. (With Internal Option)	08	
III	Q.3 (A) Short / Medium Questions (With Internal Option)	06	14
	Q.3 (B) Medium / Long Questions. (With Internal Option)	08	
IV	Q.4 (A) Short / Medium Questions (With Internal Option)	06	14
	Q.4 (B) Medium / Long Questions. (With Internal Option)	08	
V	Q.5 (A) Short / Medium Questions (With Internal Option)	06	14
	Q.5 (B) Medium / Long Questions. (With Internal Option)	08	

Krantiguru Shyamji Krishna Verma Kachchh University
Master of Science (Information Technology)
Semester: IT

Paper Code: CCCS104	**Total Credit :** 4
Title of Paper: Practical Based on CCCS101	**Total Marks :** 70 **Time :** 3 Hrs

Description

1. Understanding of Constructor and Destructor using C#
2. Demonstration of Array and Collection
3. Understanding Inheritance
4. Understanding Exception handling
5. Understanding Polymorphism
6. Understanding Indexers
7. Demonstration of ADO.Net and its various components
8. Understanding of IIS server, loading and installing
9. Understanding various controls of ASP.Net
10. Demonstration of client side and server side validation
11. Understanding of session and cookie
12. Demonstration of AJAX controls
13. Demonstration of reading data sets using XML
14. Understanding of various web services
15. Understanding of various state management techniques

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Master of Science (Information Technology)
Semester: IT

<table>
<tr><td colspan="3">Paper Code : CCCS104</td><td rowspan="2">Total Credit : 4
Total Marks : 70
Time : 3 Hrs</td></tr>
<tr><td colspan="3">Title of Paper: Practical Based on CCCS101</td></tr>
<tr><td colspan="4"></td></tr>
<tr><td>Unit</td><td colspan="2">Description</td><td>Total Marks</td></tr>
<tr><td rowspan="2">I</td><td>Q.1 (A) Viva – Voce</td><td>20</td><td rowspan="2">70</td></tr>
<tr><td>Q.1 (B) Practical</td><td>50</td></tr>
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Krantiguru Shyamji Krishna Verma Kachchh University
Master of Science (Information Technology)
Semester: I

Paper Code: CCCS105	**Total Credit :** 4
Title of Paper: Practical Based on CCCS102 and Elective Courses	**Total Marks :** 70 **Time :** 3 Hrs

Description

1. Understanding of android stack
2. Understanding of Eclipse IDE
3. Understanding Android components
4. Demonstration of UI components
5. Demonstration of Activity life cycle
6. Demonstration of advanced UI components
7. Understanding Notifications
8. Understanding style and themes
9. Understanding of resources and assets
10. Understanding broadcast action and procedure
11. Understanding of SQLite and its operations
12. Understanding of Android services
13. Demonstration of Multimedia activities in android
14. Understanding location based services using android
15. Understanding Google map
16. Understanding of sensors and Wi-Fi
17. Understanding of bluetooth, camera and telephony services
18. Demonstration of Android application deployment

Krantiguru Shyamji Krishna Verma Kachchh University
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Semester: I

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<tr><td colspan="3">Paper Code : CCCS105</td><td rowspan="2">Total Credit : 4
Total Marks : 70
Time : 3 Hrs</td></tr>
<tr><td colspan="3">Title of Paper: Practical Based on CCCS102 and Elective Courses</td></tr>
<tr><td colspan="4"></td></tr>
<tr><td>Unit</td><td colspan="2">Description</td><td>Total Marks</td></tr>
<tr><td rowspan="2">I</td><td>Q.1 (A) Viva – Voce</td><td>20</td><td rowspan="2">70</td></tr>
<tr><td>Q.1 (B) Practical</td><td>50</td></tr>
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Krantiguru Shyamji Krishna Verma Kachchh University
Master of Science (Information Technology)
Semester: I

Paper Code: CECS101		**Total Credit :** 4
Title of Paper: Advanced Operating Systems		**Total Marks :** 70 **Time :** 3 Hrs
Unit	**Description**	**Weighting**
I	Introduction, types of operating systems, functions of operating systems. Introduction and Communication Models, Message Passing, Shared Memory, RPC	**20%**
II	Deadlock and Concurrency: Deadlocks, Conditions for deadlock, Deadlock modedling, Strategies for handling deadlocks, Starvation (The dining philosopher problem), Parallel Processing, Process Synchronization, Test and set, WAIT and SIGNAL, Semaphores, Process Cooperation, Producer and Consumers, Readers and Writers Problem	**20%**
III	Scheduling : Introduction Scheduling algorithms : FCFS, SJN, Priority, SRT, RR Application of the Scheduling Algorithm	**20%**
IV	File systems : File manager, Interacting with file manager, Physical storage allocation, Data compression, Access methods, Access controls Kernel types, Kernel architecture of Windows and Linux operating systems	**20%**
V	Advanced Linux Shell scripting and Script commands, System calls Linux Kernel and device driver programming Linux network and system administration, www, mail, FTP, samba	**20%**
Basic Text & Reference Books :-		
1.	UNIX – Concepts & Application, Sumitabha Das, BPB	
2.	Professional Linux Kernel Architecture by Wolfgang Mauerer Publisher: Wiley India Pvt Ltd (December 2008)	

Krantiguru Shyamji Krishna Verma Kachchh University
Master of Science (Information Technology)
Semester: I

Paper Code: CECS101			**Total Credit :** 4 **Total Marks :** 70 **Time :** 3 Hrs
Title of Paper: Advanced Operating System			
Unit	**Description**		**Total Marks**
I	Q.1 (A) Short / Medium Questions (With Internal Option)	06	14
	Q.1 (B) Medium / Long Questions. (With Internal Option)	08	
II	Q.2 (A) Short / Medium Questions (With Internal Option)	06	14
	Q.2 (B) Medium / Long Questions. (With Internal Option)	08	
III	Q.3 (A) Short / Medium Questions (With Internal Option)	06	14
	Q.3 (B) Medium / Long Questions. (With Internal Option)	08	
IV	Q.4 (A) Short / Medium Questions (With Internal Option)	06	14
	Q.4 (B) Medium / Long Questions. (With Internal Option)	08	
V	Q.5 (A) Shell Scripting Commands (With Internal Option)	06	14
	Q.5 (B) Shell Scripting Questions. (With Internal Option)	08	

Krantiguru Shyamji Krishna Verma Kachchh University
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Semester: I

Paper Code: CECS103		**Total Credit :** 4
Title of Paper: Enterprise Resource Planning		**Total Marks :** 70 **Time :** 3 Hrs
Unit	**Description**	**Weighting**
I	**Introduction** Enterprise Resource Planning (ERP) : introduction, history, advantages Enterprise : introduction, business modeling, integrated data model, integrated management information Basic concepts of ERP Risks and benefits of ERP	
II	**ERP and Related Technologies** Introduction to MRP, MRP-II and ERP Business Process Reengineering (BPR) Data warehousing, data mining and Online Analytical Processing (OLAP) Product Life Cycle Management (PLM), Supply Chain Management (SCM), Customer Relationship Management (CRM)	
III	**ERP Marketplace and Functional Modules** Marketplace : overview, dynamics, changing ERP market Indian ERP Scenario Functional modules of ERP software Integration of ERP, SCM and CRM	
IV	**ERP – Selection and Implementation** ERP package selection ERP Implementation basics, ERP Implementation Life Cycle Post implementation activities Success and Failure Factors of an ERP Implementation	
V	**The Business Modules** Finance, Manufacturing, Human Resources, Plant Maintenance Quality Management, Sales, Distribution and Service, Marketing	
Basic Text & Reference Books :-		
1.	Alexis Leon : Enterprise Resource Planning, Tata McGraw-Hill, New Delhi 1st and 2nd editions.	

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Paper Code: CECS103			**Total Credit :** 4 **Total Marks :** 70 **Time :** 3 Hrs
Title of Paper: Enterprise Resource Planning			
Unit	**Description**		**Total Marks**
I	Q.1 (A) Short / Medium Questions (With Internal Option)	06	14
	Q.1 (B) Medium / Long Questions. (With Internal Option)	08	
II	Q.2 (A) Short / Medium Questions (With Internal Option)	06	14
	Q.2 (B) Medium / Long Questions. (With Internal Option)	08	
III	Q.3 (A) Short / Medium Questions (With Internal Option)	06	14
	Q.3 (B) Medium / Long Questions. (With Internal Option)	08	
IV	Q.4 (A) Short / Medium Questions (With Internal Option)	06	14
	Q.4 (B) Medium / Long Questions. (With Internal Option)	08	
V	Q.5 (A) Short / Medium Questions (With Internal Option)	06	14
	Q.5 (B) Medium / Long Questions. (With Internal Option)	08	