

Programme : Diploma in Computer Engineering

Programme Code : 06/26

Name of Course : Terminal Equipment APP Development Using Android Framework

Course Code : CM581

Teaching Scheme:

	Hours /Week	Total Hours
Theory	02	32
Practical	04	64

Evaluation:

	Progressive Assessment	Semester End Examination			
		Theory	Practical	Oral	Term work
Duration	Two class tests each of 60 minutes.	02 Hrs.	–	–	–
Marks	10	40	50		50

Course Rationale:

Mobiles, tablets and electronic gadgets are very popular and widely used as a requisite to run our life smoothly. And this is the reason Terminal Equipment App Development Environments like Android OS, Symbian OS etc are popular and fastest growing environments which are widely used by Smartphone, Tablets, and equipments. This course is designed to introduce and familiarize students of computer engineering with such a popular environment so that respective skills on these environments help them as skill development and enhancement, placement assistance, and for their career growth.

Course Outcomes:

Students should be able to

1. Configure Android Application Integrated Development Environme.
2. Use different Android application components using IDE.
3. Create UI for Android applications using UI controls.
4. Create and use Android database using SQLite.
5. Create and deploy Android applications using APIs with proper security features.

Course Contents:

A. Theory

Specific Learning Outcomes (Cognitive,Domain)	Topics and subtopics	Hrs.
Section I		
Units 1 : Overview Of Android Operating System		
1.Overview Of Android Operating System. 2. Draw and explain Android architecture.	1.1 What is Android Operating System? Identify key features for various versions of Android. Identify the various tools and software required for developing an Android Application 1.2. Android Architecture 1.3 install android SDK, install Eclipse IDE development tool, create Android virtual devices, identifying the component of an Android, create simple program Hello world.	04
Unit 2: Configuration Of Android Environment		
1. Install, configure, and operate different IDEs 2. Differentiate between JVM and DVM	2.1 Operating System, Java JDK, Android SDK 2.2 Android Development Tools(ADT) 2.3 Android Virtual Devices(AVDs) 2.4 Emulators 2.5Dalvik Virtual Machine, Difference between JVM and DVM 2.6 Steps to install and configure Eclipse and SDK	04
Unit 3: Android Components and Layouts		
1.create Android components , 2. Describe Directory Structure. 3. Identify different types of Layout.	3.1 Activities, Services, Broadcast Receivers, Content Provider, Fragments, Intents And Filter. 3.2 Control Flow, Directory Structure, Understanding components of a screen, Fundamental UI Design, 3.3 Linear Layout,Absolute Layout, Frame Layout,Table Layout, Relative Layout	06
Section II		
Unit 4: Creating Android User Interface Elements		
1. Use Android user interface Elements. 2. Create an Android Application for Sending Email ,Sending SMS, Phone Calls. 3. 3. Develop an Android Application for Sending Email ,Sending SMS, Phone Calls.	4.1 Text View, Button, Image Button, EditTextCheckbox, ToggleButton, RadioButton And RadioGroup, ProgressBar, ListView, GridView, Image View, Scroll View, Custom Toast Alert, Time And Date Picker. 4.2 Creating Android Application for Sending Email ,Sending SMS, Phone Calls. 4.3Android Alert Dialog, Audio Capture, Bluetooth.	06
Unit 5: Android Databases		
1. Recognize android database SQLite of operating system. 2. Demonstrate different database transactions using these databases.	5.1 SQLite, , Creating Database, Creating Tables, Database handling Different transaction with database	06
Unit 6: Security and permission Application Deployment		
1. Understand android security model. 2. Demonstrate different permissions and customizing permissions. 3.Publish android applications	6.1 Understanding the Android Security Model, Declaring and Using Permissions, Understanding and Using Custom Permission. 6.2 Application Deployment: Creating Small Application, Signing of application, Deploying app on Google Play Store, Become a Publisher, Developer Console	06
Total Hrs		32

B. List of Practicals/Laboratory Experiences/Assignments:

Practical No.	Specific Learning Outcomes (Psychomotor Domain)	Units	Hrs.
1	Introduction To Android OS and Setup Android Development Environment	Configuration Of Android Environment	02
2	Develop a program to Display Hello World On Screen.	Configuration Of Android Environment	02
3	Write a Program to create an activity	Android Components and Layouts	02
4	Write a Program to create Service	Android Components and Layouts	02
5	Write a Program to create BroadCast Receiver	Android Components and Layouts	02
6	Write Program(s) for Explicit Intent and Implicit Intent	Android Components and Layouts	04
7	Write A Program to create fragments.	Android Components and Layouts	02
8	Write program(s) using Linear Layout, Absolute Layout, Frame Layout, Table Layout and Relative Layout.	Android Components and Layouts	06
9	Write a Program Using UI Control(Text View ,Edit Text , Auto Complete Text View)	Creating Android User Interface Elements	02
10	Write a Program Using UI Control(Button , Image Button, Toggle Button)	Android Components and Layouts	02
11	Write a Program Using UI Control(Check Box , Radio Button)	Android Components and Layouts	02
12	Write a Program Using ProgressBar.	Android Components and Layouts	02
13	Write program to create List View and Grid View.	Android Components and Layouts	04
14	Write a Program Using Time And Date Picker.	Android Components and Layouts	02
15	Write programs to send email and SMS.	Android Components and Layouts	04
16	Write a Program Using ProgressBar. Write program(s) for Alert dialog box, Android, Audio capture	Android Components and Layouts	04
17	Write program(s) for Bluetooth, Camera	Android Components and Layouts	04
18	Write program(s) for database transactions with Android OS.	Android Databases	06
19	Develop a mini project to create Android App, Deploy and publish the App using Google Play Store.	Security and Permissions, Application Deployment	10
		Total Hrs	64

Instructional Strategy:

Sr.No	Topic	Instructional Strategy
1	Overview Of Android Operating System	Explanation of Android Operating System and its development environment. Demonstration of Android environment setup.
2	Configuration Of Android Environment	Explanation of Android SDK Android Development Tools(ADT) Android Virtual Devices(AVDs) Emulators Dalvik Virtual Machine,
3	Android Components and Layouts	Demonstration of Android Components and Layouts
4	Creating Android User Interface Elements	Explanation of UI elements. Demonstration and hands-on practices on UI Controls.
5	Android Databases	Explanation of UI elements. Demonstration and hands-on practices on UI Controls. Explanation of android databases. Hands-on practices on database transactions.
6	Security and Permissions, Application Deployment	Explanation on security and App development and deployment. Demonstrate App deployment and publishing App. Hands-on practice on App deployment.

Specification Table for Theory Paper:

Sr. No.	Topic	Cognitive Levels			Total
		Knowledge	Comprehension	Application	
1	Overview Of Android Operating System	02	02	–	04
2	Configuration Of Android Environment	02	04	02	08
3	Android Components and Layouts	02	02	04	08
4	Creating Android User Interface Elements	02	02	04	08
5	Android Databases	02	02	02	06
6	Security Permissions, Application Deployment	02	02	02	06
Total		12	12	16	40

Assessment and Evaluation Scheme:

	What		To Whom	Frequency	Max Marks	Min Marks	Evidence Collected	Course Outcomes
Direct Assessment Theory	Continuous Assessment	ST	Students	Two PT (average of two tests)	10	–	Test Answer sheets	1,2,3,4
				TOTAL	–	=		1,2,3
	(Term End Examination)	End Exam		End Of the Course	40	13	Theory Answer sheets	1,2,3,4
Direct Assessment Practical	Continuous Assessment	ST	Students	One skill test at end of term	50	20	Practical Answer sheets	4,5,6,
							Journal	
	(Term End Examination)	End Exam		End Of the Course	50	20	Practical Answer Sheets	4,5,6
Indirect Assessment	Student Feedback on course		Students	After First PT	Student Feedback Form			1,2,3 4,5,6
	End exam			End Of The Course	Questionnaires			

Scheme Of Practical Evaluation:

S.N.	Description	Max. Marks
1	Observations,	10
2	Practical Performance	20
3	Viva voce	20
	TOTAL	25

Mapping Course Outcomes With Program Outcomes:

Course Outcomes	Program Outcomes (POs)									
	1	2	3	4	5	6	7	8	9	10
1	-	1	3	3						
2	-	1	3	3						
3	-	2	3	3						
4	-	3	3	3						

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

Reference & Text Books:

Text Book

Sr. No	Author	Title	Publication
1	Pradeep Kothari	Android Application Development	Kogent Learning Solutions
2	Timothy O'Leary &x Linda O'Leary	Computing Essential 2015	McGraw Hill

E-References:www.howstuffworks.com

1. <https://www.tutorialspoint.com/android>
2. https://www.tutorialspoint.com/android/android_advanced_tutorial.pdf

Programme : Diploma in Computer Engineering

Programme Code : 06/26

Name of Course : Windows Programming

Course Code : CM582

Teaching Scheme:

	Hours /Week	Total Hours
Theory	02	32
Practical	02	32
Tutorial	02	32

Evaluation:

	Progressive Assessment	Semester End Examination			
		Theory	Practical	Oral	Term work
Duration	Two class tests each of 60 minutes.	02 Hrs.	-	-	-
Marks	10	40	50	-	50

Course Rationale:

Today's workplace is constantly changing and adopting new technologies. In this era of Visual Programming it has become necessary to be able to develop GUI programs. As the industries rely on Visual C++ for its power and efficiency, VC++ has been used as the Windows Programming Tool. In this course the students will get the most out of Windows Programming.

Course Outcomes:

Students should be able to

1. Create Dialog Boxes.
2. Draw different object using GDI.
3. Interface I/O devices like keyboard and mouse using controls.
4. Distinguish between device coordinate and windows coordinate.
5. Use timer and apply child window control for windows application..

Course Contents:

A. Theory

Specific Learning Outcomes (Cognitive,Domain)	Topics and subtopics	Hrs.
Section I		
Units 1 : Overview of MS-Windows		
1. Explain history of character set 2. Define wild characters in windows. 3. Describe basic windows program. 4. Recognize windows message.	1.1 The Windows Environment, Windows Programming Options, Your First Windows Program, 1.2. A brief History of Character Sets, Wide Characters And C, Wide Characters And Windows, 1.3 Windows and Messages	4
Unit 2:An Exercise in Text Output:		
1. Explain GDI. 2. Describe device context. 3. Use string and various string functions. Draw different geometric object using Line Function. 4. Discuss GDI mapping mode. 5. Define regions and clipping.	2.1 Introduction to GDI 2.2 Scroll bars, Building a better Scroll 2.3 The Structure of GDI, The Device Context 2.4 Drawing Dots and Lines, Drawing Filled Areas 2.5 The GDI Mapping Mode 2.6 Rectangles, Regions and Clipping.	12
Section II		
Unit 3:The Keyboard and Mouse		
1. Define key-stroke messages. 2. Classify client area mouse messages and non-client area mouse messages. 3. Describe hit-testing. 4. Define capturing mouse.	3.1 Keyboard Basics 3.2 Changing Attribute Values Dynamically Key-stroke Messages, Character Messages, Keyboard Messages and Character Sets 3.3 Mouse Basics, 3.4 Client- Area Mouse Messages, Non-Client- Area Mouse Messages, Hit-Testing in your Programs, Capturing the Mouse	08
Unit 4:The Timer		
1. Memorize timer basics. 2. Describe the methods for timer use. 3. Explain different child window controls.	4.1 Timer Basics 4.2 Using the Timer: Three Methods, Using the Timer for a Clock, Using the Timer for a Status Report 4.3 Child Window Controls 4.4 The Button Class, Controls and Colors, The Static Class, The Scroll Bar Class, The Edit Class, The List Box Class	08
Total Hrs		32

B. List of Practicals/Laboratory Experiences/Assignments:

Practical No.	Specific Learning Outcomes (Psychomotor Domain)	Units	Tutorial Hrs	Hrs
1	Getting Familiar with VC++, parts of a VC++ Program	Overview of MS-Windows	02	02
2	Writing Simple Programs using VC++.	Overview of MS-Windows	04	04
3	Programs on drawing dots, lines	An Exercise in Text Output:	02	02
4	Programs on drawing filled areas, rectangles.	An Exercise in Text Output	02	02
5	Programs using Timer methods	The Timer	04	04
6	Programs for implementing Child Window Controls	The Time4	04	04
7	Programs for implementing Button class and controls	The Timer	02	04
8	Programs on Reading Keystrokes from the Keyboard, Displaying Our Text, Finding the size of the window	The Keyboard and Mouse	04	04
9	Programs for handling the Mouse.	The Keyboard and Mouse	04	04
10	Creating Check Boxes, Radio buttons, List Boxes, Combo Box, Scroll Bar	The Timer	04	04
		Total Hrs	32	32

Instructional Strategy:

Sr.No	Topic	Instructional Strategy
1	Overview of MS-Windows	Lecture method, Demonstration
2	An Exercise in Text Output	Lecture method, Demonstration
3	The Keyboard and Mouse	Lecture method, Implementation
4	The Timer	Lecture method, Implementation

Specification Table for Theory Paper:

Sr. No.	Topic	Cognitive Levels			Total
		Knowledge	Comprehension	Application	
1	Overview of MS-Windows	02	02	02	06
2	ArAn Exercise in Text Output	02	02	06	10
3	The Keyboard and Mouse	02	04	06	12
4	The Timer	02	04	06	12
	Total	08	12	20	40

Assessment and Evaluation Scheme:

	What		To Whom	Frequency	Max Marks	Min Marks	Evidence Collected	Course Outcomes
Direct Assessment Theory	Continuous Assessment	ST	Students	Two PT (average of two tests)	10	–	Test Answer sheets	1,2,3,4,5
				TOTAL	10	=		1,2,3,4,5
	(Term End Examination)	End Exam		End Of the Course	40	14	Theory Answer sheets	1,2,3,4,5
Direct Assessment Practical	Continuous Assessment	ST	Students	One skill test at end of term	–	–	Practical Answer sheets	1,2,3,4,5
				Assignments	50	20	Journal	
	(Term End Examination)	End Exam		End Of the Course	50	20	Practical Answer Sheets	4,5,6
Indirect Assessment	Student Feedback on course		Students	After First PT	Student Feedback Form			1,2,3,4,5,6
	End exam			End Of The Course	Questionnaires			

Scheme Of Practical Evaluation:

S.N.	Description	Max. Marks
1	Demonstration	20
2	Result	10
3	Viva voce	20
	TOTAL	50

Mapping Course Outcomes With Program Outcomes:

Course Outcomes	Program Outcomes (POs)									
	1	2	3	4	5	6	7	8	9	10
1			2	1	1					
2		-	2	1	1					
3		-	2	1	1					
4		-	3	1	1					

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

Reference & Text Books:

Text Book

Sr. No	Author	Title	Publication
1	AchyutGodbole	Demystifying computer	—
2	Timothy O'Leary &x Linda O'Leary	Computing Essential 2015	McGraw Hill
3	Kadar Seema	Principles of Programming language	Technical Publications

E-References:www.howstuffworks.com

1. http://www.tutorialspoint.com/computer_fundamentals
2. <http://ecomputernotes.com/fundamental/introduction-to-computer/what-are-characteristic-of-a-computer>
3. https://www.tutorialspoint.com/data_structures_algorithms/algorithms_basics.htm
4. <http://www.officetutorials.com>

Programme : Diploma in Computer Engineering

Programme Code : 06/26

Name of Course : Web Technology Using JavaScript

Course Code : CM583

Teaching Scheme:

	Hours /Week	Total Hours
Theory	02	32
Practical	04	64

Evaluation:

	Progressive Assessment	Semester End Examination			
		Theory	Practical	Oral	Term work
Duration	Two class tests each of 60 minutes.	02 Hrs.	–	–	–
Marks	10	40	50	-	50

Course Rationale:

In the current era, Web Sites are one of the important component in Business success. People need classy websites with catchy features and features which makes the website smart enough to help the surfer enter appropriate information and perform tasks correctly. JavaScript is one such limited feature programming language used to build dynamic Web Pages and respond to events. Helps create highly interactive Webpages.

Course Outcomes:

Students should be able to

1. Build dynamic web pages.
2. Display alert boxes.
3. Write messages to the Browser status bar.
4. Customize browsers.
5. Validate information on forms.
6. Create interactive forms.

Course Contents:

A. Theory

Specific Learning Outcomes (Cognitive,Domain)	Topics and subtopics	Hrs.
Section I		
Units 1 : An Inside Look At JavaScript Programming		
1. Enlist various advantages and disadvantages of using javascript. 2. Create a javascript page using various control and looping structure.	1.1 Getting Down To JavaScript 1.2. Values and Variables 1.3 Operators and Expressions 1.4 if Statement 1.5 switch... case Statement 1.6 Loop Statement	4
Unit 2: Arrays ,Functions and String		
1. Install, configure, and operate different IDEs 2. Use functions in the javascript. 3. Use string and various string functions.	2.1 Array : Declaring, Defining Looping The Array, Adding Array Element, 2.2 Sorting Array Elements 2.3 Making a New Array from an Existing Array, Combining Array Elements into a String, Changing Elements of the Array 2.4 Function : Defining, The Scope of Variables and Arguments, Calling a Function, Function Calling Another Function, Returning Values from a Function. 2.5 String : Joining Strings, Dividing Text, Converting Numbers and Strings, Changing the Case of the Strings, Strings and Unicode	8
Unit 3: Forms and Event Handling		
1. Use event handling to handle various user initiated events at runtime. 2. Write javascript to handle forms using intrinsic function.	3.1 Building Block of a Form, Responding to Form Events, Form Objects and Elements 3.2 Changing Attribute Values Dynamically 3.3 Changing Option List Dynamically 3.4 Evaluating Check Box Selections, Manipulating Elements Before the Form, Disabling Elements, Read-Only Elements 3.5 Using Intrinsic JavaScript Functions 3.6 Changing Labels Dynamically	10

Section II		
Unit 4: Cookies and Browser Windows		
<p>1. Use cookies in javascript pages to make user experience more interactive.</p> <p>2. Managing multiple windows in an web application.</p>	<p>4.1 Cookie Basics, Creating, Reading, Setting the Expiration Date, Deleting</p> <p>4.2 Personalizing and Experience Using a Cookie</p> <p>4.3 Giving the New Window Focus</p> <p>4.4 Placing an Window into Position on the Screen</p> <p>4.5 Changing the Contents of a Window</p> <p>4.6 Closing the Window</p> <p>4.7 “Magically” Scrolling a Web Page</p> <p>4.8 “Magically” Scrolling a Web Page</p> <p>4.9 Creating a Web Page in a New Window</p>	10
Unit 5: Regular Expressions, JavaScript and Frames		
<p>1. Use regular expressions to validate the forms.</p> <p>2. Use frame to structure the web page, and managing frames.</p>	<p>5.1 Regular Expression: The Language of a Regular Expression, Replace Text , Return the Matched Characters</p> <p>5.2 Using a Regular Expression</p> <p>5.3 Invisible Borders</p> <p>5.4 Calling a Child Windows JavaScript Function</p> <p>5.5 Changing the Content of a Child Window</p> <p>5.6 Changing the Focus of a Child Window</p> <p>5.7 Writing to a Child Window from a JavaScript</p> <p>5.8 Accessing Elements of Another Child Window</p>	8
Unit 6: Rollovers, Status Bar, Banners, Slideshow, Protecting Your Webpage		
<p>1. Implement banners slideshow and rollovers to make website come alive.</p> <p>2. Protect the web page from eavesdropping.</p>	<p>6.1 Setting the Stage</p> <p>6.2 Creating a Rollover</p> <p>6.3 Text Rollovers</p> <p>6.4 Multiple Actions for a Rollover</p> <p>6.5 More Efficient Rollovers</p> <p>6.6 Making Magic Using the Status Bar</p> <p>6.7 Banner Advertisements</p> <p>6.8 Creating a Slideshow</p> <p>6.9 Hiding Your Code</p> <p>6.10 Concealing Your E-mail Address</p>	8
Total Hrs	48	

B. List of Practicals/Laboratory Experiences/Assignments:

Practical No.	Specific Learning Outcomes (Psychomotor Domain)	Units	Hrs.
1	Executing Programs based on decision making statement and looping statement	An Inside Look At JavaScript Programming	04
2	Executing Programs based on arrays	functions and Arrays ,Functions and String	04
3	Executing Programs based on strings	functions and Arrays ,Functions and String	04
4	Program using Form Objects	Forms and Event Handling	04
5	Program using Form Elements	Forms and Event Handling	04
6	Program using Form Events	Forms and Event Handling	04
7	Program using Intrinsic Java Functions	Forms and Event Handling	04
8	Programs for Using and Personalizing cookies	Cookies and Browser Windows	04
9	Programs for placing the Window on the screen.	Cookies and Browser Windows	04
10	Programs for accessing child Window.	Regular Expressions, JavaScript and Frames	04
11	Programs for implementing regular Expression	Regular Expressions, JavaScript and Frames	04
12	Programs for implementing Rollovers	Rollovers, Status Bar, Banners, Slideshow, Protecting Your Webpage	04
13	Programs for implementing Status bars and Web Page Protection	Rollovers, Status Bar, Banners, Slideshow, Protecting Your Webpage	04
14	Programs for implementing Banners, Slideshow	Rollovers, Status Bar, Banners, Slideshow, Protecting Your Webpage	04
15	Programs for implementing Banners, Slideshow	Rollovers, Status Bar, Banners, Slideshow, Protecting Your Webpage	04
16	Mini Project implementing features of JavaScript.		08
		Total Hrs	64

Instructional Strategy:

Sr.No	Topic	Instructional Strategy
1	An Inside Look At JavaScript Programming	Class room teaching, laboratory work
2	Arrays ,Functions and String	Class room teaching, laboratory work
3	Forms and Event Handling	Class room teaching, laboratory work
4	Regular Expressions, JavaScript and Frames	Class room teaching, laboratory work
5	Rollovers, Status Bar, Banners, Slideshow, Protecting Your Webpage	Class room teaching, laboratory work
6	Cookies and Browser Windows	Class room teaching, laboratory work

Specification Table for Theory Paper:

Sr. No.	Topic	Cognitive Levels			Total
		Knowledge	Comprehension	Application	
1	Classification and Components of Computer An Inside Look At JavaScript Programming	02	02	-	04
2	Arrays ,Functions and String	02	-	06	08
3	Forms and Event Handling	02	-	06	08
4	Cookies and Browser Windows	02	-	05	07
5	Regular Expressions, JavaScript and Frames	02	-	05	07
6	Rollovers, Status Bar, Banners, Slideshow, Protecting Your Webpage	02	-	04	06
Total		12	02	26	40

Assessment and Evaluation Scheme:

	What		To Whom	Frequency	Max Marks	Min Marks	Evidence Collected	Course Outcomes
Direct Assessment Theory	Continuous Assesment	ST	Students	Two PT (average of two tests)	10	03	Test Answer sheets	1,2,3
				TOTAL	10	03		1,2,3
	(Term End Examination)	End Exam		End Of the Course	40	14	Theory Answer sheets	1,2,3
Direct Assessment Practical	Continuous Assesment	ST	Students	One skill test at end of term	20	-	Practical Answer sheets	4,5,6,
				Assignments	30	-	Journal	
	TOTAL	50		20				
	(Term End Examination)	End Exam	End Of the Course	50	20	Practical Answer Sheets	4,5,6	
Indirect Assessment	Student Feedback on course		Students	After First PT	Student Feedback Form		1,2,3 4,5,6	
	End exam			End Of The Course	Questionnaires			

Scheme Of Practical Evaluation:

S.N.	Description	Max. Marks
1	Demonstration	20
2	Result	10
3	Viva voce	20
	TOTAL	50

Mapping Course Outcomes With Program Outcomes:

Course Outcomes	Program Outcomes (POs)									
	1	2	3	4	5	6	7	8	9	10
1	3	3	3		1	1				
2	3	3	3			1				
3	3	2	3							
4	3	2	3							
5	3	2	2							
6	3	3	3							

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

Reference & Text Books:

Text Book

Sr. No	Author	Title	Publication
1	Jim Keogh	Javascript Demystified	Tata McGraw Hill
2	Michael Moncur	Javascript in 24 hours(SAMS teach yourself)	TechMedia

E-References:www.howstuffworks.com

1. <http://www.tutorialspoint.com/>
2. <https://www.javascript.com/>
3. <http://javascript.info/>
4. <https://www.codeschool.com/learn/javascript>

Programme : Diploma in Computer Engineering/Information technology

Programme Code : 06/26/07

Name of Course : Multimedia Techniques

Course Code : CM584

Teaching Scheme:

	Hours /Week	Total Hours
Theory	02	32
Practical	04	64

Evaluation:

	Progressive Assessment	Semester End Examination			
		Theory	Practical	Oral	Term work
Duration	Two class tests each of 60 minutes.	02 Hrs.	–	–	–
Marks	10	40	50	–	50

Course Rationale:

Animation has given a boost to various areas like film production, e-learning animated web-site etc. This subject will enable the students to implement their creative imagination to produce animated text images. It is a practical oriented subject which deals with various fonts, audio video formats, and basic shapes, images to the controls, tools animation. Students will develop the skill for using the basic shapes, text, images apply controls, Colors to create final animated multimedia object.

Course Outcomes:

Students should be able to

1. Identify multimedia files and devices.
2. Use images, audio, video files for multimedia systems.
3. Develop multimedia applications in distributed environment.
4. Create Animation and Integrate Audio and Video
5. Integrate Multimedia in Web Pages.

Course Contents:

A. Theory

Specific Learning Outcomes (Cognitive,Domain)	Topics and subtopics	Hrs.
Section I		
Units 1 : Introduction To Multimedia		
1. Define Multimedia 2. Signify need of multimedia in various fields of live 3. Determine different basic tools and storage used for developing multimedia.	1.1 Definitions -Where to use Multimedia, Multimedia in Business, Multimedia in Schools, Multimedia in Home, Multimedia in Public Places, Virtual Reality 1.2 Basic Tools- I/P, O/P devices, Painting Drawing Tools, OCR Software, Digital v/s Analog, CRT display System, Display Terminology, Flat Panel Display 1.3 Magnetic Media Technology, Hard disk Technology, RAID, Criteria for Selection of RAID, Use of Magnetic Storage in Multimedia, Optical Media, Magneto Optical	06
Unit 2: Multimedia Building Blocks and Compression/Decompression with File Formats		
1. Describe various file formats. 2. State need of compression and advantages of compression 3. Describe audio file formats and QOS Architecture.	2.1 Images- Introduction to RIFF, AVI, JPEG, Bitmap file Format, Index Chunk and Boundary, condition handling for AVI files. Design Elements 2.2 Compression and Decompression-Types of compression ,Need of Data Compression ,Color Gray Scale and Still Video Image , Color Characteristics Color Model 2.3 Sound-Digital audio, Audio file format, MIDI Versus Digital Audio, Synchronization, Orchestration and QOS Architecture	08
Unit 3: Architecture and Issues For Distributed Multimedia System		
1. Explore and Describe Multimedia System Architecture. 2. Define term Distributed Multimedia and specify its need 3. Design framework for multimedia	3.1 Multimedia System Architecture. 3.2 Distributed Multimedia 3.3 Synchronization, Orchestration and QOS Architecture 3.4 Framework for Multimedia System	06
Section II		
Unit 4: Distributed Multimedia Systems		
1. Describe Distributed multimedia and transformation techniques 2. Apply various operation on client server 3. Describe various terms like Client Server Operation, object Server and Multimedia Databases	4.1 Components of Distributed Multimedia Systems engineering tasks 4.2 Distributed Client Server Operation. 4.3 Multimedia Object Server 4.4 Multi Server Network topologies 4.5 Distributed Multimedia Databases	04
Unit 5: Animation and Video		
1. Define Animation and state principle of Animation 2. Discover working of Video. 3. Deal with Digital Video	5.1 The Power of motion, Principles of Animation 5.2 How Video Works, and Broadcast Video Standards 5.3 Digital video, Study of story board.	04
Unit 6: Multimedia Authoring Tools		
1. Use various Authoring Tools. 2. Design Animation using various	6.1 Types of Authoring Tools-Different . 6.2 Card- and Page-Based Authoring tools 6.3 Icon-and Object Based Authoring tools Time Based Authoring tools.	04
Total Hrs		32

B. List of Practicals/Laboratory Experiences/Assignments:

Practical No.	Specific Learning Outcomes (Psychomotor Domain)	Units	Practical Hrs.
1	Installation of Adobe Flash, Photoshop and Corel draw software	Units 1 : Introduc- tion To Multimedia	04
2	Creating any simple video in Movie maker using Timeline and Sound.	Units 1 : An- imation and Video	02
3	Corel Draw Assignments Implementing and Study of all tools in Corel Draw software Implementing different fonts of text on the screen Creating Wallpaper using multiple tools of Corel draw Applying Drop Shadow effect or vignette effect or mirror, reflection effect etc. to text Merging photographs and rotate and change rotation center in CorelDraw Interfacing of sound, editing, mixing sound, cropping, cross fading and effect Creating Banner effect etc	Units 1 : An- imation and Video	15
4	Photoshop Assignments Implementing and Study of all tools in Photoshop software Creating or Adding Rainy Season effect in image Creating funny image Creating water drop effect in image Designing poster by using different Text effect (Ketchup, rope, Fire, fruit) Create broken mirror effect, Flaming ball effects Interfacing of images, Resolution, Editing, color modes. Setting current and background colors.	Unit 2:An- imation an Video	15
5	Adobe Flash Assignments Implementing and Study of all tools in Adobe Flash software Study and Implementing Shape and Motion Tweening in flash.Example for Implementation of types of symbols Creating Animation using Motion guide layer Creating Animation using Masking Creating Bouncing and Rolling ball down etc examples Controlling windows to load URL, Creating advanced/animated buttons Creating Roll Over/Roll Out effect on buttons Rotating ball using scripting and other Scripting Animation etc Create Animation for Start/Stop Button for Animation using Script Create Animation Using Progress Bar preloaded Action Script Loading Sound into Animation Clip	Unit 2: An- imation and Video	20
6	Mini project -Create a movie of minimum 15 minutes.	Unit 3: An- imation and Video	08
		Total Hrs	64

Instructional Strategy:

Sr.No	Topic	Instructional Strategy
1	Introduction To Multimedia	Classroom teaching
2	Multimedia Building Blocks and Compression/Decompression with File Formats	Classroom teaching, laboratory demonstration
3	Architecture and Issues For Distributed Multimedia System	Classroom teaching
4	Distributed Multimedia Systems	Class room teaching, laboratory work
5	Animation and Video	Class room teaching, laboratory work
6	Multimedia Authoring Tools	Class room teaching, laboratory work

Specification Table for Theory Paper:

Sr. No.	Topic	Cognitive Levels			Total
		Knowledge	Comprehension	Application	
1	Introduction To Multimedia	02	02	03	07
2	Multimedia Building Blocks and Compression/Decompression with File Formats	02	02	03	07
3	Architecture and Issues For Distributed Multimedia System	02	02	02	06
4	Distributed Multimedia Systems	02	02	03	07
5	Animation and Video	02	02	02	06
6	Multimedia Authoring Tools	02	02	02	06
Total		18	14	08	40

Assessment and Evaluation Scheme:

	What		To Whom	Frequency	Max Marks	Min Marks	Evidence Collected	Course Outcomes
Direct Assessment Theory	Continuous Assessment	PT	Students	Two PT (average of two tests will be computed)	10	–	Test Answer sheets	1,2,3
				Assignment	–		Assignment Book	1,2,3
	TOTAL	10		=				
Direct Assessment Practical	(Term End Examination)	End Exam	Students	End Of the Course	40	14	Theory Answer sheets	1,2,3
	Continuous Assessment	ST		One skill test at end of term	20	–	Practical Answer sheets	
		Journal Writing		Assignments	30	–	Journal	4,5,6,
	(Term End Examination)	End Exam		TOTAL	50	20		
				End Of the Course	50	20	Practical Answer Sheets	4,5,6
Indirect Assessment	Student Feedback on course		Students	After First PT	Student Feedback Form		1,2,3 4,5,6	
	End exam			End Of The Course	Questionnaires			

Scheme Of Practical Evaluation:

S.N.	Description	Max. Marks
1	Evaluation	15
2	Practical Execution	15
3	Viva voce	20
	TOTAL	50

Mapping Course Outcomes With Program Outcomes:

Course Outcomes	Program Outcomes (POs)									
	1	2	3	4	5	6	7	8	9	10
1	2	2	2	3	1	1	1	1	2	2
2	2	3	2	2	2	–	1	1	3	3
3	2	3	2	2	1	–	2	1	2	3
4	2	3	2	3	2	2	2	1	3	3
5	3	2	3	3	3	2	1	2	3	3
6	2	3	3	2	3	2	2	2	2	1

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

Reference & Text Books:

Text Book

Sr. No	Author	Title, Publisher, Year of publication	ISBN Number
1	Tay Vaughan	Multimedia Making it Work 3th edition	TMH
2	Prabhat k. Andheigh	Multimedia Systems Design	Prentice Hall of India
3	Koegel Buford	Multimedia Systems	Pearson Education
4	Katherine Ulrich	Micromedia Flash for Windows and Macintosh	Pearson Education
5	Free Halshall	Multimedia Communication	Pearson Education
6	R. Steimnetz, K. Nahrstedt	Multimedia Computing, Communication and Application	Pearson Education
7	J.D. Gibson	Multimedia Communication Directions and Innovations	Pearson Education
8	J.F. Kurose, K. W. Rose	Computer Networking	Pearson Education

E-References:

- <http://www.coreldrawtips.com/site/basic-tutorials>
- <http://design.tutsplus.com/categories/text-effects>
- <http://www.freeadobeflashtutorials.com/>
- <http://www.techwarehouse.com/engine/65eeb3b5/Flash-Tutorial-For-Beginners>

Programme : Diploma in Computer Engineering

Programme Code : 06/26

Name of Course : Scripting Technology Using JSP

Course Code : CM585

Teaching Scheme:

	Hours /Week	Total Hours
Theory	04	64
Practical	02	32

Evaluation:

	Progressive Assessment	Semester End Examination			
		Theory	Practical	Oral	Term work
Duration	Two class tests each of 60 minutes.	03 Hrs.	–	–	–
Marks	20	80	–	25	25

Course Rationale:

JSP is widely used server side scripting language. This course aims at providing in-depth knowledge of sever side scripting through JSP.

Course Outcomes:

Students should be able to

1. Create and deploy HTTP Servlet using Java.
2. Write and execute scripts using JSP for managing threads, sessions, events, and filters..
3. Access and manage database through web pages.
4. Test, Debug and deploy web applications
5. Create CMS portal and interactive web sites.

Course Contents:

A. Theory

Specific Learning Outcomes (Cognitive,Domain)	Topics and subtopics	Hrs.
Section I		
Unit 1: Introduction to Web Programming Environment		
1. Describe HTTP request model 2. Create a servlet program. 3. Enlist servlet lifecycle events. 4. Enlist components of JSP page.	1.1 Evolution of the Web Application 1.2 Overview of the Hypertext Transfer Protocol(HTTP): The HTTP Specification, HTTP Request Model. 1.3 Introduction to Servlets: Servlet LifeCycle, servlet Classes, Threading Models,HTTP sessions 1.4 A Simple Servlet, The Servlet API, The Javax.Servlet Package, Reading Servlet Parameters, Reading Initialization Parameters	10
Unit 2: Elements of JSP		
1. Describe working of JSP 2. Identify Correct JSP Syntax. 3. Explain Different components of JSP.	2.1 JSP Overview: How JSP works, A basic example. 2.2 JSP Syntax and Semantics:The JSP Development Model ,Components of JSP page, Complete example. 2.3 Expressions, Scriptlets and Declarations: Expressions, Scriptlets, Declarations.	12
Unit 3: Request Dispatching and Session and JDBC		
1. Include different resources in JSP page. 2. Use session in JSP page. 3. Create JSP page to connect database. 4. Enlist different drivers	3.1 Request Dispatching: Anatomy of Request processing, Including Other Recourses. 3.2 Session and Thread Management: Session Tracking , The Session API, Thread Management, Servlet Threading Models. 3.3 Database Access With JDBC: Overview of JDBC,JDBC Drivers, Connecting to a Database With Driver manager,	12
Section II		
Unit 4: Application Event Listeners and Filters:		
1. Create Event listeners for JSP Page 2. Create and deploy filter.	4.1 Application Event Listeners: Beyond Session Binding Listeners, Event Scope, Event Listener Interfaces, Examples. 4.2 Filters: Filter overview, Developing and deploying a Filter.	10
Unit 5: JSP Tag Extensions:		
1. Create and Use custom tag in JSP. 2. Enlist components of tag library. 3. Use EL in JSP page. 4. Use JSTL Library in JSP Page. 5. Enlist different tags in JSTL. 6. Write syntax of tags of JSTL.	5.1 Introduction to Custom Tags: Why Custom Tags, Developing your first Custom Tag, How Tag handlers Works, tag Libraries, The Tag Handler Apathy Tag Handler Life Cycle, Defining Tag Attributes, the iteration of Tag interface, The Body tag Handler API. 5.2 Expression Language: What is EL? EL syntax, Functions. 5.3 The JSP Standard Tag Library (JSTL):Getting started with JSTL, Core Tags,XML Tags,SQL Tags, Formatting Tags.	12

	5.4 Simple Tag Extensions, tag Files, and JSP Fragments: JSP Fragments, The Simple Tag Interface, Tag Files.	
Unit 6: Testing and Deploying web application		
1. Use different approaches to test JSP page. 2. Create web archive of web project.	6.1 JSP Testing and Debugging: Building a Mental Model, Testing in Isolation, Debugging Tools. 6.2 Deploying Web application: The web application environment, The web archive (war) file, The deployment Descriptor.	10
Total Hrs		64

B. List of Practicals/Laboratory Experiences/Assignments:

Practical No.	Specific Learning Outcomes (Psychomotor Domain)	Units	Hrs.
1	Installation of Web Server.	Introduction to Web Programming Environment	01
2	Write a program for demonstration of Generic servlets.	Introduction to Web Programming Environment	02
3	Write a program for demonstration of HTTP Servlets.	Introduction to Web Programming Environment	02
4	Write a simple JSP program and monitor the corresponding servlet class.	Introduction to Web Programming Environment	01
5	Write a simple JSP program program for Demonstrating use of all basic elements.	Elements of JSP	03
6	Write a simple JSP program program for Demonstrating use of expressions, declarations.	Elements of JSP	03
7	Write a JSP program program for Demonstrating use of request dispatching.	Request Dispatching and Session and JDBC	02
8	Write a simple JSP program program for Demonstration of Session Management .	Request Dispatching and Session and JDBC	02
9	Write a simple JSP program program for Demonstration of Thread Management .	Request Dispatching and Session and JDBC	02
10	Write a JSP program for Demonstration of connecting to database using JDBC.	Request Dispatching and Session and JDBC	04
11	Write a JSP program program for Demonstration of Event Listeners.	Application Event Listeners and Filters	02
12	Write a JSP program program for Demonstration of Filters.	Application Event Listeners and Filters	02
13	Write a JSP programs for Demonstration of all tags covered in chapter.	JSP Tag Extensions	04
14	Creating Web archive and writing Deployment descriptor.	Testing and Deploying web application	02
Total Hrs			32

Instructional Strategy:

Sr.No	Topic	Instructional Strategy
1	Introduction to Web Programming Environment	Classroom teaching, PPT presentation, Laboratory Work
2	Elements of JSP	Classroom teaching, PPT presentation, Laboratory Work
3	Request Dispatching and Session and JDBC	Classroom teaching, PPT presentation, Laboratory Work
4	Application Event Listeners and Filters	Classroom teaching, PPT presentation, Laboratory Work
5	JSP Tag Extensions	Classroom teaching, PPT presentation, Laboratory Work
6	Testing and Deploying web application	Classroom teaching, PPT presentation, Laboratory Work

Specification Table for Theory Paper:

Sr. No.	Units	Levels from Cognition Process Dimension			Total
		R	U	A	
1	Introduction to Web Programming Environment	05	05	02	12
2	Elements of JSP	02	04	06	12
3	Request Dispatching and Session and JDBC	06	04	06	16
4	Application Event Listeners and Filters	04	02	06	12
5	JSP Tag Extensions	06	04	06	16
6	Testing and Deploying web application	02	04	06	12
Total		25	23	32	80

Assessment and Evaluation Scheme:

	What		To Whom	Frequency	Max Marks	Min Marks	Evidence Collected	Course Outcomes
Direct Assessment Theory	Continuous Assessment (CA)	PT	Students	Two PT (average of two tests)	20	–	Test Answer sheets	1,2,3,4,5,6
	–	–		–	–	–	–	–
	TOTAL					20	=	
	Term End Examination (TEE)	End Exam		End Of the Course	80	28	Theory Answer sheets	1,2,3,4,5,6
Direct Assessment Practical	Continuous Assessment (CA)	–	Students	–	–	–	–	
		Journal Writing		Assignments	25	–	Journal	1,2,3,4,5,6,
	TOTAL					25	10	
	Term End Examination (TEE)	End Exam		End Of the Course	25	10	Oral	1,2,3,4,5,6
Indirect Assessment	Student Feedback on course		Students	After First PT	Student Feedback Form		1,2,3,4,5,6	
	End Exam			End Of The Course	Questionnaires			

Scheme Of Practical Evaluation:

S.N.	Description	Max. Marks
1	Observations	10
2	Calculations and Result	05
3	Viva	10
	TOTAL	25

Mapping Course Outcomes With Program Outcomes:

Course Outcomes	Program Outcomes (POs)									
	1	2	3	4	5	6	7	8	9	10
1	3	3	3						1	1
2	3	3	3		2			1	1	
3	3	2	2							
4	3	2	2							
5	2	3	2							
6	3	2	2							

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

Reference & Text Books:

Text Book

Sr. No	Title	Author	Publication
1	The Complete Reference: JSP 2.0	Phill Hanna	Tata-McGraw Hill

Reference Books

Sr. No	Title	Author	Publication
1	Java Server Pages	Hans Bergsten	O'Reilly
2	Java Database Programming	Mathew Siple	Tata Mc-Graw Hill

E-References:

1. <http://www.howstuffworks.com>
2. <https://www.javatpoint.com/jsp-tutorial>
3. <https://www.tutorialspoint.com/jsp/>
4. <https://www.guru99.com/jsp-tutorial.html>
5. <https://www.javatpoint.com/>

Programme : Diploma in Computer Engineering
Programme Code : 06/07
Name of Course : Network Management and Administration
Course Code : CM586

Teaching Scheme:

	Hours /Week	Total Hours
Theory	04	64
Practical	02	32

Evaluation:

	Progressive Assessment	Semester End Examination			
		Theory	Practical	Oral	Term work
Duration	Two class tests each of 60 minutes.	03 Hrs.	–	–	–
Marks	20	80	–	25	25

Course Rationale:

This course is aimed at providing the students with hands on Experience over Network Operating System: Windows 2008 Server, Configuring Server for Network Environment. It would expose students to administration and security issues in Network Environment.

Course Outcomes:

Students should be able to

1. Install and configure Windows server 2008 .
2. Manage group policies.
3. Apply NTFS permissions to files and folders.
4. Create subnet and configure TCP/IP properties.
5. Configure DNS and DHCP Server.
6. Manage storage and backup for various user.

Course Contents:

A. Theory

Specific Learning Outcomes (Cognitive,Domain)	Topics and subtopics	Hrs.
SECTION-I		
Unit 1: The Windows Server 2008 Environment		
1.Install Windows Server 2008 operating system. 2. Configure administrative tools. 3. Manage Users and Groups .	1.1 The Windows Server 2008 family and key features, Hardware requirements, Installation of Windows Server 2008. Architecture of windows server 2008. 1.2. Installing Device Driver, Signing Options, Installing, configuring Administrative Tools. 1.3 Implementing User, Group, and Computer Accounts : Creating User Accounts, Creating Computer Accounts, Modifying User and Computer Account Properties. 1.4 Creating User Account Template, Managing User and Computer account Accounts 1.5 Managing Groups : Creating groups, Managing group membership, Strategies for using groups, Using default groups, Creating Global and Domain Local Groups.	12
Unit 2: Managing Access to Resources and Managing User Environment		
1.Compare various file systems. 2. Apply NTFS permissions to files and folders. 3. Configure Active directory. 4. Manage group policies.	2.1 File systems – FAT, Fat32, NTFS, Features of NTFS, Creating and Sharing Folders, Configuring NTFS Permissions, Publishing Shared Folders, Testing Permissions, Determine effective permissions. 2.2 The active directory’s logical structure, Benefits of active directory, Components and mechanisms in active directory – datastore, Schema, Global catalog, replication. Overview of Active directory domains, transitive two way trust relationships, using multiple domains, active directory forest, active directory object names, active directory’s physical structure, accessing active directory through LDAP 2.3 Managing Group Policy :Configuring Group Policy Settings, Assigning Scripts with Group Policy, Restricting Group Membership and Access to Software Planning group policy strategy	12
Unit 3: Administrative Templates and Audit Policy		
1. Manage Group policies. 2. Use Account policy. 3. Provide and maintain security to Server.	3.1 Group Policy Objects GPOs Group policy inheritance,Managing GPOs, Delegating Administrative control to GPOs Redirecting folders using group policy 3.2 Using Account policy – password policy, logon policy, disk quota policy, account lockout policy, audit policy, Configuring Auditing 3.3 Overview of Security in Windows Server 2008, Using Security templates to	08

	Secure Computers, Testing Computer Security Policy, Managing Security Logs,	
SECTION-II		
Unit 4: Windows Server 2008 networking and IP Routing		
1. Describe network infrastructures. 2. Describe various protocols.	4.1 Defining a network infrastructure, basic terms – workgroup, domain, multiple domains, trust relationship .Active directory, remote access, name resolution, TCP/IP network infrastructure – network protocols 4.2 IP address – the hierarchical addressing scheme, classification of IP address, Subnetting network, subnetting concepts – information hiding, subnetting TCP/IP networks, calculating number of subnets 4.3 Timesharing Environment , Logging , Network Virtual Terminal. Embedding, File Transfer Protocol , Communication over Control Connection, Communication over data connection, Anonymous FTP. 4.4 Architecture, User agent, Message transfer agent (SMTP), Message Access agent(POP and IMAP), Email Privacy.	10
Unit 5: DHCP and Domain Naming Systems		
1. Install and Configure DNS and DHCP server. 2. Manage Remote access services.	5.1 Overview of DHCP, the DHCP lease process, Understanding scope details, Advantages and disadvantages of DHCP. Installing DHCP, authorizing DHCP for active directory, creating and managing DHCP scopes,managing reservations and exclusions,super scope, multicast scopes. 5.2 Understanding DNS, Domain naming, DNS and the internet, DNS and Windows Server 2008, Dynamic DNS, DNS Terminology , Working of DNS 5.3 Installation and configuration of DNS server, Creating DNS zones – forward lookup and reverse lookup zone 5.4 Overview of Dial-up networking (DUN) and Virtual private networks (VPN) , Installing the remote access services, configuring RAS server. Managing RAS, Remote access security – user authentication, connection security, access control, Using remote access policies, Using remote access profiles.	8
Unit 6: Backup and Recovery Strategy and Cloud Computing		
1. Implement different backup and recovery strategies. 2. Explain cloud computing technology.	6.1 Backup and Recovery Strategy :Planning backup and recovery strategy, using windows backup, Scheduling backup jobs, Backing up system state data, Using volume shadow copy, automated system recovery . 6.2 Cloud Computing : Evolution of Cloud Computing, Introduction to Cloud Computing: Cloud Computing model(NIST), Properties and Characteristics.Introduction to Computing Architecture : Cloud Computing Stack, Service models , Deployment Models. 6.3 Introduction to Cloud computing, Types of cloud, Desired features of cloud, Cloud Infrastructure management, Infrastructure as service providers, Platform as service providers.	8
Total Hrs		64

B. List of Practicals/Laboratory Experiences/Assignments:

Practical No.	Specific Learning Outcomes (Psychomotor Domain)	Units	Hrs.
1	a. Installation of Windows Server 2008/Windows 2000 Server/ Windows 2008 Server b. Creation and Management of local users . c. Creation and Management of group and implementation of its properties. d. Installation of Device Drivers. e. System Performance Monitoring through Windows Performance Monitoring.	01	06
2	a. Installation and implementation of Remote Desktop. b. Sharing and managing Resources.	02	04
3	a. Creating login screen, Configuration of logon policies, password policy. b. Testing,creating and importing security templates.	03	04
4	a. Configuration of TCP/IP network i) Assign IP Address ii) Verify IP Communication b. Implementation of local, roaming, hardware profile.	04	06
5	a. Installation and verification of Active Directory i. Domain Controller ii) NetBIOS Domain Name iii)Permissions iv) Verifying the Installation. b. Event Viewer, Event Log c. Installation of Domain Name System i. DNS Namespace ii)DNS Zones..	05	04
6	a. Installation and implementation of DHCP i) Authorizing DHCP for Active Directory. ii) Creating and managing DHCP Scopes b. Writing batch scripts for administrative purpose.	05	04
7	a. Case Study on any one Open source and commercial Cloud-Microsoft Azure , Eucalyptus , Amazon EC2	06	04
		Total Hrs	32

Instructional Strategy:

Sr.No	Topic	Instructional Strategy
1	The Windows Server 2003 Environment	Classroom teaching, PPT presentation, Laboratory Work
2	Managing Access to Resources and Managing User Environment	Classroom teaching, PPT presentation, Laboratory Work
3	Administrative Templates and Audit Policy	Classroom teaching, PPT presentation, Laboratory Work
4	Windows Server 2008 networking and IP Routing	Classroom teaching, PPT presentation, Laboratory Work
5	DHCP and Domain Naming Systems	Classroom teaching, PPT presentation, Laboratory Work
6	Backup and Recovery Strategy and Cloud Computing	Classroom teaching, PPT presentation, Laboratory Work

Specification Table for Theory Paper:

Sr. No.	Units	Levels from Cognition Process Dimension			Total
		R	U	A	
1	The Windows Server 2003 Environment	02	02	08	12
2	Managing Access to Resources Managing User Environment	04	02	10	16
3	Administrative Templates and Audit Policy	02	02	08	12
4	Windows Server 2008 networking and IP Routing	02	02	08	12
5	DHCP and Domain Naming Systems	04	02	10	16
6	Backup and Recovery Strategy and Cloud Computing	04	02	06	12
Total		18	12	50	80

Assessment and Evaluation Scheme:

	What		To Whom	Frequency	Max Marks	Min Marks	Evidence Collected	Course Outcomes
Direct Assessment Theory	Continuous Assesment (CA)	PT	Students	Two PT (average of two tests)	20	–	Test Answer sheets	1,2,3,4,5,6
	–	–		–	–	–	–	–
	TOTAL					20	=	
Direct Assessment Practical	Term End Examination (TEE)	End Exam	Students	End Of the Course	80	28	Theory Answer sheets	1,2,3,4,5,6
	Continuous Assesment (CA)	–		–	–	–	–	
	Journal Writing	–		Assignments	25	–	Journal	1,2,3,4,5,6,
TOTAL				25	10			
Indirect Assessment	Student Feedback on course	–	Students	After First PT	Student Feedback Form			1,2,3,4,5,6
	End Exam	–		End Of The Course	Questionnaires			

Scheme Of Practical Evaluation:

S.N.	Description	Max. Marks
1	Practical Performance	15
2	Viva	10
	TOTAL	25

Mapping Course Outcomes With Program Outcomes:

Course Outcomes	Program Outcomes (POs)									
	1	2	3	4	5	6	7	8	9	10
1	3	3	3	3	1	–	–	–	–	2
2	3	3	3	3	1	–	–	1	–	–
3	1	3	3	3	1	–	–	–	1	1
4	3	3	2	3	1	–	–	–	1	1
5	3	3	2	3	1	–	–	–	1	–
6	1	3	1	3	1	–	–	–	1	1

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

Reference & Text Books:

Text Book

Sr. No	Title	Author, Publisher, Edition and Year of publication	ISBN number
1	MCITP Guide to Microsoft Windows Server 2008 Administration	Michael Palmer, CENGAGE learning.	ISBN 10: 1423902823 ISBN 13: 9781423902829
2	MCITP Windows server 2008 server Administrator Study Guide	Darril Gibson, Wiley Publishing, Inc	ISBN 10: 0470293152 ISBN 13: 9780470293157
3	70-646 Windows server Administration Training kit	Ian Mclean and Orin Thomas, Microsoft Press	ISBN 10: 0735625107 ISBN 13: 9780735625105
4	Data Communication and Networking	Behrouz Forouzan, Osborne Publishing	ISBN 10: 0072322047 ISBN 13: 9780072322040
5	Cloud Computing : Principles and paradigms	Rajkumar Buyya, James Broberg 2011, Wiley Publication	ISBN 10: 0470887990 ISBN 13: 9780470887998

E-References:

1. <http://www.4shared.net>
2. <http://www.technet.microsoft.com>
3. <http://www.msdn.microsoft.com>

Programme : Diploma in Computer Engineering

Programme Code : 06/07/26

Name of Course : System Programming

Course Code : CM587

Teaching Scheme:

	Hours /Week	Total Hours
Theory	04	64
Practical	02	32

Evaluation:

	Progressive Assessment	Semester End Examination			
		Theory	Practical	Oral	Term work
Duration	Two class tests each of 60 minutes.	03 Hrs.	–	–	–
Marks	20	80	–	25	25

Course Rationale:

System Programs are the set of software which aids in effective communication with the system and makes the user interface more friendly. This course is aimed in developing the knowledge about design aspects of such system software.

Course Outcomes:

Students should be able to

1. Create and deploy HTTP Servlet using Java.
2. Recognize various phases of assembler design.
3. Recognize various phases of macro processor design.
4. Illustrate functions of loaders.
5. Demonstrate various compilation and parsing techniques.

Course Contents:

A. Theory

Specific Learning Outcomes (Cognitive,Domain)	Topics and subtopics	Hrs.	Marks
SECTION I: Unit 1: Introduction			
1.1 Recognize components of system programming 1.2 Identify different system softwares. 1.3 Describe general machine structure.	1.1 Background, machine structure, Components of programming. 1.2 System: Assemblers, loaders, Macros, Compilers, formal system. 1.3 Evolution of Operating System. 1.4 General Machine Structure: Machine Structure IBM 360 and 370, Machine Language	10	12
Unit 2: Assemblers			
1. Recognize assembler and its design components. 2. Classify data structures of assembler. 3. Demonstrate searching algorithms.	2.1 General design procedure, Design of the assembler, Statement of the problem 2.2 Data Structure, Format of databases, Algorithm (Detailed PASS 1 and PASS 2 Flowchart), Look for modularity, Table Processing. Searching: Linear Search, Binary search	10	14
Unit 3: Macro Language and Macro Processors			
1. Define macro. 2. Recognize macro call and macro expansion 3. Demonstrate single pass and two pass macro processors algorithm 4. Demonstrate assembly process	3.1 Macro Instructions, Features of a Macro facility, Macro Instruction Arguments. 3.2 Conditional macro expansion, Macro calls within Macros, Macro Instruction, defining macros, Implementation of restricted facility. 3.3 A two Pass algorithm, A single pass algorithm, Implementation of macro calls within Macros, Implementation within an assembler.	12	14
SECTION II Unit 4: Loaders			
1. Recognize loading process 2. Differentiate different loaders 3. Recognize binding and linking process	4.1 Introduction, Loader Schemes, "Compile and go" loaders, General Loader Scheme, Absolute Loaders, Subroutine linkages 4.2 Relocating loaders, Direct-linking loaders, Other loader schemes: Binders, linking loaders, Overlays 4.3 Dynamic Binders, Design of an Absolute loader, Design of Direct Linking Loader. 4.4 Specification Problem, Specification of data structures, Format of databases. Algorithm	12	12
Unit 5: Compilers			
1. Recognize compilation process 2. Describe phases of compiler 3. Demonstrate phases of compiler	5.1 Statement of a problem, recognizing basic elements, Recognizing Syntactic units and Interpreting meaning. 5.2 Intermediate form: - Arithmetic statements, non-arithmetic statement, non-executable statements. 5.3 Storage Allocation, Code Generation: Optimization (M/c independent), Optimization (M/c dependent).	10	12

	5.4 Assembly Phase, General Model of Compiler, Phases of a Compiler: Lexical Phase Tasks, databases, algorithm, Syntax Phase: Databases, Algorithm. Interpretation Phase:Databases, Algorithm. Optimization: Databases, Algorithm. Storage Assignment: Databases,Algorithm.Code Generation: Databases, Algorithm. Assembly Phase: Databases, Algorithm.Passes of a Compiler	14	16
Unit 6: Parsing			
1. Describe parsing techniques 2. Demonstrate parsing techniques. 3. Describe software tools. 4. Classify different software tools.	6.1 Parse tree and abstract syntax tree Parsing Techniques: Top down parsing Implementing Top down parsing. 6.2 Comment on Top down parsing, Top down parsing Without backtracking, Practical Top down parsing Bottom up parsing, LALR parsing. 6.3 Software Tools: Software tools for program Development, Editors, Debug monitors, Programming environments, User interfaces.	10	12
Total Hrs		64	80

B. List of Practicals/Laboratory Experiences/Assignments:

Practical No.	Specific Learning Outcomes (Psychomotor Domain)	Units	Hrs.
1	Implement a symbol table with functions to create, insert, modify, search, and display using 'C'.	Assemblers	04
2	Implement programs on sorting techniques within Symbol Table using 'C'.	Assemblers	02
3	Implement programs on searching techniques within Symbol Table using 'C'.	Assemblers	02
4	Simulation and Study of the Assembler using Simulation Tool (e.g. Reads51)	Assemblers	02
5	Implement a single pass macro processor	Macro Language and Macro Processors	04
6	Simulation of loaders using Simulation Tool	Loaders	04
7	Design of various phases of Compiler.	Compilers	06
8	Demonstrating use of parsing techniques on given string.	Parsing	04
9	Study of different Software Tools.	Parsing	04
		Total Hrs	32

Instructional Strategy:

Sr.No	Topic	Instructional Strategy
1	Introduction	Explanation of components of programming, explanation of general machine, explanation of system softwares using chalk – board and/or projector
2	Assemblers	Explanation of assembly process using chalk – board and/or projector, Simulation and demonstration of One pass and Two pass assembler algorithms through problem-solving with using chalk – board and/or projector.
3	Macro Language and Macro Processors	Explanation of macro language, Explanation of macro, macro call, macro expansion using chalk – board and/or projector, demonstration of macro processor.
4	Loaders	Explanation of loading process and different types of loaders
5	Compilers	Explanation of compiling a program, Demonstrate phases of compiler
6	Parsing	Explanation of parsing, explanation of parsing techniques, explanation of software tools

Specification Table for Theory Paper:

Sr. No.	Units	Levels from Cognition Process Dimension			Total
		R	U	A	
1	Introduction	08	02	02	12
2	Assemblers	08	02	04	14
3	Macro Language and Macro Processors	08	02	04	14
4	Loaders	08	02	02	12
5	Compilers	10	02	04	16
6	Parsing	06	02	04	12
Total		48	12	20	80

Assessment and Evaluation Scheme:

	What		To Whom	Frequency	Max Marks	Min Marks	Evidence Collected	Course Outcomes
Direct Assessment Theory	Continuous Assessment (CA)	PT	Students	Two PT (average of two tests)	20	–	Test Answer sheets	1,2,3,4,5,6
	–	–		–	–	–	–	–
	TOTAL					20	=	
	Term End Examination (TEE)	End Exam		End Of the Course	80	28	Theory Answer sheets	1,2,3,4,5,6
Direct Assessment Practical	Continuous Assessment (CA)	–	Students	–	–	–	–	
		Journal Writing		Assignments	25	–	Journal	1,2,3,4,5,6,
	TOTAL					25	10	
	Term End Examination (TEE)	End Exam		End Of the Course	25	10	Practical Answer Sheets	1,2,3,4,5,6
Indirect Assessment	Student Feedback on course		Students	After First PT	Student Feedback Form			1,2,3,4,5,6
	End Exam			End Of The Course	Questionnaires			

Scheme Of Practical Evaluation:

S.N.	Description	Max. Marks
1	Observations	10
2	Practical Performance	20
3	Viva - voice	20
	TOTAL	50

Mapping Course Outcomes With Program Outcomes:

Course Outcomes	Program Outcomes (POs)									
	1	2	3	4	5	6	7	8	9	10
1	3	2	1	2	1	–	–	–	–	1
2	3	2	1	2	1	–	–	–	–	1
3	3	2	1	2	1	–	–	–	–	1
4	3	2	1	2	1	–	–	–	–	1
5	3	2	1	2	1	–	–	–	–	1
6	3	2	1	2	1	–	–	–	–	1

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

Reference & Text Books:

Sr. No	Title	Author	PUBLISHER
1	Systems Programming	John J. Donovan	Tata McGraw Hills
2	Systems Programming and Operating systems	Dhamdhere	Tata McGraw Hills

E-References:

1. <http://www.nptel.ac.in>
2. <http://www.tutorialspoint.com>
3. <http://www.techopedia.com>

Programme : Diploma in Computer Engineering/Information technology

Programme Code : 06/26/07

Name of Course : Advanced Database Management System

Course Code : CM588

Teaching Scheme:

	Hours /Week	Total Hours
Theory	04	64
Practical	02	32

Evaluation:

	Progressive Assessment	Semester End Examination			
		Theory	Practical	Oral	Term work
Duration	Two class tests each of 60 minutes.	02 Hrs.	–	–	–
Marks	20	80	25	–	25

Course Rationale:

In the present era, it is very essential to develop and arrange data in such a way that it solves a complex problem efficiently. Advanced database management is a subject which gives emphasis on managing the data which is available on internet. The students will be able to handle, manage and transform online data in a secure environment and gain the knowledge of emerging database technology such as multimedia database, digital library database and mobile database.

Course Outcomes:

Students should be able to

1. Develop ER model for a given case study.
2. Apply query optimization techniques for processing a given database efficiently.
3. Write SQL queries for concurrent control over a given database.
4. Apply different methods and techniques of distributed query processing.
5. Write and execute queries on Object – oriented, multimedia, mobile databases
6. Use XML for representing the database in web environment.

Course Contents:

A. Theory

Specific Learning Outcomes (Cognitive,Domain)	Topics and subtopics	Hrs.
Section I		
Units 1 : Introduction to Database Management system		
1. Explain in detail DBMS architecture 2. Construct E-R model from given specification and transform into relational model.	1.1Introduction: Definition of DBMS Benefits of DBMS 1.2 Database-System Architectures : Centralized and client–server architectures, Server system architectures, Parallel systems, Distributed systems, Network types Special-Purpose Systems, Open-Source Operating Systems. 1.3Extended ER : E-R model revisited Specialization and Generalization Extended E-R , Subclass super class Constraints and characteristics of specialization Generalization, Relationship types of degree Higher than two , Aggregation, Union and categories , EER – To Relation Models Mapping	12
Unit 2: Advanced SQL and Query processing.		
1. Explain in detail query processing and techniques involved in query optimization 2. Implement advanced queries using Structured Query Language. 3. Translations of SQL Queries into relational algebra.	2.1 Advanced SQL : SQL Data types Schemas , Queries based on SQL 3 standards (outer join, multi join , left, right, a full outer join, equal join, natural join , Aggregate, functions, Null values etc. EXIST and NOT EXIST, any / all, pattern matching Dynamic SQL 2.2 Query Processing: Overview Measures of Query cost, Selection operation ,Sorting ,Join Operations Other Operations Evaluation of Expression. 2.3Query Optimization: Translations of SQL Queries into relational algebra, Heuristic approach cost base optimization	14
Unit 3: Transaction and Concurrency control		
1. Analyze and apply Concurrency Control and Reliability Techniques. 2. Write a program to simulate lock-based concurrency control protocol.	3.1 Transaction: Transaction concept, Transaction state, Implementation of atomicity and durability, Concurrent executions, Serializability, Recoverability, Implementation of isolation, Testing for serializability. 3.2 Concurrency control: Lock-based protocols, Timestamp-based protocols, Validation-based protocols, Multiple granularity, Multiversion schemes, Deadlock handling, Insert and delete operations, Weak levels of consistency, Concurrency in index structures	10

Section II

Unit 4: Parallel Databases AND Distributed Databases

<p>1. Characterize Parallel Databases and Distributed Object Databases 2. Apply different methods and techniques of distributed query processing.</p>	<p>4.1 Parallel Databases Parallel databases, I/O parallelism, Interquery parallelism, Intraoperation parallelism, Design of parallel systems . 4.2 Distributed Databases : Homogeneous and heterogeneous databases, Distributed data storage, Distributed transactions, Commit protocols, Concurrency control in distributed databases, Availability, Distributed query processing, Heterogeneous distributed databases, Directory systems.</p>	12
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Unit 5: Emerging Database Technologies

<p>1. Analyze, design and evaluate the construct of various advanced databases such as object-Based, Multimedia and Mobile Database. 2. Discuss issues regarding emerging database technologies 3. Write an SQL to store and retrieve multimedia objects.</p>	<p>5.1 Object-Based Databases Overview of object-based databases, Complex data types, Structured types and inheritance in SQL, Table inheritance, Array and multiset types in SQL, Introduction of object-identity and reference types in SQL, Object-oriented versus object-relational . 5.2 Multimedia Database: Multimedia Sources, Multimedia database Queries, multimedia Database application 5.3 Architecture of mobile databases , Characteristics of mobile, computing Mobile DBMS, commercial mobile database</p>	10
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Unit 6: XML and Internet Databases:

<p>6.1. Create XML Schema 6.2. Describe structure of XML data.</p>	<p>6.1 Structure of XML data, XML document schema, Querying and transformation, Application program interfaces to XML, Storage of XML data, XML applications</p>	06
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B. List of Practicals/Laboratory Experiences/Assignments:

Practical No.	Specific Learning Outcomes (Psychomotor Domain)	Units	Practical Hrs.
1	Demonstration of Installation of Oracle Database Softwares.	Unit 1:Introduction to Database Management system	02
2	Write Queries using outer join, multi join , left, right, a full outer join, equal join, natural join, Aggregate function	Unit 2:Advanced SQL and Query processing.	04
3	Translations of SQL Queries into relational algebra	Unit 2:Advanced SQL and Query processing.	04
4	Write Query using pattern matching Dynamic SQL	Unit 2:Advanced SQL and Query processing	04
5	Write a program to simulate lock-based concurrency control protocol.	Unit 3:Transaction and Concurrency control	02
6	Write a program to simulate timestamp-based concurrency control protocol.	Unit 3:Transaction and Concurrency control	02
7	Write a program to simulate validation-based concurrency control protocol.	Unit 3:Transaction and Concurrency control	02
8	Write an SQL to store and retrieve multimedia objects (Image, Audio or Video). in Oracle Databases.	Unit 5:Emerging Database Technologies	04
9	Study of XML	Unit 6:XML and Internet Databases	02
10	Creating XML Schema	Unit 6:XML and Internet Databases	02
11	Implementation of accessing database from a java/any programming language.	Unit 1,2,3,4,5,6	04
		Total Hrs	32

Instructional Strategy:

Sr.No	Topic	Instructional Strategy
1	Introduction to Database Management system	Explanations of basic concepts
2	Advanced SQL and Query processing	Explanation and Practical implementation
3	Transaction and Concurrency control	Explanation of transaction and concurrency control and Practical implementation
4	Parallel Databases AND Distributed Databases	Explanation and Practical implementation
5	Emerging Database Technologies	Explanation and Practical implementation
6	XML and Internet Databases	Explanation and Practical implementation

Specification Table for Theory Paper:

Sr. No.	Topic	Cognitive Levels			Total
		Knowledge	Comprehension	Application	
1	Introduction to DBMS	06	06	00	12
2	Advanced SQL and Query processing	04	04	06	14
3	Transaction and Concurrency controls	04	04	06	14
4	Parallel Databases AND Distributed Databases	04	04	06	14
5	Emerging Database Technologies	04	04	06	14
6	XML and Internet Databases	06	04	02	12
Total		28	26	26	80

Assessment and Evaluation Scheme:

	What		To Whom	Frequency	Max Marks	Min Marks	Evidence Collected	Course Outcomes
Direct Assessment Theory	Continuous Assesment	PT	Students	Two PT (average of two tests will be computed)	20	-	Test Answer sheets	1,2,3,4,5,6
				Assignment	-	-	Assignment Book	1,2,3,4,5,6
	(Term End Examination)			End Exam	End Of the Course	80	28	Theory Answer sheets
Direct Assessment Practical	Continuous Assesment	ST	Students	One skill test at end of term	-	-		
				Journal Writing	-	-	Journal	1,2,3,4,5,6
	(Term End Examination)			End Exam	End Of the Course	25	10	Practical Answer Sheets
Indirect Assessment	Student Feedback on course		Students	After First PT	Student Feedback Form		1,2,3,4,5,6	
	End exam			End Of The Course	Questionnaires			

Scheme Of Practical Evaluation:

S.N.	Description	Max. Marks
1	Evaluation	5
2	Practical Execution	10
3	Viva voce	10
	TOTAL	25

Mapping Course Outcomes With Program Outcomes:

Course Outcomes	Program Outcomes (POs)									
	1	2	3	4	5	6	7	8	9	10
1	–	1	1	2	–	–	–	–	–	–
2	–	2	3	2	–	–	–	–	–	–
3	–	2	3	3	–	–	–	–	–	–
4	–	2	3	3	–	–	–	–	–	–
5	–	3	3	3	–	–	–	–	–	–
6	–	3	1	–	–	–	–	–	–	–

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

Reference & Text Books:

Text Book

Sr. No	Author	Title, Publisher, Year of publication	ISBN Number
1	Abraham Silber-schzt, Henry Korth and S.Sudharshan	Database system concepts (3rd edition)	McGraw Hill
2	Elmasri R., Navathe S	Fundamentals of Database Systems 4' th Edition	Pearson Education
3	Raghu Ramkrishnan and Johannes Gehrke	Database system concepts(3rd edition)	Tata McGraw Hill.
4	Stefano Ceri, Hillseppe , pelagatti	Distributed Databases, Principles and Systems	Tata McGraw Hill.
5	Dr. P.S. Deshpande	SQL and PL/SQL for Oracle log	Black Books Dreamtech Press
6	Mark L. Gillenson, Paulraj Ponniah	Fundamentals of Database Systems	WILEY