Semester - V			
Common Core - Computer Oriented Numerical Methods			
Code: 18UCCC51	Hrs/Week: 6	Hrs/Sem: 90	Credits : 4

To inspire the students with modern computational methods to carry out the problems.

Mission:

To equip students with the knowledge of algorithms of numerical analysis and execute it efficiently with MATLAB.

Course Outcomes:

CO-1Find numerical solution of a problem in all aspects and apply these methods to practical implementation as reliable and efficient.3ReCO-2Recognize and apply appropriate principles and concept relevant to Numerical Analysis.3ApCO-3Discover the most appropriate estimate for the missing data.3CrCO-4Analyze the errors obtained in the numerical solutions of3An	CO. No.	Upon completion of this course, students will be able to	PSOs	CL
CO-1Find numerical solution of a problem in all aspects and apply these methods to practical implementation as reliable and efficient.3ReCO-2Recognize and apply appropriate principles and concept relevant to Numerical Analysis.3ApCO-3Discover the most appropriate estimate for the missing data.3CrCO-4Analyze the errors obtained in the numerical solutions of3An			addressed	
these methods to practical implementation as reliable and efficient.these methods to practical implementation as reliable and efficient.CO-2Recognize and apply appropriate principles and concept relevant to Numerical Analysis.3ApCO-3Discover the most appropriate estimate for the missing data.3CrCO-4Analyze the errors obtained in the numerical solutions of3An	CO-1	Find numerical solution of a problem in all aspects and apply	3	Re
efficient.CO-2Recognize and apply appropriate principles and concept relevant to Numerical Analysis.3ApCO-3Discover the most appropriate estimate for the missing data.3CrCO-4Analyze the errors obtained in the numerical solutions of3An		these methods to practical implementation as reliable and		
CO-2Recognize and apply appropriate principles and concept3Aprelevant to Numerical Analysis.3CrCO-3Discover the most appropriate estimate for the missing data.3CrCO-4Analyze the errors obtained in the numerical solutions of3An		efficient.		
relevant to Numerical Analysis.CO-3Discover the most appropriate estimate for the missing data.3CO-4Analyze the errors obtained in the numerical solutions of3	CO-2	Recognize and apply appropriate principles and concept	3	Ap
CO-3Discover the most appropriate estimate for the missing data.3CrCO-4Analyze the errors obtained in the numerical solutions of3An		relevant to Numerical Analysis.		
CO-4Analyze the errors obtained in the numerical solutions of3An	CO-3	Discover the most appropriate estimate for the missing data.	3	Cr
	CO-4	Analyze the errors obtained in the numerical solutions of	3	An
problems.		problems.		
CO-5Use appropriate numerical methods, determine the solutions to3Ap	CO-5	Use appropriate numerical methods, determine the solutions to	3	Ар
given problems.		given problems.		
CO-6Demonstrate the method of interpolation and find the solution3Un	CO-6	Demonstrate the method of interpolation and find the solution	3	Un
for the data.		for the data.		
CO-7Develop their calculation skills.3	CO-7	Develop their calculation skills.	3	
Cr				Cr
CO-8Differentiate Gauss Jacobi iteration and Gauss Seidal Iteration3	CO-8	Differentiate Gauss Jacobi iteration and Gauss Seidal Iteration	3	
method. An		method.		An

Unit I:

Simultaneous equations-Back substitutions- Gauss Elimination method-Gauss Jordan method-Calculation of inverse of a matrix-Gauss Jacobi iteration method -Gauss –Seidal iteration method.(**Textbook: 1, Chapter: 2**)

Unit II:

Difference operators-Other difference operators-Newton's interpolation formula-Central difference interpolation formulae-Lagrange's interpolation formulae-Divided difference-Divided difference formula-Inverse interpolation.

(Textbook: 1, Chapter: 3, Sections: 3.1, 3.2; Chapter: 4, Sections: 4.1-

4.6)

Unit III:

Derivatives using Newton's forward difference formula-Derivatives using Newton's backward difference formula-Derivatives using Newton's central difference formula-Maxima and minima of the interpolating Polynomial-Numerical Integration-Newton – Cote's quadrature formula-Trapezoidal Rule-Simpson's one third rule-Simpson's three eighth rule-Wedley's rule

(Textbook: 1, Chapter:

5, 6)

Unit IV: MATLAB

Introduction to MATLAB: MATLAB environment – Types of files _ platform – search path – Constants, variables and expressions – Vectors and Matrices – Polynomials – Input Output statements – MATLAB Graphics.

(Textbook:2, Chapters:1,2,3,4,5,6)

Unit V:

Control Structures- writing programs and functions – ordinary differential equation and symbolic mathematics – MATLAB Applications.(**Textbook: 2, Chapters: 7,8,9,10**)

Text Books

- 1. S.Arumugam and Issac,Numerical Analysis with Programming in C, New Gamma Publishing House, Palayamkottai.
- 2. Raj Kumar Bansal, Ashok Kumar Goel, Manoj Kumar Sharma, MATLAB and its Applications in engineering, Pearsons Publications.

Books for Reference:

- 1. Stormy Attaway, MATLAB- A Practical Introduction to Programming and Problem Solving.
- Stephen J. Chapman, Essentials of MATLAB Programming, Published November 1st 2007 by Thomson Learning.

SEMESTER- V			
Core – IX Programming With PHP and MySQL			
Code: 18UCSC53	Hrs / week :4	Hrs / Semester: 60	Credits :4

Create dynamic webpages

Mission:

Use open source software PHP and MYSQL to create dynamic web pages.

Course Outcome:

CO No.	Upon completion of this course, students will be able to	PSO addressed	CL
CO-1	explain the variable usage in PHP	1	Un
CO-2	creating forms with conditional statements	1	Cr
CO-3	describe about arrays, files, cookies and functions.	2	Un
CO-4	create an application using file operation	4	Cr
CO-5	implement the concept of oracle in Mysql query	7	Ар
CO-6	explain the concept Grouping data, filtering, Aggregate function	7	Un
CO-7	explain the concept of the sub queries, joining tables,set operator and full text searching	7	Ар
CO-8	develop PHP program with database connectivity .	7	Cr

SEMESTER- V				
Core – IX Programming With PHP and MySQL				
Code: 18UCSC53	Hrs / week :4	Hrs / Semester: 60	Credits :4	

Unit I :

Introduction:

Introduction- Open source PHP – PHP history- features-variables- statements operators-conditional statements-if-switch-nesting conditions-merging forms with conditional statements-loops-while-do-for – loop iteration with break and continue.

Unit II:

Arrays and Functions:

Arrays- Creating an array- modifying array-processing array-grouping form with arrays- using array functions- creating user defined functions- using files- sessions- cookies- executing external programs-Creating sample applications using PHP.

Unit III:

File Handling:

Opening files using fopen - looping over a files content with feof- reading text from a file using fgets - closing a file- reading character with fgetc- reading whole file with file_get_contents- reading a fle into into an array with file-checking if a file exists-fscanf-parse_ini_file- Getting file information with stat-fseek- copying files with copy- deleting files-writing to a file-reading and writing binary files —locking files

Unit IV:

MySQL:

Effectiveness of MySQL -MySQL Tools-Prerequisites for MySQL connection-Databases and tables-MySQL data types-Creating and manipulating tables-Insertion-updation and deletion of rows in tables -Retrieving data- Sorting and filtering retrieved data -Advanced data filtering-Data manipulation functions-Aggregate functions -Grouping data- Sub queries- Joining Tables- Set operators-Full text searching.

Unit V:

PHP with MySQL:

Working MySQL with PHP-database connectivity- usage of MYSQL commands in PHP- processing result sets of queries- handling errors-debugging and diagnostic functions- validating user input through Database layer and Application layer- formatting query output with Character- Numeric- Date and time –sample database applications.

Text Books:

- 1. Vikram Vaswani- "PHP and MySQL"- Tata McGraw-Hill- 2005
- 2. Ben Forta "MySQL Crash course " SAMS- 2006.
- 3. Steven Holzner, The Complete reference PHP, Tata McGraw Hill, 2008

Books for Reference:

- 1. Tim Converse- Joyce Park and Clark Morgan- "PHP 5 and MySQL"-Wiley India reprint- 2008.
- 2. Robert Sheldon- Geoff Moes- "Beginning MySQL"-Wrox- 2005.
- 3. Alexis Leon and Mathews Leon- "Database Management Systems"-Vikas- 2008.

SEMESTER VI				
Core – X– Android Programming				
Code: 18UCSC61	Hrs / week :5	Hrs / Semester: 75	Credits :4	

To create android apps

Mission:

To create apps using various layouts and views

Course Outcomes:

СО	Upon completion of this course, students will be	PSO	CI
No.	able to	Mapped	CL
CO-1	Distinguish different mobile techniques	2	Re
CO-2	Install Android SDK	5	Ap
CO-3	Design User Interface	5	Cr
CO-4	Modify app to include multimedia content	10	An
CO-5	Create app to access SD card	10	Cr
CO-6	Create app with Google Maps	10	Cr
CO-7	Design app with SQLite database	10	Cr
CO-8	Deploy Mobile app	10	Ap

Unit I:

Overview

A little background about mobile technologies, Different mobile technologies – Android, Windows, IOS, Black Berry, series 40, Bada, Benefits and drawbacks of Smartphone programming, Overview of Android, How it all got started, Why Android different and important, Android Stack overview, Linux kernel, native libraries, App framework, Apps, SDK overview, platforms, tools, versions. Creating and setting up custom Android emulator.

Unit II:

Get Started with Android

Install the android SDK, Install base tools, install SDKs and Add-ons, Install apache Ant, Emulator, and Device. Get know Eclipse, Build, install and Run the Application in your Emulator or Device, Project Structure.

Designing User interface

Designing by declaration, creating the opening screen, using alternate resources, implementing an about box, applying a theme, adding a menu, adding settings, debugging with log messages, debugging with debugger.

Unit III:

Exploring 2D graphics and Multimedia

Learning the basics, adding Graphics to existing apps, handling input, learn to change the final improvements, Playing audio, Playing Video, Adding sound to existing app,

Storing local Data

Reading/writing local data, Accessing the Internal File system, Accessing SD card.

UnitV:

Location and Sensing

SMS Messaging, Displaying MAPS Location Data, Monitoring and Tracking a Location,

Putting SQL to work Introducing SQLite, In and Out of SQLite, Hello Database, Data Binding, using content provider, implementing content provider.

Preparing and Publishing

Preparing app for publishing, Deploying APK files, uploading in Market.

Unit V

Introduction to Windows Phone Programming

Windows 8 GUI development, windows 8 software Development tools, .Net 4.5 features Windows Phone platform overview, Multitasking windows, interacting from background, local data, working with sensors, tools – phone emulator, debugging and performance, what is new in windows phone 8, app-to-app communication.

More on Windows phone

Lock screen background, Lock screen badges, Tiles, tiles templates, Tiles update, Final touch before deploying and testing in emulators, Monetizing the App, in-app purchase.

Text Books:

1. Grant Allen, Beginning Android 4, Apress, 2012.

Wei-Meng Lee, Beginning android 4 application Development, John Wiley &sons, Inc, 2012.

3. Charles Petzol, Programming Windows, Microsoft Press,6thEdition, 2012.

Books for Reference:

1. Ed Burnette, Hello, Android: Introducing Google's Mobile Development Platform, Pragmatic.2009.

- 2. Jerome (J.F) DiMarzio, Android A programmer's Guide, TataMcgraw Hill,2010.
- 3. Charles Petzold, Programming Windows Phone, Microsoft Press, 2010.

SEMESTER VI			
Core – XI– Software Engineering			
Code: 18UCSC62	Hrs / week :4	Hrs / Semester: 60	Credits :4

Be successful professionals in the field with solid fundamental knowledge of Software Engineering on creating more complex software systems.

Mission:

Prepare students with a thorough understanding of software engineering Techniques and important concepts such as software processes from software specification through system evolution with ethical values to solve real world problems.

Course Outcomes:

CONO	Upon completion of this course, students will be	PSO	CI
	able to	Mapped	CL
CO-1	Describe the concepts of Software Engineering.	1	Un
CO-2	Describe Software Life Cycle Model	1	Un
CO-3	Discuss Project Management	2	Ар
CO-4	Discuss software Requirement and specification	2	Ар
CO-5	Explain Software Design Process	3	Un
CO-6	Describe User Interface Designing	3	Un
CO-7	Explain software Testing and Software Reliability	3	Un
	and		
CO-8	Discuss Software Quality Management System	3	Un

Unit I:

Introduction:- Evolution – From an Art form on Engineering Discipline: Evolution of an Art into an Engineering Discipline. – Software Development of Projects: Program versus Product – Emergence of Software Engineering: Early Computer Programming – High Level Language Programming – Control Flow-based Design – Data Structure Oriented Design – Object Oriented Design.

Software Life Cycle Models:- A few Basic Concepts – Waterfall Model and its Extension: Classical Waterfall Model – Iterative Waterfall Model – Prototyping Model – Evolutionary Model. – Rapid Application Development (RAD): Working of RAD. –Spiral Model. (12L) **Unit II :**

Software Project Management:- Responsibilities of a Software Project Manager – Project Planning- Project Estimation Techniques-Risk Management. Requirements Analysis and Specification:- Requirements Gathering and Analysis – Software Requirements Specifications (SRS):Users of SRS Document – Characteristics of a Good SRS Document – Important Categories of Customer Requirements – Functional Requirements – How to Identify the Functional Requirements? – Organisation of the SRS Document. (12L)

Unit III:

Software Design:- Overview of the Design Process: Outcome of the Design Process – Classification of Design Activities. – How to Characterize a good Software Design? Function-Oriented Software Design:- Overview of SA/SD Methodology – Structured Analysis – Developing the DFD Model of a System: Context Diagram – Structured Design – Detailed Design. (12L)

Unit IV:

User Interface Design:- Characteristics of a good User Interface - Basic Concepts – Types of User Interfaces – Fundamentals of Components based GUI Development: Window System.
Coding and Testing:- Coding – Software Documentation – Testing: Basic Concepts and Terminologies – Testing Activities. – Unit Testing – Black-box Testing: Equivalence Class Partitioning – Boundary Value Analysis. – White-box Testing. (12L)

UnitV:

Software Reliability and Quality Management:- Software Reliability: Hardware versus Software Reliability. – Software Quality – Software Quality Management System – ISO 9000: What is ISO 9000 Certification? – ISO 9000 for Software Industry – Shortcomings of ISO 9000 Certification. – SEI Capability Maturity Model: Level 1 to Level 5. Software Maintenance:- Characteristics of Software Maintenance: Characteristics of Software Evolution – Software Reverse Engineering. (12L)

Text Book:

1. RajibMall,Fundamentals of Software Engineering Fourth Edition ,PHI Learning Private Limited 2015.

Books for Reference:

1. Ian Sommerville, Software Engineering 9th Edition, Pearson Education Asia.

2.R.S.Pressman, Software Engineering: A Practitioner's Approach (7th Edition), McGraw-Hill, 2009.

3. K L James , Software Engineering 2nd Edition , PHI.

SEMESTER VI				
Core – Practical VI – Android Programming Lab				
Code: 18UCSCR6	Hrs / week :5	Hrs / Semester: 75	Credits :3	

List of Practicals :

- 1. Hello world
- 2. Custom Designed Opening Screen (SPLASH)
- 3. Intent (BMI)
- 4. Time Picker
- 5. Image Animation
- 6. Text to Speech
- 7. Bottom Navigation
- 8. Menu in Application
- 9. Play a video based on the User Event
- 10. Arithmetic Operations
- 11. Create / Read / Write data with database (SQLite)

SEMESTER VI			
Core – Integral II– Cloud Computing			
Code: 18UCSI61	Hrs / week :4	Hrs / Semester: 60	Credits :4

Attain knowledge about how to design and build cloud environments to enhance performance and cost reduction

Mission:

Learn about various service models PaaS, SaaS, IaaS and data centres. To analyse cloud storage systems.

Course Outcomes:

СО	Upon completion of this course, students will be	PSO	CI
No.	able to	Mapped	CL
CO-1	Define cloud computing	1	Re
CO-2	Describe the characteristics of cloud	2	Un
CO-3	Identify the technical foundations of cloud system architecture	2	An
CO-4	Characterize the distinction between infrastructure , platform, software and service	7	An
CO-5	Illustrate the use of load balancing techniques	7	Ар
CO-6	Attempt to generate new ideas and innovations in cloud computing	7	Cr
CO-7	Compare and contrast the various web services	10	An
CO-8	Demonstrate the usage of mail services	10	An

Unit I:

Understanding cloud computing

Cloud computing - cloud types- the cloud cube model- deployment models-service modelscharacteristics of cloud computing-assessing the role of open standards.

Assessing the value proposition

Measuring the cloud's value – the laws of cloudonomics –cloud computing obstacles – measuring cloud cost – avoiding capital expenditures

Unit II:

Cloud Architecture

The cloud computing stack – composability – infrastructure – platforms – virtual appliances – communication protocols – Connecting to the cloud: The Jolicloud net book OS – Chromium OS the browser as an operating system.

Developing Cloud Services

Infrastructure as a service (IaaS) – IaaS workloads- Platform as a service (PaaS) – Software as a service (SaaS)– Identity as a service (IDaaS) – Compliance as a service(CaaS).

Unit III:

Virtualization and CloudApplications

Virtualization technologies - load balancing and virtualization - advanced load balancing

- the Google cloud

Cloud Security

Securing the cloud –security service boundary –security mapping- securing data –brokered cloud storage access-encryption-auditing and compliance

Unit IV:

Google Web Services

Google Analytics - Google translate- Google Toolkit - Google APIs

Amazon Web Services

working with Amazon Elastic compute cloud(EC2)- Amazon simple storage system(S3) – Amazon Elastic block store(EBS)- cloud front.

Microsoft Web Services

Windows azure platform – windows Azure App fabric.

Unit V:

Cloud Storage

Cloud storage definition – unmanaged cloud storage – managed cloud storage – creating cloud storage systems – backup types - cloud backup features

Webmail Services

Cloud mail services- Google Gmail- Mail2Web – Windows Live Hotmail- Yahoo Mail **Textbook:**

1.Barrie Sosinsky, Cloud Computing Bible, Wiley India Pvt. Ltd, 2012. New Delhi.

Books for Reference:

 Michael Miller, Cloud Computing: Web-Based Applications That Change the WayYou Work and Collaborate Online, Que Publishing, Second Edition, August 2008.
 Aley Beard, Cloud Computing Best Practices for Managing and MeasuringProcesses for On-demand Computing, Applications and Data Centers in the Cloud with SLAs, EmereoPvt. Limited, July 2008.