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AISECT UNIVERSITY™

JHARKHAND, HAZARIBAG AN AISECT GROUP UNIVERSITY

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SCHEME OF EXAMINATION AND DETAILED SYLLABUS

Faculty of CS & IT

Bachelor of Computer Application (BCA)

(Duration- 3 Years)

(For 2019 Batch)

Contact us:

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BATCHLOR OF COMPUTER APPLICATION

Duration: 36Months (3 Years) Eligibility: 12th Pass

COURSE STRUCTURE OF BCA SEMESTER I													
Course Details				**External Assessment**		**Internal Assessment**				**Credit Distribution**			**Allotted Credits**
Course Code	**Course Type**	**Course Title**	**Total Marks**	**Major**		**Minor**		**Sessional**		**L**	**T**	**P**	**Subject wise Distribution**
				Max Marks	**Min Marks**	**Max Marks**	**Min Marks**	**Max Marks**	**Min Marks**				
Theory Group													
3MBFE101	**Ability Enhancement**	Fundamental of Entrepreneurship	50	25	8	10	4	15	6	2	-	-	2
3IBCA101	**Core Course**	Fundamentals of Computers & Information Technology	100	50	17	20	8	30	12	4	-	-	4
3IBCA102	**Core Course**	Windows & MS Office(word, power point, Excel, Outlook Express)	100	50	17	20	8	30	12	4	-	-	4
3IBCA103	**Core Course**	Programming in C	100	50	17	20	8	30	12	4	-	-	4
3IBDM101	**Core Course**	Discrete Mathematics	100	50	17	20	8	30	12	4	-	-	4
Practical Group				**Term End Practical Exam**				**Sessional**					
3IBCA102	**Practical**	Windows & MS Office(word, power point, Excel, Outlook Express)	50	25	08	-	-	25	10	-	-	2	**2**
3IBCA103	**Practical**	Programming in C	50	25	08	-	-	25	10	-	-	2	**2**
Grand Total			**550**	**-**		**-**		**-**	**-**	**-**	**-**	**-**	**22**

Minimum Passing Marks are equivalent to Grade D

L- Lectures T- Tutorials P- Practical

Major- Term End Theory Exam/ Practical Exam

Minor- Pre University Test

Sessional weightage – Attendance 50%, Three Class Tests/Assignments 50%

BATCHLOR OF COMPUTER APPLICATION

Duration: 36 Months (3 Years) Eligibility: 12th Pass

COURSE STRUCTURE OF BCA SEMESTER II														
Course Details				**External Assessment**		**Internal Assessment**				**Credit Distribution**			**Allotted Credits**
Course Code	**Course Type**	**Course Title**	**Total Marks**	**Major**		**Minor**		**Sessional**		**L**	**T**	**P**	**Subject wise Distribution**
				Max Marks	**Min Marks**	**Max Marks**	**Min Marks**	**Max Marks**	**Min Marks**				
Theory Group													
3HBHL101	**Ability Enhancement**	हिन्दी भाषा और संरचना	50	25	8	10	4	15	6	2	-	-	2
3IBEC 201	**Core Course**	Digital Computer Organization	100	50	17	20	8	30	12	4	-	-	4
3IBCA201	**Core Course**	Object Oriented Programming with C++	100	50	17	20	8	30	12	4	-	-	4
3IBCA202	**Core Course**	Operating Systems	100	50	17	20	8	30	12	4	-	-	4
3IBCA203	**Core Course**	Internet programming (HTML, DHTML & JavaScript)	100	50	17	20	8	30	12	4	-	-	4
Practical Group				**Term End Practical Exam**				**Sessional**					
3IBCA201	**Practical**	Object Oriented Programming with C++	50	25	08	-	-	25	10	-	-	2	**2**
3IBCA203	**Practical**	Internet programming (HTML, DHTML & JavaScript)	50	25	08	-	-	25	10	-	-	2	**2**
Skill Courses								**Sessional**					
3SCIT 201	**Skill Enhancement**	Skill Enhancement Elective Course I	50	-	-	-	-	50	20	1	-	1	**2**
Grand Total			**600**	-		-		-	-	-	-	-	**24**

Minimum Passing Marks are equivalent to Grade D **L- Lectures T- Tutorials P- Practical**

Major- Term End Theory Exam / Practical Exam

Minor- Pre University Test

Sessional weightage – Attendance 50%, Three Class Tests/Assignments 50%

Skill Elective I – Any other course being offered in this semester as per the list given at the end of course structure.

BATCHLOR OF COMPUTER APPLICATION

Duration: 36 Months (3 Years) Eligibility: 12th Pass

COURSE STRUCTURE OF BCA SEMESTER III														
Course Details				**External Assessment**		**Internal Assessment**				**Credit Distribution**			**Allotted Credits**
Course Code	**Course Type**	**Course Title**	**Total Marks**	**Major**		**Minor**		**Sessional**		**L**	**T**	**P**	**Subject wise Distribution**
				Max Marks	**Min Marks**	**Max Marks**	**Min Marks**	**Max Marks**	**Min Marks**				
Theory Group													
3HBEL401	**Ability Enhancement**	English Language and Scientific Temper	50	25	8	10	4	15	6	2	-	-	2
3IBCA301	**Core Course**	Data Base Management System (SQL/MS Access)	100	50	17	20	8	30	12	4	-	-	4
3IBCA302	**Core Course**	Data Structure	100	50	17	20	8	30	12	4	-	-	4
3IBCA303	**Core Course**	Computer Communication & Networks	100	50	17	20	8	30	12	4	-	-	4
3IBCA304	**Core Course**	Programming with JAVA	100	50	17	20	8	30	12	4	-	-	4
Practical Group				**Term End Practical Exam**				**Sessional**					
3IBCA301	**Practical**	Data Base Management System (SQL/MS Access)	50	25	08	-	-	25	10	-	-	2	**2**
3IBCA304	**Practical**	Programming with JAVA	50	25	08	-	-	25	10	-	-	2	**2**
Skill Courses								**Sessional**					
3SCIT 301	**Skill Enhancement**	Skill Enhancement Elective Course II	50	-	-	-	-	50	20	1	-	1	**2**
Grand Total			**600**	-		-		-	-	-	-	-	**24**

Minimum Passing Marks are equivalent to Grade D

L- Lectures T- Tutorials P- Practical

Major- Term End Theory Exam/ Practical Exam

Minor- Pre University Test

Sessional weightage – Attendance 50%, Three Class Tests/Assignments 50%

BATCHLOR OF COMPUTER APPLICATION

Duration: 36 Months (3 Years) Eligibility: 12th Pass

COURSE STRUCTURE OF BCA SEMESTER IV														
Course Details				**External Assessment**		**Internal Assessment**				**Credit Distribution**			**Allotted Credits**
Course Code	**Course Type**	**Course Title**	**Total Marks**	**Major**		**Minor**		**Sessional**		**L**	**T**	**P**	**Subject wise Distribution**
				Max Marks	**Min Marks**	**Max Marks**	**Min Marks**	**Max Marks**	**Min Marks**				
Theory Group													
3HBEL501	**Ability Enhancement**	Introduction to soft skill & Team Building	50	25	8	10	4	15	6	2	-	-	2
3IBCA401	**Core Course**	Linux Operating System —Operations & Management	100	50	17	20	8	30	12	4	-	-	4
3IBCA402	**Core Course**	RDBMS with Oracle	100	50	17	20	8	30	12	4	-	-	4
3IBCA403	**Core Course**	Programming with VB.NET	100	50	17	20	8	30	12	4	-	-	4
3IBCA404	**Core Course**	Network & Web Security	100	50	17	20	8	30	12	4	-	-	4
Practical Group				**Term End Practical Exam**				**Sessional**					
3IBCA401	**Practical**	Linux Operating System —Operations & Management	50	25	08	-	-	25	10	-	-	2	2
3IBCA403	**Practical**	Programming with VB .NET	50	25	08	-	-	25	10	-	-	2	2
Grand Total			**550**	-		-		-	-	-	-	-	**22**

Minimum Passing Marks are equivalent to Grade D

L- Lectures T- Tutorials P- Practical

Major- Term End Theory Exam/ Practical Exam

Minor- Pre University Test

Sessional weightage – Attendance 50%, Three Class Tests/Assignments 50%

BATCHLOR OF COMPUTER APPLICATION

Duration: 36 Months (3 Years) Eligibility: 12th Pass

COURSE STRUCTURE OF BCA SEMESTER V														
Course Details				**External Assessment**		**Internal Assessment**				**Credit Distribution**			**Allotted Credits**
Course Code	**Course Type**	**Course Title**	**Total Marks**	**Major**		**Minor**		**Sessional**		**L**	**T**	**P**	**Subject wise Distribution**
				Max Marks	**Min Marks**	**Max Marks**	**Min Marks**	**Max Marks**	**Min Marks**				
Theory Group													
3HBHP401	**Ability Enhancement**	Human Values & Ethics	50	25	8	10	4	15	6	2	-	-	2
3IBCA501	**Core Course**	Professional Elective I	100	50	17	20	8	30	12	4	-	-	4
3IBCA502	**Core Course**	Professional Elective II	100	50	17	20	8	30	12	4	-	-	4
3IBCA503	**Core Course**	Data Warehousing & Mining	100	50	17	20	8	30	12	4	-	-	4
3IBCA504	**Core Course**	Multimedia Systems	100	50	17	20	8	30	12	4	-	-	4
Practical Group				**Term End Practical Exam**				**Sessional**					
3IBCA501	**Practical**	Professional Elective I	50	25	08	-	-	25	10	-	-	2	2
3IBCA504	**Practical**	Multimedia Systems	50	25	08	-	-	25	10	-	-	2	2
Skill Courses								**Sessional**					
3SCIT 501	**Skill Enhancement**	Skill Enhancement Elective Course III	50	-	-	-	-	50	20	1	-	1	2
Grand Total			**600**	**-**		**-**		**-**	**-**	**-**	**-**	**-**	**24**

Minimum Passing Marks are equivalent to Grade D **L- Lectures T- Tutorials P- Practical**
Major- Term End Theory Exam/ Practical Exam
Minor- Pre University Test
Sessional weightage – Attendance 50%, Three Class Tests/Assignments 50%
Skill Elective III – Any other course being offered in this semester as per the list given at the end of course structure.

Professional Elective I –

a) 3IBCA501A Web Programming with ASP.NET Using C#
b) 3IBCA501 B Computer Graphics

Professional Elective II-

a) 3IBCA502A Management Information System
b) 3IBCA502B Compiler Design

BATCHLOR OF COMPUTER APPLICATION

Duration: 36 Months (3 Years) Eligibility: 12th Pass

COURSE STRUCTURE OF BCA SEMESTER VI														
Course Details				**External Assessment**		**Internal Assessment**				**Credit Distribution**			**Allotted Credits**
Course Code	**Course Type**	**Course Title**	**Total Marks**	**Major**		**Minor**		**Sessional**		**L**	**T**	**P**	**Subject wise Distribution**
				Max Marks	**Min Marks**	**Max Marks**	**Min Marks**	**Max Marks**	**Min Marks**				
Theory Group													
3IBCA601	**Core Course**	PHP, MySql	100	50	17	20	8	30	12	4	-	-	4
3IBCA602	**Core Course**	Information Technology Trends	100	50	17	20	8	30	12	4	-	-	4
3IBCA603	**Core Course**	Embedded Systems	100	50	17	20	8	30	12	4	-	-	4
3IBCA604	**Core Course**	Software Engineering	100	50	17	20	8	30	12	4	-	-	4
Practical Group				**Term End Practical Exam**				**Sessional**					
3IBCA601	**Practical**	PHP, MYSQL	50	25	08	-	-	25	10	-	-	2	2
3IBCA605	**Practical**	Project Development & Implementation	100	50	17	-	-	50	20	-	-	4	4
Grand Total			**550**	-		-		-	-	-	-	-	**22**

Minimum Passing Marks are equivalent to Grade D **L- Lectures T- Tutorials P- Practical**
Major- Term End Theory Exam / Practical Exam
Minor- Pre University Test
Sessional weightage – Attendance 50%, Three Class Tests/Assignments 50%
Compulosory Project/Dessertation with choice in any Disciplinery specific elective. Compulsory one paper presentation certificate in related dicipline.

SKILL ENHANCEMENT ELECTIVE COURSES

Non-Technical			
Elective No.	**Department/ Faculty Name**		
	Faculty of Information Technology		
I	SCIT 201	Data Entry Operation	2(1+0+1)
II	SCIT 301	Multimedia	2(1+0+1)
III	SCIT 501	Web Designing with HTML	2(1+0+1)
IV	SCMIT 201	Web Development	2(1+0+1)
V	SCMIT 301	LINUX	2(1+0+1)
	Faculty of Management		
I	SMGT 201	Briefing and Presentation Skills	2(1+0+1)
II	SMGT 301	Resolving Conflicts and Negotiation Skills	2(1+0+1)
III	SMGT 802	Entrepreneurship Development	2(1+0+1)
	Faculty of Commerce		
I	SCOM 201	Tally ERP 9	2(1+0+1)
II	SCOM 302	Multimedia	2(1+0+1)
III	SCOM 803	Data Analyst	2(1+0+1)
	Faculty of Humanities		
I	SHBA 301	Pursuing Happiness	2(1+0+1)
II	SHBA302	Communication Skill and Personality Development	2(1+0+1)
III	SHMA301	Tourism in M.P	2(1+0+1)
	Faculty of Science		
I	SSBI 301	Mushroom Cultivation	2(1+0+1)
II	SSPH 301	House Hold Wiring	2(1+0+1)
III	SSPH 301	Basic Instrumentation	2(1+0+1)
IV	SSPH 301	DTP Operator	2(1+0+1)
V	SSCH 301	Graphic Designing	2(1+0+1)
	Faculty of Education		
I	SCBE 403	Understanding of ICTC (Information Communication Technology)	2(1+0+1)
II	SCPE 201	Yoga Education	2(1+0+1)

Program Objective

The OBJECTIVE of the program is to develop skilled manpower in the various areas of information technology like:

1. Software Development: Computer Languages like C, C++, Java, Visual Basic, Dot Net etc.

2. Software Engineering: Project planning, verification and validation, software certification

like CMM, ISO-9000 Series, Quality assurance.

3. Multimedia Systems

4. Web based applications.

5. Theoretical Computer Science

6. Database Management System & Data Wire Housing and Mining

7. Data communication and Computer Networks

Program Outcomes

1. Develop competence in basic technical subjects in computer applications like Programming Languages, Data Structures, Databases, Operating Systems, Software Engineering.
2. Identify, analyze, formulate and develop computer applications.
3. Map real life scenarios to various theoretical optimal solutions.
4. Provide simplest automated solutions to various legacy systems.
5. Use modern computing tools and techniques with confidence.
6. Work professionally with positive attitude as an individual or in multidisciplinary teams and communicate effectively.
7. Appreciate the importance of goal setting and to recognize the need for life-long learning.
8. To produce employable IT workforce, that will have sound knowledge of IT and business fundamentals that can be applied to develop and customize solutions for Small and Medium Enterprises (SME)
9. To develop skilled manpower in the various areas of information technology like: Data base management, Software Development, Computer-Languages, Software engineering, Web based applications etc.

Program Specific Outcomes

Upon completion of program in Bachelor of Computer application, students will be able:

- Able to implement computer skill in the areas related to multimedia and website design, Data base, Hardware and networking.
- Able to demonstrate basic knowledge in the areas such as, Software Engineering, Data communication and Networking, Data base management, Web Technology and Operating Systems for building IT applications.
- Students will able to understand, analyze and develop computer programs in the areas related to algorithm, system software, web design and networking for efficient design of computer based system.
- Apply standard software engineering practices and strategies in software project development using open source programming environment to deliver a quality of product for business success.
- Student will able to know various issues, latest trends in technology development and thereby innovate new ideas and solutions to existing problems.

COURSE CODE: 3MBFE101

FUNDAMENTALS OF ENTREPRENEURSHIP

Course Code: 3MBFE101

COURSE OBJECTIVE:

Understanding basic concepts of entrepreneurship and key steps in the elaboration of business ideas, Developing personal creativity and entrepreneurial initiative.

Syllabus:

UNIT - I

Entrepreneurship-Definition, Characteristics and importance, Types and functions of an entrepreneur, merits of a good entrepreneur motivational factors of entrepreneurship.

UNIT - II

Motivation to achieve targets and establishment of ideas. Setting targets and facing challenges. Resolving problems and creativity. Sequenced planning and guiding capacity, Development of self confidence. Communication skills, Capacity to influence, leadership.

UNIT - III

Project Report- Evaluation of selected process. Detailed project report - Preparation of main part of project report pointing out necessary and viability.

Selecting the form of Organization: Meaning and characteristics of sole Proprietorship, Partnership and cooperative committees, elements affecting selection of a form of an organization.

Economic management -Role of banks and financial institutions banking, financial plans, working capital-evaluation and management, Cost and Price determination, Calculation of Profits, keeping of accounts.

UNIT - IV

Production management - Methods of purchase. Management of movable assets/goods. Quality management. Employee management. Packing.

Marketing management Sales and the art of selling. Understanding the market and market policy. Consumer management. Time management.

COURSE CODE: 3MBFE101

UNIT - V

Role of regulatory institutions - district industry centre, pollution control board, food and drug administration, special study of electricity development and municipal corporation.

Role of development organizations, khadi & village Commission/ Board, State Finance Corporation, scheduled banks, MP Women's Economics Development Corporation.

Self-employment-oriented schemes, Prime Minister's Employment schemes, Golden Jubilee Urban environment scheme, Rani Durgavati Self-Employment scheme, Pt. Deendayal Self- employment scheme.

Various grant schemes - Cost-of-Capital grant, interest grant, exemption from entry tax, project report, reimbursement grant, etc.

Special incentives for women entrepreneurs, prospects 8s possibilities.

Schemes of Tribal Finance Development Corporation, schemes of Antyavasai Corporation, schemes of Backward Class and Minorities Finance Development Corporation.

Course Outcome-

Understanding basic concepts in the area of entrepreneurship, understanding the stages of the entrepreneurial process, adopting of the key steps in the elaboration of business ideas, Developing personal creativity and entrepreneurial initiative.

Text Books:

1. Udhyamita Vikas : U.C Gupta (Kailash Prakashan)
2. Udhmita Vikas (H) : Entrepreneruship Development / by Tribhuvannath Shukl Bhopal : Madhya Pradesh Hindi Granth Academy,
3. Varshney, G.K. (2010).Fundamental Of Entrepreneurship, SahityaBhawan Publications
4. Agrawal and Mishra (2017) Fundamental Of Entrepreneurship, SahityaBhawan Publications.
5. Fundamentals of Entrepreneurship by G.K. Varshney Agra
   Sahitya Bhawan
6. Fundamentals of Entrepreneurship (H) by Avnish Kumar Mishra Agra
   Sahitya Bhawan
7. Fundamentals of Entrepreneurship by H. Nandan New Delhi
   PHI Learning
8. Fundamentals of Entrepreneurship and Small Business Management by Vasant Desai Mumbai
   Himalaya Publishing House
9. Fundamentas of Entrepreneurship : Principles, Policies and Programmes by K.K. Patra Mumbai
   Himalaya Publishing House

10. Fundamentals of Entrepreneruship by Sangram Keshari Mohanty New Delhi PHI Learning

Reference Books:

1. Entrepreneurial Development : Dr. S.S. Khanka (S. Chand)
2. Entrepreneurship Dvenelopment : D. Acharya (Himalya Publication House)
3. Entrepreneurship : New Venture Creation by David H. Holt New Delhi PHI Learning

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Chairperson
(Board of Studies)

Dean
(Academic Council)

(Registrar)
Seal

CORSE CODE: 3IBCA 101

FUNDAMENTALS OF COMPUTERS & INFORMATION TECHNOLOGY

Corse Code: 3IBCA 101

COURSE OBJECTIVE:-

1. To understand the basic knowledge of computer
2. To understand the assembly-level programming
3. To understand the input output devices, storage media, memory .
4. To understand the concept of MIS, Networking devices.

Syllabus:

UNIT- I

Know the Computer -Introduction, What does computer stands for? Strengths of computers, Limitations of computers, Fundamental uses of computers, Development of computers, Types of Computers, Generations of Computers

Personal Computer - Introduction, Personal computer, Uses of personal computers, Components of personal computers, Evolution of PCs, Developments of processors, Architecture of Pentium IV, Configuration of PC

Number System - Introduction, Digital and Analog Operations, Binary Data, Binary Number System, Decimal Number System, Octal Number System, Hexadecimal Number System, Fractional Conversion, Coding System

Data Representation and Binary Arithmetic - Introduction, Bits, Nibbles, Bytes and Words, Data Representation, Coding system, Binary Arithmetic, Binary Addition, Binary Subtraction, Binary Multiplication, Binary Division, Character Representation, Checking the Result of Binary Arithmetic.

UNIT- II

Input Devices - Introduction, Input Device, Typing Input Devices, Pointing Input Devices, Scanning Input Devices, Audio Visual Input Devices

Output Devices - Introduction, Output Devices, Soft Copy Vs Hard Copy Output, Monitor, Printers, Plotter, Electrostatic Technique, Special Purpose Output Equipments

Central Processing Unit - Introduction, What is Central Processing Unit, Arithmetic and Logic Unit, Control Unit, Registers, Instruction set, Processor Speed

Storage Devices - Introduction, Storage and its needs, Brain Vs Memory, Storage Evaluation Units, Data Access Methods, Primary Storage, Secondary Storage, Hard Disk Operations, Floppy Disk Drives, Winchester Disk, Optical Disk, VCD, CD-R, CD-RW, DVD, Zip Drive, Flash Drives, Blue Ray Disk, Memory Card, Driving Naming Conventions In a PC

Basics of Software- Introduction, What Does Software Stand For? Needs of software, Types of software, Open Source Software, Integrated Development Environment

Operating System - Introduction, Operating System, Why an Operating System, Functions of Operating System, The Booting Process, Types of Reboot, Booting From Different Operating System, Types of Operating System, Some Prominent Operating Systems

Disk Operating System - Introduction, What is DOS?, Functions of DOS, Versions of DOS, DOS Commands , Important Internal Commands of DOS, Important External Commands of dos, Executable Vs Non-Executable Files In Dos.

CORSE CODE: 3IBCA 101

UNIT- III

Programming Languages , Introduction, Data, information And Knowledge, Characteristics of Information, Comparison between human language and , Computer Language, What is a program?, What is a Programming language?, Programming development cycle, Algorithm, Program Flowcharts, Pseudo code, Programming approaches, Programming Paradigms, Types of Programming Language, Third Generation Language, Fourth Generation Language

Computer Virus - Introduction, Virus, History, Mechanism of virus, How A Virus Spreads , How is virus named, A few Prominent Viruses, Types of Computer Virus, Related Concepts :, Anti Virus Programs, Norton Anti - Virus (NAV), Execution of Norton Anti-Virus

Communication and IT - Introduction, Computer Network, Communication Process, Communication Types, Transmission Media, Wireless Media, Communication Channels/Media, Modem, Characteristics of a Modem, Types of Modem.

UNIT- IV

Networks - Introduction, Internet Vs Intranet, Types of Network, Topology, Types of Connectivity, Network Devices

Internet - Introduction, What is Internet actually ?, Growth of Internet, Owner of the Internet, Internet Service Provider, Anatomy of Internet, ARPANET and Internet history of the World Wide Web, Services Available on Internet (Internet Tools), Basic internet terminologies, net etiquette, Application of internet.

UNIT- V

Applications of Computers and Information Technology - Introduction, Business And Computer, E-Mail, E-Commerce, Project management, Computers in Personnel Administration, Accounting, Computers in Cost and Budget Control, Marketing, Manufacturing, Materials management, Banking, Insurance And Stock broking, Purchasing, Computers in warehousing

Course Outcomes:-

After study this student will be able to know about terms and concepts of Fundamentals of Computers & Information Technology (hardware, software, networking, security, Internet/Web, and applications).

Text Books:

- Introduction to Computers and Information Technology Anurag Seetha (Ram Prasad & Sons, Bhopal.)
- Fundamentals of Information technology Alexis Leon & Mathews Leon (Vikas Publishing House, New Delhi.)
- Computer System Architectur MORRIS MANO (PHI Publication)
- Computer fundamental V .Rajaraman; (PHI Publication)
- Basics of Computer & Information Technology Naik Nitin K. , (Kamal Prakashan)

CORSE CODE: 3IBCA 101

Reference Books:

- Computers Today Galgotia Publications (Galgotia Publications.)
- DOS Quick reference Rajeev Mathur (Galgotia Publications)
- Computer Fundamentals (w/cd) : Concepts Systems & Applications Sinha , P.K (BPB Publications)

Chairperson
(Board of Studies)

Dean
(Academic Council)

(Registrar)
Seal

CORSE CODE: 3IBCA 102

WINDOWS & MS OFFICE (WORD, POWER POINT, EXCEL, OUTLOOK EXPRESS)

Corse Code: 3IBCA 102

Course Objective:-

1. To understand the basic knowledge of MS Windows.
2. To understand the Office Packages.
3. To understand the MS Excel.
4. To understand the MS PowerPoint & Outlook Express.

Syllabus:

Theory:

UNIT- I

Know the Windows 10 , Introduction, What is Windows 10 ?, Evolution of Windows Operating System, Features of Windows 10, What's New in Windows 10, Windows and Its Elements.
Accessories And Other Tools , Introduction, The Calculator , Using THE Calculator, The Character Map, Using Outlook Express, The Address Book, The Paint, The Notepad, The WordPad, The NetMeeting, The Internet Explorer, The Windows Media Player, The MS-DOS , The Control Panel , The Windows Picture and Fax Viewer, The HyperTerminal, The Windows Messenger, Using Windows Movie Maker. Managing Files and Folders, Introduction, Viewing files and folders, Arranging files and folders, Creating a new folder, Creating a file using short-cut.

UNIT- II

Customizing Your Computer , Introduction, customizing Your Desktop, Changing the Start menu style, Setting a screen saver, Reversing your mouse buttons, Changing the appearance of your mouse pointer, Adding a new font to your computer, Logging off from the computer, Adding or Removing Programs, Hiding and displaying quick launch bar. Introduction of Microsoft Office Suite
Office Task Panes, Introduction, The Task Pane, Displaying And Hiding a Task Pane, Types of Task pane, Additional Task Panes, Insert ClipArt Task Pane, Styles and Formatting Task Pane, Mail Merge Task Pane, Exercise.

UNIT- III

Word Processing and MS-Word , Introduction, Features of Word Processor, MS-WORD—a powerful word processor, Starting MS-Word, Chief Elements Of MS-Word Window, Displaying and Hiding the Toolbar, File operations in MS-WORD, Using Help Online, Customizing Office Assistant.
Text Formatting , Introduction, Typing the text, Selecting Text with a mouse, Deleting Text, Restoring the deleted text, Typing over the existing text, Undoing/Cancelling the last action, Redoing/Repeating the last action, Formatting font, Advanced text formatting, Customizing Spelling Check, Using the thesaurus.
Document Formatting, Introduction , Using page border, Bullets and numbering, Setting and removing tab stops, Making word count, Using Auto text, Using autocorrect, Headers and Footers, Setting up columns in the document, Removing columns from the document, Inserting page numbering, Formatting the page numbering, manual and automatic page breaks, Setting margins, Inserting date and time, Using Go to, Cursor movement with key-board.

Tables And Graphics, Introduction, creating tables, calculating numeric data in a table , Deleting columns and rows, Formatting a table, Aligning text in the table, Formatting text in the table, Applying borders and shadings, Add a border to a table, Automatically format a table , Using Drawing, Creating a Shape, Using Word Art, Using Auto shapes, Insert a clip from the Clip Organizer, Inserting a text box, What is Drawing Canvas?, Using auto shapes.
Mail Merge, Views, Template and Wizard , Introduction, Mail merge , Views, Overview of templates, Creating a document template, Create a Web page based on a template, Modify a document template, RULER, ZOOM, PROTECTING YOUR DOCUMENT, INSERTING A FILE INTO ANOTHER , overview of wizard , Inserting Hyperlinks to a Web Page or a Word Document , EXERCISE.

UNIT- IV

Spreadsheet and MS-Excel , Introduction , Starting MS-Excel , Spreadsheet and its Elements, Application Window , Document Window, Cell , Standard Toolbar, Formatting Toolbar, Workbook , Worksheet, Handling Files.
Worksheet Formatting , Introduction, Entering Text Data, Entering Formula , Editing the Cell Content, Formatting the Cell , Formatting Font, Setting Border Around Cell, Highlighting gridlines, Using Format Painter, Finding and Replacing the Text, Using Spelling and Grammar.
Function and Operator, Introduction, Entering Functions, Editing Functions, Using Mathematical Functions, Using Statistical Functions, Using Date & Time Functions, Changing the default date format, Text Function, Logical Functions, Financial Function, Operators, AutoSum, Function Wizard.

UNIT- V

Chart and Web Object , Introduction, Types of Charts, Creating a Quick Chart Sheet , Parts of a Chart, Types of Charts, Creating A Chart using wizard, Using Pivot Table , Object Linking and Embedding (OLE), Linking Cells, Linking Formula, Hyper Links, Previewing charts, printing charts, Exercise.
Presentation Package And MS-PowerPoint , Introduction, Chief Elements of Presentation, Starting PowerPoint, Creating A Presentation, Creating A Presentation with Auto Content Wizard, Create a presentation using a design template, Creating a blank presentation, PowerPoint window and its Elements, Using Help Online, Customizing Office Assistant .
Text Formatting in Slides , Introduction , Adding text to slides, Editing text on a slide, Using Format Painter, Setting Paragraph Indents, Line Spacing in a Paragraph, Setting and Removing Tab Stops , Checking Spelling of the text , Finding and replacing the text, Moving slides.
Table, Chart and other Drawing Objects, Introduction, Creating a table, Creating an embedded Word table, Adding Columns and Rows, Deleting Columns and Rows, Changing Table Borders, Using Auto shapes, Chart, Inserting a clip to your slide, Using Word Art, Inserting A Word Art, Working With Drawing Toolbar, Creating A Shape.
Slides, Views, Notes, Handouts , Introduction, PowerPoint Views, Notes Pages, Using Handouts, Inserting Header and Footer in the, Slide , Transition , Custom Show, Assigning Custom Animation , Adding a motion path, Animating a chart, Publish a presentation or HTML file , to the Web, Preview a presentation as a Web page, Showing Slides , Printing Slides .
Outlook Express , introduction, WHAT IS outlook express?, Features of Outlook Express, starting outlook express, Concepts of CC and BCC, Email address, Reading a received message , composing message, Replying And Forwarding Messages, attaching files, Creating signature in outlook express, Formatting message text, What is mime?, applying stationery, Inserting a hyperlink or HTML page into a message, Flagging an e-mail or news message, Importing messages from other e-mail programs, What are newsgroups?, Adding a newsgroup account, Switching between e-mail and news reading, Identities (Multiple Users on A Single Computer), Adding a new identity, Managing contacts

with outlook, creating addresses, Importing an address book from another program, Using keyboard shortcuts in Outlook Express.

COURSE OUTCOMES:-

After studying this student will be able to know about terms and concepts of Microsoft suite completely.(like MS-word, power-point-excel sheets, outlook express)

Practicals:

1. Introduction of Microsoft windows.
2. Creation of file and folder in MS Windows.
3. Introduction of MS Word.
4. Inserting Number, Bullets, Footer and Header.
5. Creating text, document and table in MS Word.
6. Write steps for mail merge.
7. Introduction of Microsoft excel.
8. Write steps to inserting formula in MS Excel.
9. Creating text, row and Column in MS Excel.
10. Introduction of Microsoft Power Point.
11. Write steps how to using graphics in power point.
12. Introduction and theory of Microsoft Outlook.

Text Books:

- MS-Office 2010 Mr. Kalpesh Patel (Computer World (2014))
- PC Software MS Office Naik Nitin K (Kamal Prakashan)

Reference Books:

- Introducing Windows 10 for IT Professionals Ed Bott (Microsoft Press)
- GO! with Microsoft Windows 10 Introductory Gaskin & Vargas (Publisher: Pearson)
- Microsoft Office 2010 a Complete Guide Blokdyk Gerardus (5starcooks)

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CORSE CODE: 3IBCA 103

PROGRAMMING IN C

Corse Code: 3IBCA 103

COURSE OBJECTIVE:-

1. To understand the basic knowledge of programming concepts.
2 To understand the C language & its concepts.

Syllabus:

Theory:

UNIT- I

Principles of Programming, Introduction to Programming, Program Concept, Characteristics of Programming, Stages in Program Development, Tips for Program Designing, Programming Aids, Algorithms, Notations, Design, Flowcharts, Symbols, Rules.
Programming Techniques and Logic, Introduction, Introduction to programming techniques, Top-down approach or technique, Bottom-up approach or technique, Unstructured technique of programming, Structured technique of programming, Modular technique of programming, Comparative study of programming techniques, Cohesion , Coupling, Debugging , Syntax Errors, Logical Errors, Data Entry Errors, Linker Errors, Runtime Errors, Program Testing

UNIT- II

Turbo C IDE, Turbo C IDE (Integrated Development Environment), Main Menu Bar, File Options, Edit option, Run option, Compile option, Project option, Options option, Debug option, Break/watch option, Edit Window, Message Window, Status bar, Editing, Compiling and Running a C Program, Features of C language, C language standards, Standardization , Successors of C language.
Introduction to 'C', Introduction, Structure of a C program, 'C' Tokens, Keywords, Identifiers, 'C' Constants, Variables in C, Data Types, Derived Data Types : , Operators, Precedence and Associativity of operators, Hierarchy of operators at a glance, Expression & its Evolution, Type conversion in expressions , (Implicit and Explicit type conversion)

UNIT- III

Decision Making and Branching, Introduction, Sequential statements, Unformatted I/O functions, Formatted input using scanf () function, Formatted output using print(), Branching statements, The if-else statement, The nested if-statement, The switch statement.
Looping Statements, Introduction, for-statement, while-statement, do-while statement, Difference between while-loop and do-while loop, Nested loops, Jumps in loops.

UNIT- IV

Arrays, Introduction, Single-dimensional arrays, Reading and writing single dimensional arrays, Examples of Complex Programs, Searching, Sorting, Two-dimensional arrays (Multi-dimensional arrays), Reading-writing two-dimensional arrays, Manipulation in two-dimensional arrays,
Strings, Concepts of string, Strings in C language, String variable, Initializing strings, String input/output functions, Arrays of strings, String handling functions, Memory formatting

CORSE CODE: 3IBCA 103

User Defined Functions, Introduction, Elements of user-defined functions, Categories of functions, Passing parameters to functions, Programming Examples, Arrays in functions, Nesting of Functions, Recursion, Command Line Arguments , Storage Classes

UNIT- V

Structure and Union, Introduction to structures, Structure and its definition, Structure declaration, Tagged Structure, Structure variables, Type-Defined Structure, Structure initialization, Accessing structures, Nested structures, Array of structures, Structures and functions, Sending individual members, Sending the whole structure, Passing structures through pointers, Uses of structures, Union and its definition

Debugging, Common Programming Errors, Program Testing and Debugging, Types of Errors, Debugging C program

Pointers, Introduction, Pointer concepts, Pointer variable, Accessing variables through pointers, Pointer declaration and Definition, Initializing a pointer variable, Pointers to Pointers, Compatibility, Pointer applications, Pointers and other operators, Memory allocation functions, Memory map of C program, Memory management functions

File Handling, Introduction to file handling, File system basics, Standard streams in C, File structure, FILE pointer, Opening and closing a file, File handling functions, File types, Text and Binary, Input / Output operations on file, Reading a character using getc(), Writing a character using putc(), Using feof(), Working with string using fputs() and fgets(), Using fprintf() and fscanf(), Using fread() and fwrite(), Direct Access file, fseek().

COURSE OUTCOMES:-

- Illustrate the flowchart and design an algorithm for a given problem and to develop IC programs using operators
- Develop conditional and iterative statements to write C programs
- Exercise user defined functions to solve real time problems
- Exercise files concept to show input and output of files in C

Practicals:

1. Write a C Program to add two integer numbers.
2. Write a C Program to Check Whether a Number is Even or Odd.
3. Write a C Program to Check Whether a Number is Positive or Negative or Zero.
4. Write a C Program to Display Fibonacci Series.
5. Write a C Program to Reverse a Number.
6. Write a C Program to Check Whether a Number is Palindrome or Not.
7. Write a C Program to Make a Simple Calculator to Add, Subtract, Multiply or Divide Using switch...case.
8. Write a C Program to Calculate Factorial of a Number Using Recursion.
9. Write a C Program to Calculate Average Using Arrays.
10. Write a C Program to Add Two Matrix Using Multi-dimensional Arrays.
11. Write a C Program to Swap Numbers in Cyclic Order Using Call by Reference.

CORSE CODE: 3IBCA 103

Text Books:

- Thinking In C Mahapatra (PHI Publications)
- program design Peter Juliff (PHI Publications)

Reference Books:

- Programming In C E. Balaguruswamy (TMH Publications)
- Programming With C Gottfried, Schaums Outline Series (TMH Publications)
- Let Us C++ Kanetkar Yashavant P (BPB Publications)

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CORSE CODE: 3IBDM 101

DISCRETE MATHEMATICS

Corse Code: 3IBDM 101

COURSE OBJECTIVE:-

This course introduces the applications of discrete mathematics in the field of computer science.

1. It covers sets, logic, proving techniques, combinatory, functions, relations, Graph theory and algebraic structures.
2. These basic concepts of sets, logic functions and graph theory are applied to Boolean algebra and logic networks while the advanced concepts of functions and algebraic structures are applied to finite state machines and coding theory.

Syllabus:

Theory:

UNIT- I

SET THEORY - Set and Subsets, Operations on Sets, Countable and Uncountable Sets, the Principle of Inc Inclusion-Exclusion, Derangements, Propositions.

UNIT- II

PERMUTATION, COMBINATIONS, DISCRETE PROBABILITIES - The rules of sum and product, Permutations, Combinations, Binomial and Multinomial Theorems, Combinations with Repetitions, Probability, Random Variables & Probability Distributions, Repeated Trials

RELATION AND FUNCTION- Cartesian (Cross) Product of Sets, Relation, Operation on Relations, Properties of Relation as Binary Relation on a Set, Two Important Relations, Partial Ordered Relation, Lattices, Functions - Mappings, Types of Functions, Cardinality of Set, Composition of Relation and Function, Composition of Function, Existence of Inverse Function (Mapping), Set Image/Preset Image of Function.

UNIT- III

Graph - Directed Graphs, Graphs, Isomorphism, Subgraphs, Operations on Graphs, Walks and their classification, Connected and Disconnected Graphs, Euler circuits Euler trails, Planar and non-planar graphs.

Recurrence relations - First-order Recurrence Relations, Second-order Homogeneous Recurrence Relations, Third and higher-order Homogeneous Recurrence Relations, Non-homogenous Recurrence Relations of second and higher orders, Method of Generating Functions.

UNIT- IV

Groups - Introduction, Necessary and sufficient Condition for any subset of a group to be subgroup, Partition of a Group, Characteristics of Cosets of a Subgroups, Normal Subgroups, Necessary and sufficient condition for any subgroup of group to be normal subgroup, Characteristics of Normal (Sub groups), Quotient groups, Concept of Homomorphism.

Rings, Some special types of Rings, Elementary Properties of Rings, Subrings, Results of Sub-rings of a ring, Standard Properties of ideals, Homomorphism of Rings, Properties of Homomorphism.

CORSE CODE: 3IBDM 101

UNIT- V

Discrete Numeric Functions and Generating Functions -Discrete Numeric Functions, Manipulation of Numeric Functions, Asymptotic Behavior of Numeric Functions, Binomial Coefficients.

COURSE OUTCOME:-

After study this student will be able to know about some fundamental mathematical concepts and terminology, how to use and analyze recursive definitions, how to count some different types of discrete structures, techniques for constructing mathematical proofs, illustrated by discrete mathematics examples.

TEXT BOOKS:

- Discrete Mathematics Lipschutz S.,Lipson M. ,Schaums , (Tata Mc Graw Hill)
- Discrete Mathematics (SOS) Lipschutz , Seymour (Tata Mc Graw Hill Publishing)

REFERENCE BOOKS:

- Elements of Discrete Mathematics : A Computer Orientd Approach C L Liu & D P Mohapatra (New Delhi Tata Mc Graw Hill Publishing)
- Discrete Structure Agarwal D.C (Shree Sai Prakashan)
- Discrete Mathemactics and Its Application Rosen K.N (Tata Mc Graw Hill)

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3HBHL101

हिन्दी आधार/पाठ्यक्रम– हिन्दी भाषा और संरचना – 1

पाठ्यक्रम के उद्देश्यः

1. विद्यार्थियों में राष्ट्र प्रेम की भावना का विकास करना।
2. हिन्दी के समृद्ध साहित्य को नयी पीढ़ी तक पहुँचाना ।
3. पत्र–लेखन, सार लेखन, भाव पल्लवन एवं साक्षात्कार के कौशल का विकास करना।
4. डायरी,संस्मरण, लेखन, पारिभाषिक, शब्दावली, तत्सम, तद्भव, देशज, विदेशी शब्दों इत्यादि के ज्ञान का परिमार्जन करना।

पाठ्यक्रम

इकाई-1

भारत वंदना (काव्य)	सूर्यकांत त्रिपाठी निराला
जाग तुझको दूर जाना	सुश्री महादेवी वर्मा
स्वतंत्रता पुकारती (काव्य)	जयशंकर प्रसाद
हम अनिकेतन (काव्य)	बालकृष्ण शर्मा नवीन
भाषा की महत्ता और उसके विविध रूप	
भाषा-कौशल	

इकाई-2

करूणा (निबंध)	आचार्य रामचन्द्र शुक्ल
समन्वय की प्रक्रिया (निबंध)	रामधारी सिंह दिनकरश
बिच्छी बुआ (कहानी)	डॉ. लक्ष्मण विष्ट बटरोहीश
अनुवाद	परिभाषा प्रकारए महत्वए विशेषताएं
हिन्दी की शब्द-संपदा	
परिभाषिक शब्दावली	

इकाई-3

विलायत पहुंच ही गया (आत्मकथांश)	महात्मा गांधी
अफसर) व्यंग्य (	शरद जोशी
तीर्थयात्रा (कहानी)	डॉ. मिथिलेष कुमार मिश्र
मकड़ी का जाला (व्यंग्य)	डॉ. रामप्रकाश सक्सेना
वाक्य- संरचना :तत्समए तद्भव देशज विदेशी	

इकाई-4

अप्प दीपो भव (वक्तृत्व कला)	स्वामी श्रद्धानंद
भारत का सामाजिक व्यक्तित्व (प्रस्तावना)	जवाहरलाल नेहरू
पत्र मैसूर के महाराजा को (पत्र-लेखन)	स्वामी विवेकानंद
बनी रहेंगी किताबें (आलेख)	डॉ. सुनीता रानी घोष
पत्र-लेखनःमहत्व और उसके विविध रूप	
सड़क पर दौड़ते ईहा मृग (निबंध)	डॉ. श्यामसुन्दर दुबे

इकाई-5

योग की शक्ति (डायरी) डॉ. हरिवंश राय बच्चन

कोश के अखाड़े में कोई पहलवान नहीं उतरता(साक्षात्कार) – भाषाविद् डॉ. हरिदेव बाहरी से प्रो. त्रिभुवननाथ शुक्ल

नीग्रो सैनिक से भेंट (यात्रा-संस्मरण) डॉ. देवेन्द्र सत्यार्थी

यदि बा न होती तो शायद गांधी को यह ऊँचाई न मिलती (साक्षात्कार) कथाकार. गिरिराज किशोर से सत्येन्द्र शर्मा

सार -लेखनए भाव-पल्लवन साक्षात्कार और कौशल

अपेक्षित परिणामः

1. विद्यार्थी भारत भूमि से प्रेम व स्नेह के भावों को बढ़ा सकेगें।
2. विद्यार्थियों की हिन्दी की शब्द संपदा में वृद्धि होगी।
3. पत्र–लेखन ,सार लेखन, भाव पल्लवन साक्षात्कार के कौशल का विकास होगा।
4. डायरी एवं संस्मरण लेखन विद्या का परिमार्जन होगा।
5. हिन्दी के समृद्ध साहित्य कोश से लाभान्वित होगें।

Text Books:

Reference Books:

COURSECODE: 3IBEC 201

DIGITAL COMPUTER ORGANIZATION

Corse Code: 3IBEC 201

COURSE OBJECTIVE:-

1. To study the basic organization and architecture of digital computers (CPU, memory, I/O, software).
2. Discussions will include digital logic and microprogramming.
3. Understanding and utilization of digital computers.

Syllabus:

Theory:

UNIT-I

Digital computer and digital system: - Binary number system: number base conversion. Compliments: one's, two's, 9's and 10's complements. Binary code: Gray BCD, ASCII, and error detection code. Logic Gates: - AND, OR, NOT, EX-OR, Universal gate. Logic Circuit. Boolean function: Rules and simplification, simplification of Boolean function using map method, don't care condition.

UNIT-II

Combinational Circuits: Adders, Subtractors, Multiplexer, Demultiplexer, Decoder, Encoder.
Sequential Circuit: Flip-Flop: RS, Clocked RS, JK, D flip-flop, and Master-slave flip-flop.
Register- Introduction, Shift register, serial Transfer & parlor Load.
Counters- Ripple Counter (Asynchronous), Synchronous Counters.

UNIT-III

8086 internal architecture, register organization of 8086, addressing modes, instruction set and assembler directives, data movement instructions.
Register Transfer, Bus and Memory transfer, Micro operation: Logic and Shift.
Instruction code: Instruction code, Direct and Indirect address. Interrupt and Interrupt cycle.
Machine Language: Assembly language, assembler. Subroutines.

UNIT-IV

Control processing unit: general register organization, stack organization, polish notation.
Instruction Format: Three Address instruction, Addressing modes. RISC and CISC, Pipeline and its types.

UNIT-V

Computer Arithmetic: Addition and Subtraction with H/W algorithm, Multiplication algorithm, Booth Multiplication. Mode of transfer: DMA, DMA controller.
Memory Organization: Memory Hierarchy- Main memory, Auxiliary, Associative, catch, and Virtual memory.

COURSE OUTCOMES:-

- An ability to perform computer arithmetic operations.
- An ability to understand control unit operations.
- An ability to design memory organization that uses banks for different word size operations.
- An ability to understand the concept of cache mapping techniques.
- An ability to understand the concept of I/O organization.
- An ability to conceptualize instruction level parallelism.

COURSECODE: 3IBEC 201

Text Books:

- Computer Architecture & Parallel Processing — Sigapur (TMH)
- Digital Electronics — W.HGothman (PHI)
- Modern digital electronics — R.P Jain (TMH)
- Digital fundamental — Floyd (UBS)
- Digital Computers (H) (Kamal Prakashan) — Tiwari Ashish

Reference Books:

- Digital Computer Electronics — MALVINO (TMH Publication)
- Computer System Architecture — MORRIS MANO (PHI Publication)
- Digital Computer Fundamentals — BARTEE (TMH Publication)

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CORSE CODE: 3IBCA 201

OBJECT ORIENTED PROGRAMMING WITH C++

Corse Code: 3IBCA 201

COURSE OBJECTIVE:-

Student will be able

1. To understand the basic knowledge of opps with C++ language.
2 To understand the Structure & classes concepts, data member.
3 To understand the Array, Pointers operations.
4 To understand the Function overloading & Operator Overloading.
5 To understand the Inheritance & C++I/O system.

Syllabus:

Theory:

UNIT- I

Overview of C++ - Overview of C++, Software crisis, Object oriented programming paradigm, Basic concepts of OOP, Advantages/Benefits of OOP, Usage/applications of OOP

C++ Environment, Program development environment, The language and the C++ language standards, Introduction to various C++ compilers, The C++ standard library, Prototype of main () function, i/o operator, manipulator, comments, data types

Creating and Compiling C++ Programs - TURBO C++ IDE, Creating, compiling and running a C++ program using idea and through command line, Elements of C++ Language, Structure of a C++ program, C++ tokens, Type conversion in expressions.

Decision Making and Branching - Introduction, Sequential statements, Mathematical Functions, Branching statements, looping Statements, Nested loops, Programming examples.

UNIT- II

Arrays and Functions- Arrays, The meaning of an array, Single-dimensional arrays, Two-dimensional arrays (Multi-dimensional arrays), User Defined Functions, Elements of user-defined functions, Return values and their types, Function calls, Categories of functions, Passing parameters to functions, Recursion, Command Line Arguments, Storage Class Specifiers.

Classes and Objects - Classes, Structures and classes, Unions and classes, Friend function, Friend classes, Inline function, Scope resolution operator, Static class members, Static data members, Static member functions, Passing object to functions, Returning objects, Object assignment

Array, Pointers, References and the Dynamic Allocation Operators - Array of objects, Pointer to object, Type checking in C++, The this pointer, Pointer to Derived Types, Pointer to class members, References, C++'s Dynamic Allocation Operators.

Constructors and Destructors - Introduction, Constructors, Default Constructor, Parameterized constructors, Copy Constructors, Multiple Constructors in a class, Constructors with default arguments, Default Arguments, Special Characteristics of Constructor functions, Destructors.

UNIT- III

Polymorphism – Introduction to polymorphism, Types of polymorphism, Function overloading, Overloading Constructor Function, Finding the address of an overloaded function, Operator

Overloading, Creating a Member Operator Function, Creating Prefix and Postfix forms of the increment (++) and decrement (– –) operators (Overloading Unary Operator), Overloading the Shorthand Operators (i.e. +=, == etc),

Operator Overloading Restriction (Rules), Operator Overloading using friend function, Overloading new and delete operator, Overloading some special operators, Overloading [ ]

(Subscripting) operator, Overloading() (Function Call) operator, Overloading Binary Arithmetic operators, Concatenating String, Overloading Comma (,) operator, Overloading the I/O operators.

UNIT- IV

Base class Access control, Inheritance & protected members, Protected base class inheritance, Inheriting multiple base classes, Constructors, destructors & Inheritance, When constructor & destructor function are executed, Passing parameters to base class constructors, Granting access, Virtual base classes.
Virtual function, Pure Virtual functions, early Vs. late binding.

UNIT- V

The C++ I/O System Basics - The C++ I/O System basics, C++ predefined streams, Formatting using the ios members, Clearing Format Flags, An Overloaded form of setf( ), Examining the Formatted Flags, Using width( ), Using precision( ), Using fill( ), Using Manipulators to format I/O, Creating your own Manipulators
Outcomes – After Study This Student Will Be Able To Know About And Concepts Of Oops with C++ Language, Classes. Student will be able to create Arrays its uses, Uses of function overloading, inheritance & C++I/O system.

Practicals:

1. WAP to add, subtract, multiply and divide two numbers using concepts of C++.
2. WAP to show swapping of two numbers using C++.
3. WAP to calculate volume of cube, cylinder, rectangular box using three times function overloading in C++.
4. WAP using virtual function.
5. WAP using copy constructor.
6. WAP to show multiple inheritances.
7. WAP to find mean value of two numbers using friend function.
8. WAP using inline function.
9. WAP to demonstrate the use of Local Object, Static Object & Global Object using C ++.
10. WAP in C++ to demonstrate the creation and the use of dynamic object.
11. Derive the two classes son and daughter and, demonstrate polymorphism in action.

Text Books:

- Object Oriented Programming With C++ R. Subburaj (Vikas Publishing House)
- Programming In C++ M Kumar (TMH Publications)

CORSE CODE: IBCA 201

Reference Books:

- C++ E. Balguruswamy (TMH Publication)
- Object Oriented Programming C++ R. Lafore (Galgotia Publishing)
- C++ The Complete Reference Herbert Schildt (TMH Publication)

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CORSE CODE: 3IBCA 202

OPERATING SYSTEMS

Corse Code: 3IBCA 202

COURSE OBJECTIVE:-

1. To develop the understanding of functioning of Operating System.
2 To understand the Process Concepts, process state & process control
3 To understand the Critical Section Problem
4 To understand the Contiguous Allocating, Paging
5 To understand the Disk Scheduling, Disk Management

Syllabus:

Theory:

UNIT- I

Operating Systems: Overview -Introduction of Operating System, Types of Operating System, System Components and it's services, System Calls, System Programs, Structure, Design and, Implementation, Operating System Generation.

UNIT- II

Process : Concept, Description and Control -Concept of process, Process state model, Process description - PCB, Process control, Threads, Threads in Linux

Process Scheduling - Types of Scheduler, Scheduling Criteria, Uniprocessor, Scheduling, Multiprocessor Scheduling, Algorithm Evaluation, Process Scheduling in Linux

Concurrency - Introduction to concurrency, Critical section problem, Mutual Exclusion solutions, S/w approach, H/w support, semaphore, monitor, Classical problem of synchronization.

UNIT- III

Deadlock - Deadlock Characterization, Deadlock Prevention, Deadlock Detection, Deadlock Avoidance, Combined Approach

Protection - Goal of Protection, Protection Domains, Access Matrix, Implementation of Access Matrix, Revocation of Access Rights, Language Based Protection

Security and Encryption - Security Problem, User Authentication, Program Threats, System Threats, Securing System and Facilities, Encryption & Decryption – Cryptography.

UNIT- IV

Memory Management -Memory Management Requirements, Address Space, Linking and Loading, Swapping, Partitioning, Paging, Segmentation.

Virtual Memory - Introduction to Virtual Memory, Demand Paging, Page Replacement, Thrashing, Demand Segmentation

Input Output Systems - Input - Output Devices, Hardware Support for I/o, I/O Communication Techniques, I/O Software Device Drivers, Performance Consideration.

CORSE CODE: 3IBCA 202

UNIT- V

Disk Structure - Introduction to Disks, Disk Scheduling, Disk Management, Disk Reliability, Swap Space Management, Stable Storage Implementation.

File Management - File Concepts, Directory structure, File Sharing, Protection, File system in Linux.

COURSE OUTCOMES:-

After study this student will be able to know about the functioning of Operating System. To make students able to learn different types of operating systems along with concept of file systems and CPU scheduling algorithms used in operating system. To provide students knowledge of memory management and deadlock handling algorithms. At the end of the course, students will be able to implement various algorithms required for management, scheduling, allocation and communication used in operating system.

Text Books:

- Operating System (H) Ashish Tiwari (Kamal Prakashan)
- Operating Systems Godbole A.S (Tata Mc Graw Hill Publishing)

Reference Books:

- Operating System Concepts Silberschatz & Galvin (Addison Wesley Publication)
- Operating System Concepts & Design Milan Milen Kovic, (TMH Publication)
- Operating system William Stalling (Pearson Edu)

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CORSE CODE: 3IBCA 203

INTERNET PROGRAMMING
(HTML, DHTML & JAVASCRIPT)
Corse Code: 3IBCA 203

COURSE OBJECTIVE:-

1. To understand the general concepts pertaining to the Internet and World Wide Web.
2. To have a good working knowledge of HTML, CSS and JavaScript and the principles of
   Website Design.
3. To know different Web Designing Tools, how web hosting and publishing done
4. To understand JavaScript, Electronic Commerce, Electronic Payment System and Electronic Security

Syllabus:

Theory:

UNIT- I

ABC OF INTERNET - Introduction, What is Internet Actually ?, Growth of Internet , Owner of Internet, Internet Service Provider, Anatomy of Internet, Arpanet and Internet history of the World Wide Web, Internet Tools, Basic Internet Terminologies, net etiquette, Applications.
INTERNET CONNECTIONS -Introduction, Internet Vs Intranet, Types of Connectivity, VSAT, Radio Frequency, Integrated Services Digital Network Connections, Digital Subscriber Line Connection, DSL (Digital Subscriber Line), Cable Modem Service, Wireless Connection of Internet, Enabling Internet Connection Sharing on a Network Connection, Configuring Internet options for Internet connection sharing, What is a Proxy Server?

UNIT- II

WORLD WIDE WEB - Introduction, Basic Features, Evolution of the WWW, Mechanism of the World Wide Web, WWW Browsers, URL (web address), Domain Name System (DNS), Search Engines, Searching The Web, Site Specific Search Tools.
ELECTRONIC MAIL -Introduction, What is an E-mail?, Concept of Email, How Does Email Work ?, Structure of an E-mail, Starting Outlook Express, Setting up a Mail Account, Web Based Emails, Creating Signature in Outlook Express, Creating Signature in Yahoo, E-mail Protocols, Mailing List
HYPER TEXT MARKUP LANGUAGE -Introduction, Concept of Hyper Text Markup Language, Versions of HTML, HTML Editors, Elements of HTML, Document Layout, Cascading Style Sheet, Advanced HTML, Setting Up A Form, Creating A Menu.

UNIT- III

WEB HOSTING AND PUBLISHING CONCEPTS, Introduction, What is the Need of a Website, Types of Websites, Components of Web Publishing, Web Hosting, Web Design And Development, Web Page Considerations, Testing Your Website, Publishing Tools, Uploading Web Pages Using Cute FTP), File Publishing Using Web Publishing Wizard, Web Casting.

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UNIT- IV

INTRODUCTION TO JAVASCRIPT , Introduction, What is JavaScript ?, Role of Scripting, JavaScript Versus Java, JavaScript versus VBScript, Javascript Versions, Error Handling in JavaScript Program,

Creating a Simple External JavaScript Program, Creating a simple HTML page, Adding an Alert box with External JavaScript.

ELEMENTS OF JAVASCRIPT , Introduction, Elements of JavaScript), Data Type Conversion in JavaScript, Using Special Characters in Strings, Escaping Characters, Unicode Support in JavaScript, Comments, Alert Boxes, Confirm Alert Box, Prompt Boxes.

VARIABLES & FUNCTIONS, Introduction, Variables in JavaScript, Declaring Variables, Using Variables, Variable Scope, Constants, Function, Working with Objects, Object Properties, Object Methods.

EXPRESSIONS AND OPERATORS IN JAVASCRIPT, Introduction, Expressions in JavaScript, Operators in JavaScript, Assignment Operators , Comparison Operators , Arithmetic Operators , Bitwise Operators , Logical Operators, Short-Circuit Evaluation, String Operators Special Operators, Operator Precedence .

UNIT- V

STATEMENTS IN JAVASCRIPT , Introduction, Statements, Block Statement, Conditional Statements, The if...else Statement, The switch Statement , Loop Statements , The for Statement , The do...while Statement , The while Statement , The infinite loop, The label Statement , The break Statement , The continue Statement .

EVENTS IN JAVASCRIPT , Introduction, JavaScript Events, Dealing with Objects & Properties, Creating New Objects, Using Object Initializers, Using a Constructor Function, Defining Methods, Using Object References, Main Built in Object Type, Array Object, Accessing Arrays, Modifying Values in Existing Arrays, Boolean Object, JavaScript Math Object.

USING FORMS IN JAVASCRIPT, Introduction, Creating the form, Getting a value from a form object, Setting a value in a form object, Reading other form object values, Using Hidden Text Boxes, Using Radio Buttons, Using Check Boxes, Using Text Areas, Using Selection Lists, Other events you can trigger within a form, Submitting the form to the server, Using on Submit, Using submit, Validating form data using JavaScript.

Writing datasets to XML, Reading datasets with XML. Acquaintance with creating style sheet, CSS properties and styling, Working with Background, Text and Font properties. DHTML Introduction, Static V/S Dynamic Websites.

COURSE OUTCOMES:-

After study this student will be able to know about programs based upon Html and html concepts, create animation & events based upon java script concepts, and connect an application with database.

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Practicals:

1. WAP which shows headings five time in ascending order. Align the heading also.
2. Write a program which show four paragraph under four headings.
3. Write a program for formatting the text &marked highlighted text.
4. Write a program for some text using CSS technique.
5. Write a program to insert an image in a page.
6. Write a program to make a table for any company employee's data record.
7. Write a program to make forms for different uses.
8. Write a java script to print the heading and paragraph & also create a button
9. Write a program to upload video on web page.
10. Write a program to change the back ground of any page.
11. Write a program to create a link between pages.

Text Books:

- Web Enabled Commercial Application Development Using : HTML, JavaScript, DHTML and PHP by Ivan Bayross (BPB Publication)
- Oracle Visual Basic HTML Naik Nitin K. Kamal Prakashan
- Internet & Web Design by A. Mansoor, Pragya Publications.
- Frontiers of Electronic Commerce, By- Kalakota, Ravi ; Stone, Tom ; Whinston, Andrew B, Addison Wesley Publishing Co , ISBN 8178080575
- E-Commerce An Indian Perspective (Second Edition) – by P.T. Joseph, S.J. Prentice-Hall of India
- Learn HTML in a weekend by Steven E. Callihan, PHI

Reference Books:

- Using HTML By Lee Anne Phillips, PHI
- SAMS Teach Yourself Javascript in 24 Hrs. By Phil Ballard, SAMS
- HTML & HTML The Complete Reference Powell T.A Tata Mc Graw Hill Publishing

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COURSE CODE: SMGT 802

ENTREPRENEURSHIP DEVELOPMENT

COURSE OBJECTIVE:-

The content will be multidisciplinary with the view to cover a whole range of issues pertaining to entrepreneurship and small scale industry.

Syllabus:

UNIT- I **Entrepreneur and Entrepreneurship –**Meaning, definition, significance, need, characteristics, qualities, pre- requisites function, types.

UNIT- II **Industries and Business Organization-** Classification of industries, forms of business organization, procedures, lifecycle, motivation, environment factors, problems

UNIT- III **Institutional Assistance-** Infrastructural, information, guidance, training, technical, financial, marketing, quality control

UNIT- IV **Planning and growth-** Project report, feasibility study, factory location, demand analysis, market potential, project cost, working capital requirement, profit and tax planning.

UNIT- V **Govt. support & promotional agencies-** Regulatory institutions, development organization, self- employment- oriented schemes, grant schemes, special incentives for women, and scheme for backward class, govt. & non govt. project

Practicals:

1. To identify a project and conduct market survey of it.
2. Prepare a project report of yours choice.
3. To collect various formats used in industries/departments or institutions working in the field of entrepreneurship.
4. To collect details of various schemes run by the government for self-employment and entrepreneurship.
5. Develop logical and analytical approach of purchasing the raw material/finished goods.
6. Collect information about market rates, quality and quantity of goods of your choice.
7. Collect information about few small-scale industries situated in city, nearby industrial area.
8. Discuss the problems of small-scale industries.
9. To prepare chart to show various factors affecting entrepreneurship.
10. To prepare case study of successful entrepreneurs.

COURSE OUTCOME: -

After completion of this course the students would be able to understand the relevance of entrepreneurship as a means of management practice in the context of a fast changing organizational structure in a global environment.

COURSE CODE: SMGT 802

Text Books:

- Udhyamita Vikas : U.C Gupta (Kailash Prakashan)
- Udhmita Vikas (H) : Entrepreneruship Development / by Tribhuvannath Shukl Bhopal : Madhya Pradesh Hindi Granth Academy,
- Varshney, G.K. (2010).Fundamental Of Entrepreneurship, SahityaBhawan Publications
- Agrawal and Mishra (2017) Fundamental Of Entrepreneurship, SahityaBhawan Publications.
- Fundamentals of Entrepreneurship by G.K. Varshney Agra Sahitya Bhawan
- Fundamentals of Entrepreneurship (H) by Avnish Kumar Mishra Agra Sahitya Bhawan
- Fundamentals of Entrepreneurship by H. Nandan New Delhi PHI Learning
- Fundamentals of Entrepreneurship and Small Business Management by Vasant Desai Mumbai Himalaya Publishing House
- Fundamentals of Entrepreneurship : Principles, Policies and Programmes by K.K. Patra Mumbai Himalaya Publishing House
- Fundamentals of Entrepreneurship by Sangram Keshari Mohanty New Delhi PHI Learning

Reference Books:

- Entrepreneurial Development: Dr. S.S. Khanka (S. Chand)
- Entrepreneurship Development: D. Acharya (Himalaya Publication House)
- Entrepreneurship: New Venture Creation by David H. Holt New Delhi PHI Learning

3HBEL401

ENGLISH FC II
ENGLISH LANGUAGE AND SCIENTIFIC TEMPER

COURSE OBJECTIVES:

- To Study the basic language skills (speaking, listening, reading, and writing) and grammar.
- Comprehensive study of different kinds of letters and applications.
- To study the different kinds of prose and poetry.

Syllabus:

UNIT – I

1. Tina Morries : Tree
2. Nissim Ezekiel : Night of the Scorpion
3. C.P. Snow : Ramanujan
4. Roger Rosenblatt : The Power of WE
5. George Orwell : What is Science?
6. C.Rajagopalachari : Three Questions
7. Desmond Morries : A short extract from the Naked Ape
8. A.G. Gardiner : On the rule of the road

UNIT – II Comprehension of an unseen passage.

UNIT – III Letter Writing : Formal Letters, Informal letters, Applications.

UNIT – IV Report Writing.

UNIT – V Language Skills

Correction of common errors in sentence structure : usage of pronouns, subject/ verb agreement word order, gender; compound nouns, collective nouns, possessives, articles and prepositions. (advanced)

COURSE OUTCOMES:

- Student will be able to understand correct use of grammar and language skills.
- Student will be familiar with different prose and poetry.
- Student should be able to write analytically in a variety of formats, including essays, report writing and application.

Text Books:

- A Practical English Grammar A.J. Thomson & A.V. Martinet (New Delhi Oxford University)
- Written Communication in English Sarah Freeman (New Delhi : Orient Blackswan)

Reference Books:

- Essential of English grammer and composition Rajendrsa Pal
- Fundamental of English grammer N.C Sinha
- A comprehensive of English grammer Rajkumar Sharma

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CORSE CODE: 3IBCA 301

DATA BASE MANAGEMENT SYSTEM (SQL/MS ACCESS)

Corse Code: 3IBCA 301

Course Objective:-

1. To understand the basic knowledge of DBMS Concepts.
2 To understand the Database Design.
3 To understand the RELATIONAL DATA MODEL.
4 To understand the RELATIONAL DATABASE DESIGN.
5 To understand the Indexing & Hashing-Basic Concepts & Recovery System.

Syllabus:

Theory:

UNIT- I

Introduction to DBMS, Operational Data, Introduction to database, Views of data, Three-Level Architecture proposal, Instances and Schemas, Purpose of database system, Advantages of DBMS, Disadvantages of DBMS, Structure of a DBMS, Data Models, Database Languages.

E-R Model, Entity-Relationship Model, Entity and Entity set, Attributes and Keys, Relationship and relationship set, Mapping constraints, Entity-Relationship diagram, Strong and Weak entities, Generalization, Specialization, Aggregation, Reducing ER diagram to tables.

UNIT- II

RDBMS Concept and Terminology, Set theory - concepts and fundamentals, Extension and Intention, Attributes and Domains, Relations, Tuple, Concepts of keys, Fundamental integrity rules.

Normalization, Functional dependencies, Universal Relation, Anomalies in a database, Decomposition, Normalization

Relational Algebra, Select Operation, Project Operation, Join Operation, Division Operation, Cross Product Operation, Set operations

Relational Calculus, Introduction, Tuple Relational Calculus, Operators used in TRC, Example queries using TRC, Domain Relational Calculus, Operators used in DRC, Example queries using DRC, Comparison of TRC, DRC, RA.

UNIT- III

Database Language, Structured Query Language (SQL), Integrity Constraints, Implementing SQL using MS Access, Functions, Indexing, View using MS Access

Database Administration, DBA - Role, Functionality and Importance, Failure classification, The storage hierarchy, RAID, Transaction model, File structure and Storage access, File organization, Organization of records in file, Data dictionary storage.

CORSE CODE: 3IBCA 301

UNIT- IV

Indexing and hashing, B-tree index file, Advanced DBMS, Database system Architectures, Centralized System, Client-Server System, Parallel Database System, Distributed Database System, Overview of Database on Web, Concepts of ODBC, DSN

UNIT- V

Database Storage and Querying, Basic Concepts of Indexing and Hashing, Query Processing, Measures of Query Cost, Basics of Query Optimization, Choice of evaluation plan, Structure of Relational Database.

Transaction Management, Introduction, Transaction Concepts, Features of Database Transaction, Concurrency Control in Database -, Lock Base, Time-stamp Base, Validation Base, Database Recovery System.

COURSE OUTCOMES:-

After study this student will be able to know about and concepts & fundamentals of DBMS, Concept of keys, RELATIONAL DATA MODEL & design. Student will also able to create table and implement commands.

Practicals:

1. Write a query to implement Different types of DDL statements in SQL.
2. Write a query to implement Different types of DML statements in SQL.
3. Write a query to implement Different types of DQL statements in SQL.
4. Write a query to implement Different types of DCL statements in SQL.
5. Write a query to explore 'select' clause using where, order by, between, like, group-by, having etc.
6. Write a query to implement the concept of Joins in SQL.
7. Write a query to implement the concept of Indexes and views.
8. Write a query to implement the restrictions on the table.
9. Write a query to implement the concept of SubQuestionries.
10. Write a query to implement the structure of the table.

Text Books:

- Database Management System (H) Laad Ameet (Kamal Prakashan)
- Introduction to Database Management Systems Kahate Atul (Pearson)
- an introduction to database system Bipin C.Desai (New Delhi Galgotia)

Reference Books:

- Database Management System Leon & Leon (Vikas Publications)
- Database System Concepts Henry F.Korth & Abraham Silberschatz. (New york. MC Graw)
- An Introduction To Database System C.J.Date (New Delhi Pearson)

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CORSE CODE: 3IBCA 302

DATA STRUCTURE
Corse Code: 3IBCA 302

COURSE OBJECTIVES:

Data structures play a central role in modern computer science. Data structures are essential building blocks in obtaining efficient algorithms.

1. The objective of the course is to teach students how to design, write, and analyze the performance of programs that handle structured data and perform more complex tasks, typical of larger software projects.
2. Students should acquire skills in using generic principles for data representation & manipulation with a view for efficiency, maintainability, and code reuse.
3. Another goal of the course is to teach advance data structures concepts, which allow one to store collections of data with fast updates and queries.

Syllabus:

Theory:

UNIT- I

Analysis of Algorithm-Introduction, Criteria of Algorithm, Time Complexity, Space Complexity, Asymptotic Notation: Big Oh (O) Notation: Big Omega (Ù) Notation: Big Theta (È) Notation.
Types of Data structures- Introduction, Types of Data structures, Linear Data Structures, Non Linear Data Structure, Array, SPARSE MATRICES, Garbage Collection, Benefits, Disadvantages.

UNIT- II

Stacks-Introduction, Push operation, Pop operation, Stack implementation using arrays, (static implementation of stacks), STACK as a Linked List, Stack as an abstract data structure, Applications of stack, Conversion of Expressions, Precedence and associativity of the operators, Evaluation of Postfix expression, Multiple stacks,
Recursion-Introduction, Working of recursion, Fibonacci series, Tower of Hanoi, Efficiency of recursion.
Queue-Introduction, Different types of queues, Queue (Linear queue), Queue as an abstract data structure, Circular queue, Double ended queue (Dequeue), Priority queue, QUEUE as a Linked List, Applications of Queue.
Linked Lists-Concept of list and array , Introduction to Data Structures, Arrays, Linked list, Singly or Linear linked list, Circular singly linked list, Doubly linked lists, Header Node, Applications of linked lists, Addition of two long positive numbers, Evaluation of a polynomial.

UNIT- III

Trees-Introduction, Representation of tree, Binary Tree , Representation of binary tree, Array representation of binary tree, Linked List representation of binary tree, Basic Operation on Binary Tree- Traversals, Binary Tree Traversal Algorithms (Recursive), Creation of Binary Search Tree:, Types of binary trees, Operations on Binary Search Tree (BST), Threaded binary trees, Application of Binary Tree:, B-Tree, Height Balanced Tree ,

Corse Code: 3IBCA 302

Graph- Introduction to Graphs, Undirected Graph, Directed Graph or digraph, Graph Representation, Adjacency Matrix Representation, Adjacency List Representation, Graph Traversals, Breadth First Traversal, Depth First Traversal , Searching in Graph, Minimal Spanning Tree, Kruskal's Algorithm, Prim's Algorithm , Shortest Path in Graph.

UNIT- IV

Sorting and Searching - Introduction, Bubble sort, Selection Sort, Merge Sort, Quick sort, Insertion Sort, Shell sort, Address calculation sort, Radix sort, Comparison of sorting methods, Hash Table, Collision Resolution Techniques, Linear Search (Sequential Search), Binary Search, Searching an ordered table, Indexed sequential search, Interpolation search.

UNIT- V

File Structure and Indexing- Introduction, Objectives, Terminology, File Organization, Sequential Files, Disadvantages, Direct File Organization, Indexed Sequential File Organization.

COURSE OUTCOME:-

After study this student will be able to know about the concepts of Data Structure Using C++ Language, List & Its Operations Concept of Tree, and Algorithm & Graphs Design. Students will also know about the sorting and searching.

Text Books:

- Data Structures Using C & C++ (H) Birthare Nagendra., Agarwal Sushil, (Kamal Prakashan)
- Data Structures and Program Design Kruse R.L (PHI Learning)
- Data Structures Lipschutz S., Schaums, (Tata Mc Graw Hill)
- Data Structures (SOS) Lipschutz , Seymour . (Tata Mc Graw Hill Publishing)

Reference Books:

- Fundamentals of Data Structures in C++ Ellis Horowitz & Sartaj Sahni & Dinesh Mehta (Hyderabad University)
- Data Structures and Algorithm Bhaumik A.K. Haldar S.,Roy S.S., (S. Chand Group)
- Data Structures and Algrithms in Java Lafore R (Pearson Education)

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CORSE CODE: 3IBCA 303

COMPUTER COMMUNICATION & NETWORKS

Corse Code: 3IBCA 303

COURSE OBJECTIVE:-

1. To understand the fundamental concepts of computer networking.
2. To understand the basic taxonomy and terminology of the computer networking area.
3. To understand the advanced networking concepts, preparing the student for entry Advanced courses in computer networking.
4. To understand the various transition method.

Syllabus:

Theory:

UNIT-I

Introduction To Networking, Introduction to Network, Network, Computer Networks, Need of Network , Uses of Computer Network, Applications of networks, Network Criteria, Network Hardware and Software, network types : client, server & peers, Various Types of Servers.

Transmission Technology, Transmission technology, Data can be analog or digital, Analog and Digital Transmission, Asynchronous & synchronous transmission, Types of Communication Modes, Baseband and Broadband Transmission, Comparison of Baseband and Broadband Signaling.

Transmission Media , Transmission Media, Classification of Transmission Media, Comparison of Guided and Unguided Media, Twisted Pair (TP) Cable, Coaxial Cable, Fiber Optic Cable (FOC), Unguided Media, Radio Frequency Characteristics, Microwave Transmission, Applications of Infrared Transmission.

UNIT-II

Network Topology, Network Topology, Types of Network, Local Area Network (LAN), Metropolitan Area Networks (MAN), Wide Area Networks (WAN), Satellite Networks, Wireless LAN.

Network Adapters, Network adapters, Network interface cards (NIC), Multiple Access Protocol, ALOHA, Carrier Sense Multiple Access (CSMA), CSMA/CD [Carrier Sense Multiple Access/Collision Detection], Collision Free Protocols , Limited Contention Protocol, Controlled Access , Channelisation, Code Division Multiple Access (CDMA).

The Theoretical Network Model - OSI, OSI Model, open system interconnection model (OSI) Layered Architecture of the OSI Reference Model, Functions of the ISO/OSI Layers, Summary of OSI Layer functions.

Real World Networks, real world network : Ethernet, Fast Ethernet , FDDI (Fiber Distributed Data Interface), Network Operation, ATM (Asynchronous Transfer Mode), ATM Service Categories, ARCNET , AppleTalk.

UNIT-III

IEEE 802 Standards , IEEE 802 standards, IEEE 802.3 (CSMA/CD) , IEEE 802.4 (Token Bus), IEEE 802.5 [Token Ring] , IEEE 802.5 cable standards, Comparison between IEEE 802.3,802.4 and 802.5, Compare Token Passing with CSMA/CD.

Connectivity Devices, Networking scaling, Connectivity Devices , Modems, Transceiver , Repeaters, Hubs, Bridges, Routers .

UNIT-IV

TCP/IP Reference Model, Overview of tcp/ip reference model, Introduction to TCP/IP :, TCP/IP Protocols, User Datagram Protocol, The Internet Control Message Protocol (ICMP), The Address resolution Protocol (ARP), Reverse Address Resolution Protocol (RARP), Simple Mail Transfer Protocol (SMTP), File Transfer Protocol, Dynamic Host Configuration Protocol (DHCP), Remote Login (rlogin), The Network File System (NFS).

IP Addressing & Subnet, Introduction to IP, Domain Name System (DNS), URL (Uniform Resource Locator), Electronic Mail, E-mail address, Subnet & Subnet masks.

Network Security, Network Security, The Need for Security, common threats, security barriers in network pathways, Attacks, Classification of Attacks, Specific Attacks.

UNIT-V

Approaches to Network Security, Levels of Security, Approaches to network security, Security Services.

Viruses & Security Threats, Virus & Threats, Malicious Programs, Types of Viruses, Virus Countermeasures, Antivirus Approach, Advanced Antivirus Techniques, Distributed Denial of Service Attacks, DDoS Attack Description.

Firewalls, Firewalls, Firewall Design Principles, Types of Firewalls, Firewall Configurations, Demilitarized Zone (DMZ) Networks, VLAN.

Encryption & Decryption, Encryption & Decryption - Cryptography, Terminology, Classification of Cryptography, Substitution Ciphers, Security of algorithms, Steganography, Steganography vs Cryptography, Public key encryption , Comparison of Symmetric and Asymmetric Key Cryptography , Public Key Cryptanalysis.

Digital Signature, Digital Signature , Requirements of Digital Signature, Direct Digital Signature, Arbitrated Digital Signature, Authentication Protocols, Symmetric Encryption Approach, Public-Key Encryption Approach, Digital Signature Standard, RSA and Digital Signature, DSS Approach, The Digital Signature Algorithm,

COURSE OUTCOMES:-

After study this student will be able to know about

1. Independently understand basic computer network technology.
2. Understand and explain Data Communications System and its components.
3. Identify the different types of network topologies and protocols.
4. Enumerate the layers of the OSI model and TCP/IP. Explain the function(s) of each layer.

Text Books:

- Networking Essentials: Study Guide MCSE Strebe Second Edition — James Chellis Charles Perkins, Matthew (BPB Publications)
- Local Area Networks — S.K.Basandra & S. Jaiswal, (Galgotia Publications)

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Reference Books:

- Computer Network Andrew & Tanenbaum, (New Delhi Pearson)
- Data and Computer Communication William Stallings (New Delhi Pearson)
- Data Communication Prakash C Gupta, (New Delhi PHI)

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CORSE CODE: 3IBCA 304

PROGRAMMING WITH JAVA

Corse Code: 3IBCA 304

COURSE OBJECTIVE:-

1. To introduce and understand students to programming concepts and techniques using the Java language and programming environment, class, objects , also learn about lifetime, scope and the initialization mechanism of variables and improve the ability general problem solving abilities in programming. Be able to use the Java SDK environment to create, debug and run simple Java program.

Syllabus:

Theory:

UNIT-I

OVERVIEW OF JAVA - Introduction, Programming paradigm, OOPS Concepts, Evolution of Java, Features of Java, C++ Vs Java, Java and Internet, Java and WWW, Java support systems, Java Environment.

Key Features of Java - Introduction, Java Program Structure, Simple Java Program, Tokens, Java Statements, Java Virtual Machine, Constants and Variables, Declaration of Variables, Scope of Variables, Data types, Symbolic Constants, Type Casting, Command line arguments.

UNIT-II

OPERATORS - Operators, Arithmetic Operators, Relational Operators, Logical Operators, Bitwise Operators, Increment and Decrement, Conditional Operators, Special Operators, Assignment Operators, Expression & its evaluation.

CONTROL STATEMENTS - Introduction, Control Statements, Sequence Control Statement, Decision Control Statement, Case Control Statement, Iteration Control Statement, Jump in loops, Labeled Loops.

ARRAYS AND STRINGS - Introduction, Array, Need of Array, Types of Array, One dimensional Array, Two-Dimensional Array, Multidimensional Array, Strings, Concatenation of Strings, Methods for String Comparison, Methods for searching Strings, Changing the case of characters, String Buffer.

UNIT-III

CLASSES - Introduction, Defining a Class, Adding Variables, Adding Methods, Creating Objects, Accessing Class members, Call by value and call by reference, Recursion, Access Control, Constructors, Method overloading, Constructor Overloading, Garbage Collection, finalize( ) method, this keyword, Static Members, Nesting of Methods

INHERITANCE - Inheritance, Single Inheritance, Multilevel Inheritance, Multiple Inheritance, Hierarchical Inheritance, Using Super, Constructor -Order of Execution in Inheritance, Overriding methods, Final variables and methods, Final Classes, Abstract methods and Classes, Containership, Visibility Control.

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UNIT-IV

WRAPPER CLASSES AND VECTORS - Introduction, Wrapper Classes, Number Class, Byte class, Short class, Integer class, Long class, Converting Numbers to and from Strings, Float class, Double class, Character class, Boolean class, Vectors, Creating a vector

INTERFACE & PACKAGES - Introduction, Interfaces, Defining interface, Implementing interface, Accessing interface method, Accessing interface variable, Extending interfaces, Packages, System packages, Using system packages, User defined packages, Adding class to a package, Accessing and using package.

EXCEPTION HANDLING - Introduction, Exceptions, Using try & catch, Multiple catch clauses, Finally, Throw, Throws

MULTITHREADING - Introduction, The Main Thread, Creating Threads, Life cycle of Thread, Using Threads Methods, Thread Priorities, Stopping and Blocking a thread, Thread Exceptions, Using is Alive( ) and join( ), Synchronization.

UNIT-V

APPLETS - Introduction, Local & remote applets, Applet vs applications, Writing applets, Life cycle of an applet, Creating source code of applet, Creating an executable applet, Creating applet tag, Adding applet tag to html, Running the applet, Detailed form of applet tag, Passing parameters to applet, Aligning the display, Html tags, Getting input from user

INPUT-OUTPUT STREAMS AND FILE MANAGEMENT - Introduction, Stream, Stream Classes, Byte Stream Classes, Character Stream Classes, System Class, Reading Console Input, Writing Console Output, Using the File Class, Random Access File

GRAPHICS PROGRAMMING - Introduction, The Graphics Class, Drawing Lines and Rectangles, Using draw Oval() and fill Oval() method, Drawing arcs, Drawing Polygon, Line Graphs, Drawing Bar Charts.

COURSE OUTCOMES:-

Students will complete software projects comprised of an object-oriented design, implementation, and test plan.

1. Designs will demonstrate the use of good object-oriented design principles including encapsulation and information hiding.
2. The implementation will demonstrate the use of a variety of basic control structures including selection and repetition; classes and objects in a tiered architecture (user interface, controller, and application logic layers); primitive and reference data types including composition; basic AWT components; file-based I/O; and one-dimensional arrays.
3. Test plans will include test cases demonstrating both black box and glass box testing strategies.

Practicals:

1. Write a Java Program to Display message on computer screen.
2. Write a Java Program to develop a class for Rational numbers
3. Design a Date class in Java

4. Write a Java Program to design an interface for Stack ADT and implement Stack ADT using both Array and Linked List.
5. To develop a vehicle class hierarchy in Java to demonstrate the concept of polymorphism
6. Design a Date class in Java.
7. To write a Java Program to randomly generate objects and write them into a file using concept of Object Serialization
8. Develop a scientific calculator using even-driven programming paradigm of Java.
9. To write a multi-threaded Java program to print all numbers below 100,000 that is both prime and Fibonacci number
10. To develop a Java Program that supports multithreaded echo server and a GUI client.
11. To implement a calculator using GUI Environment with the help of javax.swing package.

Text Books:

- Java How to Program by Paul Deitel & Harvey Deitel Paul (New Delhi Pearson)
- Peter Norton Guide To Java Programming Peter Norton, (Techmedia Publications)
- Java How to Program by Paul Deitel & Harvey Deitel Deitel Paul Deitel (New Delhi PHI)
- Head First Java Sierra , Kathy (SPD)

Reference Books:

- Programming In Java, 6th Edition, E. Balaguruswamy (McGraw-Hill)
- Java : The Complete Reference Schildt Herbert (New york. MC Graw)
- Web Technologies : TCP/IP, Web/Java Godbole Achyut (New york. MC Graw)

Corse Code: 3SCIT 201

DATA ENTRY OPERATIONS

Course Objective:-

1 To understand the basic knowledge of computer
2 To understand the assembly-level programming
3 To understand the input output devices, storage media, and memory

Syllabus:

Theory :

UNIT-1

Basics of Computer: Computer Organization, Input and Output Devices, System Software and Application Software, Computer Language, Compiler and Assembler.
Operating System: Elements of Windows XP, Desktop Elements, Locating Files and Folders, Changing System Setting, File Management in Windows, Installation of Software and Hardware.

UNIT-2

Basics of Word Processing: Starting Word Program, Word Screen Layout ,Typing Screen Objects, Managing Documents, Protecting and Finding Documents, Printing Documents
Formatting Documents: Working with text, Formatting Text, Formatting Paragraphs, Bulleted and Numbered Lists, Copying and Moving Text, Spelling and Grammar, Page Formatting, Creating Tables, Mail Merge.

UNIT-3

Types of document in Mail merge: Creating data Source, Creating Mailing Labels, Creating Mailing Labels, Merging Data into Main Document.
Basics of Spreadsheet: Selecting, Adding and Renaming Worksheets, Modifying a Worksheet, Resizing Rows and Columns, Workbook Protection.

UNIT-4

Formatting Worksheets: Formatting Toolbar, Formatting Cells, Formatting Rows and Columns, Formatting Worksheets Using Styles, Protect and Unprotect Worksheets.
Formulas, Functions and Charts: Formulas and Functions, Copying a Formula, Types of Functions, Types of Charts, Auto Shapes and Smart art.

UNIT-5

Creating Presentation: Creating Slides, Slide Sorter View, Changing Slide Layouts, Moving Between Slides.
Introduction to Internet: Getting Connected to Internet, Types of Internet Connections, Internet Terminology, Understanding Internet Address, Web Browser and Internet Services.

Course Outcomes:-

Practicals

After studying this student will be able to know about terms and concepts of Microsoft suite completely.(like MS-word, power-point-excel sheets, outlook express)

1.To study the features of MS-Office 2007 such as MS-Word, MS-Excel, MS-Power point and MS-Access
2. To create a document using mail merge in MS-Word.
3. To create a document for type the mathematical equation in MS-Word.
4. To create a employees work detail list using MS-Excel
5. To calculate student mark details using MS-Excel.
6. To Import External Data, Sort and Filter using MS-Excel.
7. To create a database using MS-Access.
8. To generate report using MS-Access.
9. To create a presentation text and images with effects using MS-Power point.
10. To create a presentation with effects using animation and sound effects.
11. To create a document using mail merge in MS-Word.

Reference Books:

Chairman (Board of studies) **Dean(Faculty)** **(Registrar)**

3HBEL501

INTRODUCTION TO SOFT SKILL & TEAM BUILDING

COURSE OBJECTIVES:

By the end of the soft skills training program, the students should be able to:

- Develop effective communication skills (spoken and written).
- Develop effective presentation skills.
- Conduct effective business correspondence and prepare business reports which produce results.
- Become self-confident individuals by mastering inter-personal skills, team management skills, and leadership skills.
- Develop all-round personalities with a mature outlook to function effectively in different circumstances.
- Develop broad career plans, evaluate the employment market, identify the organizations to get good placement, match the job requirements and skill sets.
- Take part effectively in various selection procedures adopted by the recruiters.

Teaching Methods:

The teaching methods in the soft skills training include lectures, projects, role plays, quizzes, and various other participatory sessions. The emphasis will be on learning by doing.

Since the method of training is experiential and highly interactive, the students imbibe the skills and attributes in a gradual and subtle way over the duration of the program. The students will not only learn the skills and attributes but also internalize them over a period of time.

Internalization ensures that the skills and attributes become part of the students' nature. Subtle changes are bound to occur in their behavior and outlook, and these will make them more self-assured and confident. Moreover, the behavior changes will be gradual and natural and will not appear artificial or put on. Thus, the changes in them will be genuine and positive.

Evaluation:

The Soft Skills training program is a credit course and the evaluation of the students takes place on a continuous basis. Active participation in activities, interest displayed by the students in acquiring the necessary attributes and skills and the commitment shown by them to improve in terms of attitudes are the main criteria for evaluation.

3HBEL501

Introduction, Communication Skills, Presentation Skills, Body Language, Resume writing, Interview
Skills, Corporate Etiquettes

Module 1: Introduction

General Introduction of self by students, Importance of the Training sessions, Importance of Presentation
Skills, Public Speaking

Module 2: Basic English Grammar

Vocabulary, Kinds of Sentences, Verb, Adverb, Tenses, Preposition, Conjunction, Formation of Sentences, Sentence Making, Translation

Module 3: Communication Skills

Communication meaning, Function, Process, Types of communication, Barriers of communication, Guidelines for effective communication, Purpose of Good communication, Importance of right Pronunciation

Module 4: Listening and Writing Skills

Importance of effective listening, Importance of effective writing skills, Conversation Practice, Guidelines for
Effective writing

Module 5: Body Language

Gestures, Voice Modulation, Eye Contact, Facial Expression, Posture, Dressing Sense, Attire, Hand, movements, General Etiquette, Mannerism, Smiling Gestures, Confidence building, Exit walk

Module 6: Behavioral skills

Team Management, Time Management, Stress Management, Decision Making, Positive Thinking Attitude, self actualization, Working style

Module 7: Email Skills

Email Etiquette, Email Drafting

Module 8: Creating a Resume/ Resume writing tips

Format and Content of Resume, Fresher's Resume, Helpful Tips For Resume Writing, Things to avoid in Resume

Module 9: Group Discussion

Introduction "what is GD", Ability to Influence, Importance of Active Listening, Key Steps to succeed in GD
Do's and Don'ts of GD.

Module 10: Interview Skills/ Tips

Groundwork before the Interview, Greeting Etiquettes, Self Introduction, Tips to answer "questions"
Do's and Don'ts of Interview, Preparing a day before the interview, Things to remember during the Interview.

Module 11: Telephonic Interview and Video Conferencing Interview Tips

Treat the Interview like a face to face Interview, Telephone Etiquette, Flow of Conversation

Module 12: Corporate Etiquette

Professional Attitude at work, Punctuality, Meeting etiquettes, Professional
Dressing sense, Cordial Relation with Fellow workers

Text Books:

Reference Books:

CORSE CODE: 3IBCA 401

LINUX OPERATING SYSTEM —OPERATIONS & MANAGEMENT

Corse Code: 3IBCA 401

COURSE OBJECTIVE:-

1 To introduce the internals of Linux Operating System.
2 To develop, debug and implement Shell Programme.
3 To understand System administration.
4 To understand configuration of Proxy Server
5 To Installation, configuration and managing a simple LAN within an organization using Linux.

Syllabus:

Theory:

UNIT-I

INTRODUCTION TO LINUX - introduction, what is Linux?, basic features, Linux different flavors, gnu/Linux, the most popular flavors of Linux, installing requirement: minimum hardware requirements, software requirements to install Linux, allocating disk space for Linux, adding a new hard drive, using an existing hard drive or partition, reconstructing an existing partition to install Linux, using fdisk to partition a hard disk, installing Linux, basic architecture of unix/Linux system, Linux logging in, logging out and shutting down, avoid the GUI.

UNIT-II

LINUX FILE SYSTEMS - introduction, the inode and its structure, the Linux file system , Linux standard directories, layout of file system , supported file systems, the second extended file system (ext2), the ext2 superblock, Linux directory terminology, how Linux access files , storage files.

USING LINUX COMMANDS - introduction, commands for files and directories, creating and viewing files, viewing files, disk related command,

SHELLS, PROCESSES & ESSENTIAL LINUX COMMANDS - introduction , understanding shells, process in Linux, connecting process with pipes, background processing, managing multiple processes, changing process priority, printing commands in Linux, scheduling of process, file related commands

MATHEMATICAL COMMANDS AND TEXT EDITORS IN LINUX - introduction, mathematical commands, interacting with 'units', using 'units' non-interactively, the vi editor, the vim editor - the powerful simple editor, efficient editing with vim, the joe editor- joe's own editor, editing tasks - basic editing.

UNIT-III

SYSTEM ADMINISTRATIONS IN LINUX - introduction, system administrator or supper user, common administrative tasks: role of system administrator, identifying administrative files: configuration and log files, managing user accounts, changing permission and ownership, creating and mounting file system, getting system information

BACKUP AND UTILITIES - introduction, backup and restore files, Linuxconf, utility in gui, reconfiguration hardware with kudzu

CORSE CODE: 3IBCA 401

CONFIGURING DESKTOP IN LINUX - introduction, desktop environment, Linux configuration tools, x-configurator, understanding xf86config file, starting and using x desktop, configuring x: changing x settings, kde & gnome graphical interface.

UNIT-IV

BASIC NETWORKING ADMINISTRATIONS IN LINUX - introduction, setting up a lan using Linux, setting up an ethernet (local area networks (lan), network topologies, lan equipment, lan equipment setup, configuring host computers, choosing peer to peer vs client server model, administrations in network environment, checking ethernet connection, connecting to internet, common networking administrative tasks, Linux network file system (nfs), initializing and configuring ethernet interface.

TCP/IP NETWORK - introduction, TCP/IP basics, dns services, routing using Linux, slip & ppp services, squid - Linux weIBCAche/proxy server.

UNIT-V

INSTALLATION & ADMINISTRATIONS OF SERVERS- introduction, what are servers?, type of servers, overview of e-mail, installation and administrations of mail servers (send mail), overview of ftp, installation and administrations of ftp (vsftpd) servers, installation and administrations of apache web servers.

SHELL PROGRAMMING - introduction, basic of shell programming: building blocks, shell scripts, getting started with shell programming, wild cards (filename shorthand or meta characters), shell variables, shell keywords, various types of shells, conditional and looping statements, creating shell programs for automate system and report printing, use of grep in shell, call awk from shell script, examples of general shell programming, using "bourne shell".

COURSE OUTCOMES:-

After study this student will be able to know about basic features, different flavors of Linux. Advantages, installing. Student will know about processes in Linux, shell programming & gnome graphical interfaces. Identify and use UNIX/Linux utilities to create and manage simple file processing operations, organize directory structures with appropriate security, and develop shell scripts to perform more complex tasks.

Practicals:

1. Write a shell script to find factorial of a given integer.
2. Write a shell script to list all of the directory files in a directory.
3. Write a shell script that accepts a list of file names as its arguments, counts and reports the occurrence of each word that is present in the first argument file on other argument files.
4. Write a shell script that displays a list of all the files in the current directory to which the user has read, write and execute permissions.
5. Write a shell script that deletes all lines containing a specified word in one or more files supplied as arguments to it.
6. Shell script to display the period for which a given user has been working in the system.
7. Aim to compute gross salary of an employee, accordingly to rule given below.

If basic salary is <15000 then HRA =10% of basic and DA =90% of basic

If basic salary is >=15000 then HRA =500 and DA =98% of basic.

8. Write an awk script to find out total number of books sold in each discipline as well as total book sold using associate array down table as given

Electrical 34	electrical 80
Mechanical 67	computers 43
Mechanical 65	civil 198

9. Create a script file called file properties that reads a file name entered and output its properties
10. Write a shell script using expr command to read in a string and display a suitable message if it does not have at least 10 characters.
11. Write a shell script that reports the logging in of a specified user within one minute after he/she logs in. The script automatically terminates if the specified user does not login during a specified period of time.

Text Books:

- Introduction to Unix & Shell Programming M.G. Venkateshmurthy (New Delhi Pearson Education)
- Unix and Shell Programming Behrouz A. Forouzan & Richard F. Gilberg (New Delhi Cengage Learning)
- Advanced Unix A Programmer`s Stephen Prata (New Delhi BPB Publication)

Reference Books:

- UNIX – Concepts & Applications (Third Ed.) – Sumitabha Das (Tata McGraw Hill Publications.)
- Unix for programmers and users (Third Ed.) – Graham Glass & King Ables, (Pearson Education India.)
- Unix Concepts and Applications Ashish Tiwari (Indore Kamal Prakashan)

CORSE CODE: 3IBCA 402

RDBMS WITH ORACLE

Corse Code: 3IBCA 402

COURSE OBJECTIVE:-

1. To Identify the advantages of the database approach over the file-based data storage system
2. To understand the architecture of a DBMS and functions of the database system components
3. To understand the features of distributed and object- oriented databases
4. To understand the various operations of PL\SQL

Syllabus:

Theory:

UNIT-I

Introduction to DBMS & RDBMS - Introduction to database, Introduction DBMS, Different database models, Structure of dbms, RDBMS an introduction, Cod's law for rdbms, Components of rdbms (kernel/data dictionary)

Introduction to Oracle RDBMS and Client/Server Computing - Introduction to Oracle, The Features of Oracle 9i, The oracle product details, An introduction to client/server computing, Oracle and client/server computing.

Overview of Oracle Architecture - Oracle Architecture, Oracle Files, System and User Processes, Oracle Memory, System Database Object, Protecting Data

UNIT-II

Introduction to SQL*PLUS -Introduction to sql, Features of sql, Components of sql, Introduction to sql*plus, Features of sql*plus, Execution of sql*plus, Important commands used in sql*plus, Oracle Data-Types.

Working with Tables -Tables - An Introduction, Use Of Table In Sql, Viewing The Stored Data In Tables, Filtering Table Data, Updating Data, Deleting Data From Tables, Modifying The Structure Of Tables, Destroying A Table, A Few Other Sql Statements

Data Constraints - Data Constraints, The Use of Data Constraints, The Types of Data Constraints, Defining Integrity Constraints By 'Alter Table', Removing Integrity Constraints, 'Null' Value Concept, 'Not Null' Constraint, Default Value Concept, 'User Constraints' Table

UNIT-III

Data Manipulation in SQL - Oracle Operators, Range Searching, Pattern Matching, LIKE 'IN' and 'NOT IN' Predicates, an Introduction to 'DUAL' Table, an Introduction to 'SYSDATE'

Oracle Functions - Oracle Function, Function Types, Group Function, Scalar Function, Working With 'Date' in Sql, Grouping Of Data of Different Tables in Sql Joins, Sub-Queries & Views - types of joins, use of sub-query, 'union' and clause, 'Intersect' Clause, Minus Clause, Concept of View, Types of View, Use of ViewUser Accounts Management & Indexing - Creation of User Account, User Account Management, Granting Privileges, Revoking Privileges, Modifying Password, Closing User Account, Concept of Index, Creation of Index, Types of Index, Use of Index, Deleting Index.

CORSE CODE: 3IBCA 402

UNIT-IV

Introduction to PL/SQL Programming - Introduction to PL/SQL, Advantages of PL/SQL, Differences between SQL and PL/SQL, PL/SQL Block Structure, PL/SQL Character set, Variable, Constant and Data type, Assignment Operator and the use of 'SELECT....INTO, PL/SQL Program Control Structure, The use of 'IF...THEN...ELSE...ENDIF', Iteration Control (The use of LOOP, WHILE, FOR), The use of 'GOTO Statement.

Cursor - Cursor an Introduction, Types of Cursor, Features of Cursor, Implicit Cursor, Explicit Cursor, Application of for Loop with Cursor

Exception Handling in PL/SQL - Exception Handling in Pl/Sql, Built in Exception Handling, User Defined Exception Handling, The Raise Application-error Procedure.

UNIT-V

Oracle Transaction - Oracle Transaction, Commit Statement, Rollback Statement, Save point statement, Concept of lock, Types of locks, Levels of Locks, 'SELECT.....FOR UPDATE' Statement, Removing the Lock.

Procedures and Functions- Concept of Procedures and Functions, Advantages of Procedure and Function, Creation of Procedure and Function, Deleting Procedure and Function

Database Triggers - Concept of Triggers, Types of Triggers, Creation of Triggers, Application of Triggers, Deleting Triggers .

COURSE OUTCOMES:-

After study this student will be able to know about the core database administration tasks and tools. Restore databases from backups, Import and export data. Monitor SQL Server.

To understand the concept of Transaction and Query processing

Practicals:

1. Write a query to implement Different types of DDL statements in SQL.
2. Write a query to implement Different types of DML statements in SQL.
3. Write a query to implement Different types of DQL statements in SQL.
4. Write a query to implement Different types of DCL statements in SQL.
5. Write a query to explore ‘select’ clause using where, order by, between, like, group-by, having etc.
6. Write a query to implement the concept of Joins in SQL.
7. Write a query to implement the concept of Indexes and views.
8. Write a query to implement the restrictions on the table.
9. Write a query to implement the concept of SubQuestionries.
10. Write a query to implement the structure of the table.

Text Books:

- Database Management System (H) Laad Ameet (Kamal Prakashan)
- Introduction to Database Management Systems Kahate Atul (Pearson)

- an introduction to database system Bipin C.Desai (New Delhi Galgotia)

Reference Books:

- Database Management System Leon & Leon (Vikas Publications)
- Database System Concepts Henry F.Korth & Abraham Silberschatz. (New york. MC Graw)
- An Introduction To Database System C.J.Date (New Delhi Pearson)

CORSE CODE: 3IBCA 403

PROGRAMMING WITH VISUAL BASIC .NET

Corse Code: 3IBCA 403

COURSE OBJECTIVE:-

The aim of the course is for the student to aim knowledge in the basic concepts of object-oriented programming and build skills to develop modern software programs using the language Visual Basic. The course is also suitable for students with prior programming experience who wish to strengthen their knowledge in the area of object-oriented design and programming with Windows.

1. Analyze program requirements
2. Design/develop programs with GUI interfaces
3. Code programs and develop interface using Visual Basic .Net
4. Perform tests, resolve defects and revise existing code

Syllabus:

Theory

UNIT-I

Introduction to .NET - Introduction, What is a Program?, What is Programming?, What do you mean by .NET Framework?, Features of .NET Framework, VB 6 VS VB.NET, VB.NET VS JAVA, VB.NET VS C#, What is .NET Architecture?, What is CLR?, What do you mean by Class Library?, Versions of .NET Framework, What are Assemblies?, Namespaces, CTS (Common Type System), Interfaces, What is special in VB.NET?

Visual Studio 2010 - Introduction, What is Visual Studio?, Flavors of Visual Studio, Visual Studio 2010, File Extensions Used in VB.Net, Using Visual Studio 2010, Feature of Visual Studio 2010, Output Window, Components Tray, References and the Reference Window, Quick View of Visual Studio 2010, Opening an existing project, Adding a Form to a Project.

UNIT-II

The Visual Basic Language - Visual Basic Statements, Data Types in VB.NET, Declaring Variables, Declaration of Variables (Advanced), Data Type Conversion, String Functions, Formatting Data, Arithmetic Operators, Parentheses and Precedence, Operator Operation, Constants, Control Statements, Arrays in VB.NET, Specifying Optional Procedure Arguments, Passing a Variable Number of Arguments, Recursion, Using a Delegate

Working With The Controls - The Toolbox, Adding and deleting Tools in the Toolbox, creating a tab on the toolbox, Form Designer Basics, The Button, The Combo Box , The List Box, The Checkbox, The Picture Box, The Radio Buttons, The Scroll Bar, Timer, List View, Tree View, Toolbar, Dialog Boxes, Menus in VB.NET, Link Label Control

Designing Menus - Menus, Context menu, Event of the Menu Item, Creating menu items in Visual Studio .Net

UNIT-III

Object Oriented Programming with VB.NET - OOPs?, What is an Object?, What are Classes?, Visual Basic .NET and Object-Oriented, Principles of Object-Oriented Programming, Classes V/s Objects,

Inheritance, Polymorphism and Overloading, Scope and Accessibility in Class Modules, Namespaces, Managed Execution, Assemblies, Assemblies in VB .NET
The .NET Framework Class Library - The .NET Framework Class Library, The System Namespace, Data Type Conversion Using Convert Class, The Array Class, The Math Class, The String Class, Other Namespaces, System. Collections, System. Data, System.IO.

UNIT-IV

OLE/COM/Win32 API - Object Linking and Embedding, History of OLE/COM, Component Object Model (COM), COM interoperability in .NET, Win32 API in .NET, COM Interoperability in .NET, Installation and Registration of Assembly, Microsoft Office solutions with Visual Studio .NET, Automation of Office from Visual Studio .NET, Creating and opening Microsoft Word document from VB.NET
User Controls in VB.NET - Introduction, The Control Class, The Control Class' Properties, The Control Class' Methods, Creating the Control Project 1, The Round Button Control, Creating the Control Project 2, Building the new Button.

UNIT-V

A Brief Introduction to Database Access with VB .NET - Introduction, What is ADO?, What is ADO.NET?, The Connection Object, Connecting to a Database, The Command Object, The Data Adapter Object, The Data Reader Object, The Dataset Object, Updating Your Database by Using Datasets, The Accept Changes () Method, The Reject Changes () Method, The Has Changes () Method, The Get Changes () Method, Working with Datasets in Visual Studio, Moving Around in Dataset and Retrieving Data, Using Strongly Typed Datasets, Datasets With Multiple Tables, Finding and Sorting Data in Datasets, Filtering on Row State and Version, Data View Manager.

COURSE OUTCOMES:-

After the completion of the course, students are expected to:

1. Have gained a good understanding of the basic concepts of object orientation
2. Have a good understanding of the visual basic language structure and language syntax
3. Have developed the ability to design and develop interactive applications using the object-oriented principals, encapsulation, inheritance and to some extents polymorphism
4. Be able to effectively develop applications with full functionality and a graphical user interface using the language visual basic
5. Have the capability of analyzing and finding suitable and effective solutions to windows based applications using classes and objects.

Practicals:

1. Create an application to accept a character from console and check the case of the character
2. Write a VB.Net program to accept any character from keyboard and display whether it is vowel or not.
3. Write a VB .NET program to accept a string and convert the case of the characters
4. Develop a menu based VB .NET application to implement a text editor with cut, copy, paste, save and close operations.
5. Write a program to implement the calculator with memory and recall operations.

6. Develop a form in VB .NET to pick a date from calendar control and display the day, month, year in separate textboxes.
7. Develop a VB .NET application using the File and Directory controls to implement a common dialog box.
8. Develop a Database application to store the details of students using ADO.NET.
9. Develop a Database application using ADO.NET to insert, modify, update and delete operations.
10. Develop a VB.NET application using Data grid to display record.

Text Books:

- VB.NET Programming Hemant Bairagee (Indore Kamal Prakashan)
- Programming In Visual Basic.NET (H) Vishnu Priya Singh (New Delhi :Computech Publication)

Reference Books:

- VB.NET Programming Black Book Steven holzner (dreamtech publications)
- Mastering VB.NET by Evangelos petroutsos- BPB publications

CORSE CODE: 3IBCA 404

NETWORK & WEB SECURITY

Corse Code: 3IBCA 404

COURSE OBJECTIVE:-

1. To understand basics of Cryptography and Network Security.
2. To be able to secure a message over insecure channel by various means.
3. To learn about how to maintain the Confidentiality, Integrity and Availability of a data.
4. To understand various protocols for network security to protect against the threats in the networks

Syllabus:

Theory:

UNIT I

Introduction to Network Security, Computer Securit y and Cyber Security. Security Terminologies and Principle, Security Threats, Types of attacks (Operating System, application level, Shrink Wrap code, Misconfiguration attacks etc.). Introduction to Intrusion, Terminologies, Intrusion Detection System (IDS), Types of Intrusion Detection Systems, System Integrity Verifiers (SIVS).Indication of Intrusion: System Indications, File System Indications Network Indications.
Intrusion Detection Tools, Post attack IDS Measures & Evading IDS Systems. Penetration Testing, Categories of security assessments, Vulnerability Assessment, Types of Penetration Testing. Risk Management.

UNIT II

Cryptography, Classical Cryptographic Techniques, Encryption, Decryption, Code Breaking: Methodologies, Cryptanalysis, Cryptography Attacks, Brute-Force Attack, Use of Cryptography. Public key cryptography, Principles of Public key Cryptosystems, Cryptographic Algorithms RSA, Data Encryption Standard (DES), RC4, RC5, RC6, Blowfish, Key Management, Diffie-Hellman key exchange, elliptic curve cryptography.

UNIT III

Hash Functions, One-way Hash Functions, SHA (Secure Hash Algorithm), Authentication Requirements, Authentication Functions, Kerberos. Message Authentication codes ,Message Digest Functions, MD5, SSL (Secure Sockets Layer), SSH (Secure Shell), Algorithms and Security, Disk Encryption, Government Access to Keys (GAK) Digital Signature: Analysis, Components, Method, Applications, Standard, Algorithm: Signature Generation/Verification, ECDSA, EIgamal Signature Scheme, Digital Certificates.

UNIT IV

Trojans and Backdoors: Overt and Covert Channels, Working, Types (Remote Access Trojans, Data-Sending Trojans, Destructive Trojans, Trojans, Proxy Trojans, FTP Trojans, Security Software Disablers).
Viruses and Worms: Characteristics, Working, Infection Phase, Attack Phase. Sniffers:

CORSE CODE: 3IBCA 404

Definition, spoofing, Sniffing, Vulnerable Protocols, Types. Phishing: Methods, Process, Attacks Types (Man-in-the-Middle Attacks, URL Obfuscation Attacks, Hidden Attacks, Client-side Vulnerabilities, Deceptive Phishing, Malware-Based Phishing, DNSBased Phishing, Content-Injection Phishing, Search Engine Phishing). Web Application Security- Secured authentication Mechanism, secured session management, Cross-site Scripting, SQL Injection and other vulnerabilities.
Denial-of Service Attacks: Types of Attacks (Smurf Attack, Buffer Overflow Attack, Ping of Death Attack, Teardrop Attack, SYN Attack, SYN Flooding), DDoS Attack (Distributed DoS Attack.), Session Hijacking, Spoofing v Hijacking, TCP/IP hijacking, CAPTCHA Protection.

UNIT V

IP Security, Web Security, Firewalls: Types, Operation, Design Principles, Trusted Systems.
Computer Forensics, Need, Objectives, Stages & Steps of Forensic Investigation in Tracking Cyber Criminals, Incident Handling. Hacking, Classes of Hacker (Black hats, grey hats, white hats, suicide hackers), Foot printing, Scanning (Types-Port, Network, Vulnerability), E-Mail Spiders, Overview of System Hacking Cycle.

COURSE OUTCOMES:-

After successful completion of the course, the learners would be able to

1. Provide security of the data over the network.
2. Do research in the emerging areas of cryptography and network security.
3. Implement various networking protocols.
4. Protect any network from the threats in the world.

Text Books:

- Network Security Bible Cole E.,Krutz R.,Conley J.W. (Wiley India Ltd)
- Network Security A Hacker`s Perspective Fadia Ankit (Macmillan Publishers India)

Reference Books:

- Cryptography and Network Security Behrouz A. Forouzan & Debdeep Mukhopadhyay (New york. MC Graw Hill Co.)
- Cryptography and Network Security Atul Kahate (New york. MC Graw Hill Co.)
- Cryptography and Network Security : Principles and Practice William Stallings (New Delhi Pearson Education)

Chairperson (Board of Studies) | **Dean (Academic Council)** | **(Registrar) Seal**

3HBHP401

HUMAN VALUES AND ETHICS

COURSE OBJECTIVES:

- To help students understand the basic guidelines, content and process of Human value and value crisis in contemporary Indian Society
- To help students understand the meaning of happiness and prosperity for a human being.
- To help students reflect critically on gender violence .
- To facilitate the students to understand harmony at all the levels of human living, and live accordingly.

Syllabus:

UNIT – I: Concept of value and value crisis in contemporary Indian Society.

1. Concept of value
2. Value crisis at- individual level
3. Value crisis at- Cultural level
4. Value crisis at- Societal level
5. The Indian concept of value.
6. Modern Approach to the study of Values.

UNIT – II: Moral and Ethical Human values.

1. Bases for Moral Judgment
2. Some Canons of Ethics
3. Ethics of Duty
4. Ethics of Responsibility
5. Factors to be considered in making Ethical Judgments.
6. Continuous Happiness and Prosperity- A look at basic Human Aspirations.

UNIT – III: Moral Values in Profession.

1. What is Profession?
2. Professional Ethos
3. Code of Professional Ethics
4. Corporate social Responsibility

UNIT – IV: Gender sensitization.

1. Socialization of Women
2. Demographic consequences
3. Domestic Violence
4. Women's work, its politics and economics , fact and fiction ,Unrecognized and unaccounted work

UNIT – V: Co- Curricular Activities and value Education.

1. Games and sports

2. Literary and cultural Activities
3. NSS, NCC activates
4. A New Approach to Human Value Freedom, Creativity Love & Wisdom

Course Outcomes:

On completion of this course, the students will be able to:

1. Understand the significance of value inputs in a classroom and start applying them in their life and profession
2. Understand the value of harmonious relationship based on trust and respect in their life and profession.
3. Students will develop a sense of appreciation of women in all walks of life .
4. Understand the role of a human being in ensuring harmony in society and nature.

Text Books:

Reference Books:

CORSE CODE: 3IBCA 501

WEB PROGRAMMING WITH ASP.NET AND C#

Corse Code: 3IBCA 501

COURSE OBJECTIVE:-

1. To understand networking and the World Wide Web.
2. Building multi-tier enterprise applications.
3. .NET framework.
4. .NET Interoperation services.
5. Client side programming: HTTP, CGI, Cookies, JavaScript, HTML, XML.
6. Server side programming: Web Forms, ASP.NET Web Services, ADO.NET Data Access
7. Client/Server Programming, 3-tier architecture.
8. ASP.NET Web services and web service security.
9. Simple Object Access Protocol (SOAP) and Web Services.

Syllabus:

Theory:

UNIT – I

Overview of ASP.NET framework, Understanding ASP.NET Controls, Applications
Web servers, installation of IIS.
Web forms, web form controls -server controls, client controls, web forms & HTML, Adding controls to a web form ,Buttons, Text Box , Labels, Checkbox, Radio Buttons, List Box, etc.
Running a web Application, creating a multiform web project.

UNIT-II

Form Validation: Client side validation, server Side validation, Validation Controls: Required Field Comparison Range. Calendar control, Ad rotator Control, Internet Explorer Control.
State management- View state, Session state, Application state,

UNIT-III

Architecture of ADO.NET, Connected and Disconnected Database, Create Connection using ADO.NET Object Model, Connection Class, Command Class, Data Adapter Class, Dataset Class. Display data on data bound Controls and Data Grid.
Database Accessing on web applications: Data Binding concept with web, creating data grid, Binding standard web server controls. Display data on web form using Data bound controls.

UNIT-IV

Writing datasets to XML, Reading datasets with XML.
Web services: Introduction, Remote method call using XML, SOAP, web service description language, building & consuming a web service, Web Application deployment.

CORSE CODE: 3IBCA 501

UNIT-V

Overview of C#, C# and .NET, similarities & differences from JAVA, Structure of C# program. Language features: Type system, boxing and unboxing, flow controls, classes, interfaces, Serialization, Delegates, and Reflection.

COURSE OUTCOMES:-

After succefully completing these course students shall be able:

1. Successful students will able to design web applications using ASP.NET
2. Successful students will be able to use ASP.NET controls in web applications.
3. Successful students will be able to debug and deploy ASP.NET web applications
4. Successful students will be able to create database driven ASP.NET web applications and web services

Practicals:

1. Working with call backs and delegates in C#.
2. Program to display the addition using the windows application.
3. Creating a Windows Service with C#
4. Using Reflection in C#
5. Sending Mail and SMTP Mail and C#
6. Write a program working with Page using ASP.Net.
7. Write a program working with forms using ASP.NET.
8. Write a program using RequiredFieldValidator in ASP.NET.
9. Write a program using Login Form in ASP.NET.
10. Write a program using Checkbox List in ASP.NET .

Text Books:

- Beginning Asp.Net 4.5 in C# and VB Imar Spaanjaars (New Delhi Wiley India Ltd)
- VB.NET Black Book Steven holzner (dreamtech)
- Programming in C# : A Primer E Balagurusamy (New Delhi Tata Mc Graw Hill)

Reference Books:

- ASP.NET in 3.5 Framework with C# Ashish Tiwari (Indore Kamal Prakashan)
- ASP.NET 4.0 (Covers C# 2010 and VB 2010 Codes) Black Book Kognet (Learning Solution Inc.)
- The Complete Reference ASP.NET Matthew MacDonald (New Delhi Tata Mc Graw Hill)

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CORSE CODE: 3IBCA 501B

COMPUTER GRAPHICS

Corse Code: 3IBCA 501B

COURSE OBJECTIVE:-

1. To introduce the use of the components of a graphics system and become familiar with building approach of graphics system components and algorithms related with them.
2. To learn the basic principles of 3- dimensional computer graphics.
3. Provide an understanding of how to scan convert the basic geometrical primitives, how to transform the shapes to fit them as per the picture definition.
4. Provide an understanding of mapping from a world coordinates to device coordinates, clipping, and projections.
5. To be able to discuss the application of computer graphics concepts in the development of computer games, information, visualization, and business applications.
6. To comprehend and analyze the fundamentals of animation, virtual reality, underlying technologies, principles, and applications.

Syllabus:

Theory:

UNIT 1

Computer Graphics- Introduction to computer graphics, Manual Drafting vs computer graphics, Advantage of computer graphics, Classification of computer graphics, components of computer graphics, Application of computer graphics.

Graphical input devices – mouse, keyboard, trackball, touchpad, joystick, touch screen, light pen, image scanner, data glove.

Graphical output devices – Cathode Ray Tube, Liquid crystal display, Light emitting diode, Impact printer, non-impact printer, plotter.

UNIT 2

SRG -Introduction to SRG, Advantage and Limitation of SRG, Line generation, DDA algorithm for Line generation, Bresenham's algorithm for Line generation, Circle generation, Bresenham's Algorithm for circle generation.

Clipping- clipping line, clipping line algorithm, polygon, types of polygon, polygon clipping algorithm, clipping circle, clipping circle algorithm.

UNIT 3

Geometric Transformation, 2D transformation and 3D transformation – translation of object, scaling of object, rotation of object, shearing of object, reflection of object. Combined transformation or composite transformation, homogeneous coordinate.

CORSE CODE: 3IBCA 501B

Illumination model – Introduction to Illumination model, categories of illumination model, Animation – Introduction to Animation, types of Animation, principles of animation.

UNIT 4

Polygon surface- Introduction to Polygon surface, vertex table, edge table, surface table, Introduction to subdivision algorithm, polygon visibility cases in subdivision technique, subdivision algorithm. Z-buffer algorithm.
Quadric Surface – Sphere, Ellipsoid, Tores. Super quadric surface – super ellipse, super ellipsoid
Blobby objects – molecular structure, water droplets, melting objects, muscle shape.

UNIT 5

Curve--Spline representation, types of spline representation, parametric continuity condition, types of parametric continuity condition, cubic spline interpolation method, Bezier curve, midpoint Bezier Technique algorithm, B–spline curve, operations of B-spline curve, Beta spline. Sweep representation, constructive solid-geometry method, octrees representation.

Course Outcomes:-

- To list the basic concepts used in computer graphics.
- To implement various algorithms to scan, convert the basic geometrical primitives, transformations, Area filling, clipping.
- To describe the importance of viewing and projections.
- To implement various line generation, clipping, curve generation algorithms.

List of practicals

1. Program to implement a line using slope intercept formula.
2. Program to implement line using dda algorithm.
3. program to implement line using bresenham's algorithm.
4. Program to implement circle using mid point algorithm.
5. Program to implement translation of a line and triangle
6. Program to implement rotation of a line and triangle
7. Program to implement scaling transformation.
8. Program to implement 3d rotation about an arbitrary axis .
9. Program to implement cohen sutherland line clipping .
10. Program to implement sutherland hodgman polygon clipping .

Text Books:

- Computer Graphics New Delhi Tata Mc Graw Hill Pub.
- Computer Graphics & Multimedia A.P. Godse & D.A. Godse (Pune Technical Publication)
- Computer Graphics & Multimedia G S Baluja (Dhanpat Rai Pub)
- Principles Of Interactive Comp. Graphics Newman; (W.M)

CORSE CODE: 3IBCA 501B

Reference Books:

- Computer Graphics C Version Donald D. (New Delhi Pearson Education)
- Procedural Elements for Computer Graphics David F. Rogers (New york. MC Graw Hill Co.)
- Computer Graphics Amarendra N Sinha & Arun D Udai (New york. MC Graw Hill Co.)

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CORSE CODE:3IBCA 502 A

MANAGEMENT INFORMATION SYSTEM

Corse Code:3 IBCA 502 A

Course Objective:-

1. To understand why information systems are so important today for business and management
2. To understand the role of the major types of information systems in a business environment and their relationship to each other.
3. To understand the impact of the Internet and Internet technology on business electronic commerce and electronic business.
4. To understand the major management challenges to building and using information systems and learn how to find appropriate solutions to those challenges.

Syllabus:

Theory:

UNIT- I

Fundamentals of Information Systems, Introduction, Data, Information and Knowledge, Concept of System, Characteristics of A System, Elements of A System, , types of a system, Management Information System , Introduction, Management Information System (MIS), Elements Of MIS, Objectives Of MIS, Characteristics of MIS, Views Of MIS, Role of MIS in Management.
Information, Introduction, What is Information, Need of Information, Levels of Information.

UNIT- II

System Development Life Cycle, Introduction, System development Life cycle, The problems of a system mean, Different Phases of System Development Life Cycle, Considerations for candidate systems , political consideration, prototyping.
PLANNING, Introduction, Meaning and Definition of Planning, Nature / Features of Planning, Objective of Planning, Levels of Planning, Types of planning, Advantages of Planning, Limitations of Planning.
System Planning and Initial Investigation , Introduction, System planning, Why system planning ?, Strategic MIS planning, Managerial and operational Mis planning, Strategies for determining information requirements, Getting information from the existing information system, Prototyping, Initial investigation, , Activities in initial investigation, Background analysis, Fact-Finding techniques, Data collection, Correspondence and questionnaires, Personal interview, Observation, Research.

UNIT- III

Structured Analysis and Feasibility Study , Introduction, What is Structured Analysis ?, Why Structured Analysis ?, Charts, Data Flow Diagram, Data Dictionary, Data Dictionary Decision Trees, Structured English, Why Feasibility Study ?, Steps In Feasibility Study, Cost Benefit Analysis.
System Design, Introduction, Design Process, Phases of Design, Methodologies of Designing, Structured Design, Functional Decomposition, Module Coupling and Cohesion, Prototyping,
Input, Output And Form Design, Introduction, Input Design, Input Design Considerations, Input Devices, Output Design, Form Design, Types of Forms, Layout Considerations, Print Forms in Reasonable Quantities, Automated Form Design, Forms Control.

CORSE CODE: 3IBCA 502 A

UNIT-IV

File Organization And Database Design, Introduction, File Structure, File Organization, Methods of Organizing Files, Objectives of Database, Data Structure, Types of Relationship Amidst Data, Types of Data structure, Entities and Attributes, Normalization, Why is Normalization Necessary ?, Role of Database Administrator, Managing Data Activities, Managing Database Structure, Managing Database Management System.

Implementation And Software Maintenance , Introduction, What is System Implementation ?, What is System Conversion ?, Types of Implementation, Conversion, Conversion Activities, User Training, Combating Resistance to Change, Post Implementation Review, Software Maintenance, Maintenance or Enhancement ?, Primary Activities of Maintenance Procedure, Reducing Maintenance Costs.

UNIT5

System Security And Disaster Recovery Planning , Introduction, System Security, , Threats to System Security, Personal, Risk Analysis, Control Measures, Recovery/Restart Requirements, System Failures and Recovery, Disaster/Recovery Planning, Plans, Team, Planning Task,

Information System for Business Operations, E-Business, Components of E-Business Model, E-Business Trends, Information system for strategic advantage, Information System for Managerial Decision Support, Management Information systems, Decision Support System (DSS), Other Information systems.

COURSE OUTCOMES:-

After study this student will be able to know about

1. The basic concepts and technologies used in the field of management information systems.
2. Have the knowledge of the different types of management information systems.
3. Develop an understanding of how various information systems work together to accomplish the information objectives of an organization.

Text Books:

- Management Information System, Gordon Davis, (Tata McGraw Hill)
- Management Information System, Dr.A.K.Gupta, S.Chand

Reference Books:

- Management Information Systems Gagan Varshney (New Delhi : Global)
- Management Information System Course Madhur Kumar Tailang (New Delhi BPB Publication)
- Management Information Systems: Conceptual Foundations, Structure and Development

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CORSE CODE:3 IBCA 502 B

COMPILER DESIGN

Corse Code: 3IBCA 502 B

COURSE OBJECTIVES:-

The Objectives of this course is to explore the principles, algorithms, and data structures involved in the design and construction of compilers. Topics include context-free grammars, lexical analysis, parsing techniques, symbol tables, error recovery, code generation, and code optimization.

Syllabus:

UNIT-I

LEXICAL ANALYSIS

Introduction to Compiling- Compilers-Analysis of the source program-The phases-Cousins-The grouping of phases-Compiler construction tools. The role of the lexical analyzer- Input buffering-Specification of tokens-Recognition of tokens-A language for specifying lexical analyzer.

UNIT-II

SYNTAX ANALYSIS and RUN-TIME ENVIRONMENTS

Syntax Analysis- The role of the parser-Context-free grammars-Writing a grammar-Top down parsing-Bottom-up Parsing-LR parsers-Constructing and SLR (1) parsing table.

Type Checking- Type Systems-Specification of a simple type checker. Run-Time Environments-Source language issues-Storage organization-Storage-allocation strategies.

UNIT-III

INTERMEDIATE CODE GENERATION

Intermediate languages-Declarations-Assignment statements - Boolean expressions-Case statements-Back patching-Procedure calls

UNIT-IV

CODE GENERATION

Issues in the design of a code generator- The target machine-Run-time storage management-Basic blocks and flow graphs- Next-use information-A simple code generator-Register allocation and assignment-The dag representation of basic blocks -Generating code from dags.

UNIT-V

CODE OPTIMIZATION

Introduction-The principle sources of optimization-Peephole optimization- Optimization of basic blocks-Loops in flow graphs- Introduction to global data-flow analysis-Code improving transformations.

COURSE OUTCOME:-

After completion of this course each student will implement a compiler for a small programming language.

CORSE CODE:3 IBCA 502 B

Text Books:

- Principles of Compiler Design Aho A.V.,Ullman J.D., (Narosa Publishing House)
- Modern Compiler Design David Galles (Pearson Education Asia)
- Advanced Compiler Design & Implementation Steven S. Muchnick, (Morgan Kaufmann Publishers,)
- Crafting a Compiler with C C. N. Fisher and R. J. LeBlanc (Pearson Education)

Reference Books:

- Principles of Compiler Design V Raghavan (New Delhi Tata Mc Graw Hill)
- Compiler Design in C Allen I. Holub (New Delhi PHI Learning)
- Compiler Design : Java C Anuradha A. Puntambekar (Pune Technical Publication)

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Corse Code: 3IBCA 503

DATA WAREHOUSING & MINING

Corse Code: 3IBCA 503

COURSE OBJECTIVE:-

1. To understand the scope and necessity of Data Mining & Warehousing for the society.
2. To understand the designing of Data Warehousing so that it can be able to solve the root problems.
3. To understand various tools of Data Mining and their techniques to solve the real time problems. 4. To develop ability to design various algorithms based on data mining tools.

Syllabus:

Theory:

UNIT-I

Strategic Information Management - Need for strategic information, Decision support system, Knowledge discovery & decision making, Need for data warehouse, Definitions of Data warehousing and data mining, Common characteristics of Data warehouse, Data Marts, Metadata, Operational versus analytical databases, Trends and planning of Data warehousing.

UNIT-II

Data Modeling Strategy - Defining business requirements, Data modeling strategy, Fact tables, Dimensions, Star schema and other schemas, Multi dimensional data models, Data Cube presentation of fact tables, Using the Data warehouse, Designing tools for Data warehouse, OLAP models and operations

UNIT-III

Data Warehouse Architecture Components and, Implementation Options - Architectural components, Infrastructure: Operational & Physical, Extraction, Transformation and Loading, Components of an Oracle Data warehouse, Data Transformation Functions, DBA responsibilities, Capacity Planning.

UNIT-IV

Data Warehouse Implementation -Implementation of Data warehouse, Physical design: steps, considerations, physical storage, indexing, Performance Optimization, Data warehouse deployment activities, Data security, Backup and recovery concepts, Data warehouse Maintenance. Data cube computation, Indexing OLAP data, Efficient processing of OLAP query, OLAP server architectures.

UNIT-V

Data Mining - Basics of data mining, Related concepts, Data mining techniques, Data Mining Algorithms , Classification, Clustering and Association rules, Knowledge Discovery in databases (KDD) Process, Introduction to Web Mining

COURSE OUTCOMES:-

After study this student will be able to know about the

1. Process raw data to make it suitable for various data mining algorithms.
2. Discover and measure interesting patterns from different kinds of databases.
3. Apply the techniques of clustering, classification, association finding, feature selection and visualization to real world data.

CORSE CODE: 3IBCA 503

Text Books:

- Warehousing Fundamentals, by Paulraj Ponnian, John Wiley.
- Data warehousing with oracle by Sima yazdani – shirley s. Wong
- Principles of Data Mining David Hand & Heikki Mannila & Padhraic Smyth (New Delhi PHI)

Reference Books:

- Introduction to Data Mining Pang-Ning Tan & Michael Steinbach & Vipin Kumar (New Delhi Pearson)
- Data Warehousing, Data Mining, & OLAP Alex Berson & Stephen J. Smith (New Delhi Tata Mc)
- Data Mining Techniques Arun K Pujari (Hyderabad University)

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CORSE CODE: 3IBCA 504

MULTIMEDIA SYSTEMS

Corse Code: 3IBCA 504

COURSE OBJECTIVE:-

To learn the multimedia communication standards and compression techniques.

1. To provide the foundation knowledge of multimedia computing, e.g. media characteristics, compression standards, multimedia representation, data formats, multimedia technology development.
2. To provide programming training in multimedia computing, multimedia system design and implementations. To learn the Multimedia communication across the networks.

Syllabus:

Theory:

UNIT-I

Introduction of Multimedia - Introduction of Multimedia, Meaning of Multimedia, What is Multimedia? Identifying Multimedia Elements, Text, Images, Sound/Audio, Animation, Video, Areas of use for Multimedia.

UNIT-II

TEXT - Concept of Plain and formatted text, Advanced text formatting, Using Various Text Effect, RTF & HTML TEXT, Using text preparation tools and standard software, Conversion to and from of various text formats:, Object Linking and Embedding Concept, Basic of FONT DESIGN:, Overview of some fonts editing and designing tools

Images - Importance of Graphics in Multimedia, Graphics in Web Designing, During Web site designing remember the following basics Tips, Vector and Raster Graphics, Image Capturing Methods, Various Attributes of Images, Various Image File Formats (Features & Limitations), Graphics File Formats Conversion.

Processing Images with Common Software Tools - Overview of Photoshop, Resizing Images and Size Guide, Modify Color and effects, Layers, Text Editing, Converting an Image to Black and White, Restoring Old Photographs, CorelDraw, Paint shop Pro:, Features of Corel Paint Shop Pro Photo X2, getting started with paint shop pro, the clone brush, the flood fill tool, moving a layer, the deformation tool, masks

UNIT-III SOUND - Sound and it Attributes, Mono V/s Sterio Sound, Sound Channels, Sound and its Effect in Multimedia, Analog V/s Digital Sound, Basics of Digital Sound-Sampling, Frequency, Sound Depth, Channels, Sound on PC, Sound Standards on PC, Capturing and Editing Sound on PC, Overview and using some Sound Recording, Sound Editing Software, Overview of Various Sound File Formats on PC, WAV, MP3, MP4, Ogg Vorbose.

CORSE CODE: 3IBCA 504

UNIT-IV Animation - BASIC OF ANIMATION, Three Basic Types of Animation, Basic principles of animation, Uses of animation in multimedia, Effects of Resolutions, Pixel Depth, Image Size on Quality and Storage, Overview of 2D and 3D Animation Techniques and Software, 2D and 3D Animation Software, Introduction to Flash, Installation of Flash MX:, Using the Flash Interface, To create Motion Tween, GIF Animator.

UNIT-V

Video - BASICS OF VIDEO, Analog and Digital Video, How to use Video on PC:, Introduction to Graphics Accelerator Cards, Introduction to DirectX, Introduction to AV/DV and IEEE1394 Cards, Digitization of Analog Video to Digital Video, Interlacing and Non-Interlacing, Brief note on Various Video Standards, Introduction to Video Capturing Media & Instruments, Introduction to Digital Video Compression Techniques, Type of digital Video Compression Techniques, Introduction to Various Digital Video files formats

Video Editing & Movie Making Tool - Brief Introduction to Video Editing and Movie Making Tools, Video Editing Terminology, The Goals of Editing, Different Types of Video Editing, Movie Making Tools, QuickTime Video Editing Tool, Working with QuickTime Pro, Video for Windows, Capturing video, Adobe Premiere Pro, Working with Premiere, Using the Premiere Title Designer, Using Transitions in Adobe Premiere.

COURSE OUTCOMES:-

- To understand about various latest interactive multimedia devices, the basic concept about images and image formats.
- To understand about data compression techniques, image compression techniques like JPEG, video compression techniques like MPEG, and the basic concepts about animation.
  To develop an interactive multimedia presentation by using multimedia devices and identify theoretical and practical aspects in designing multimedia applications surrounding the emergence of multimedia technology.

Text Book:

- Multimedia: Making It Work (4th Edition) – by Tay Vaughan, Tata McGraw Hills.
- Multimedia in Action – James E Shuman – Vikas Publishing House.
- Multimedia Basics – Volume – 1 Technology, Andreas Holzinger, Firewall Media (Laxmi Publications Pvt. Ltd) New Delhi.

Reference Books:

- Principles of Multimedia Ranjit Parekh (New york. MC Graw Hill Co.)
- Comdex: Multimedia and Web Design Course Kit with CD Vikas Gupta (New Delhi Dreamtech)
- Practical Multimedia Course with CD Vishnu Priya Singh (New Delhi : Computech Publication)

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Corse Code: SHBA302

Communication Skill & Personality Development

Objective: To make the students understand the basics of personality, public speaking, language, Listening, conversation & writing skills, along with the communication process Syllabus

THEORY –

Unit- I:

Basics of Personality, Do's and Dont's in Personality, Salutations and Greetings, Presenting Yourself, Proper Introduction of Oneself.

Unit- II:

Administration- your work style, Overcoming Phobias, Public Speaking, General Etiquettes and Mannerism, Time Management, Attire, Attitude, Self Actualization, Magic of Positive Thinking.

Unit- III :

Tips of Preparing CV, Interviews tips.

Unit-IV:

Language Skill, Writing Skill, Speaking Skill, Listening Skill, Conversation Practice, Mysticism of Body Language, Basics of Grammar.

Unit- V :

Communication- Meaning, Functions, Channels, Process, Barriers and Interpersonal Skills.

PRACTICAL –

1. To present self introduction of yours.
2. Mock interview.
3. Group discussions.
4. SWOT analysis of self.
5. Extempore.
6. Debate.
7. Preparation of CV.
8. Role play.
9. Present a speech.
10. Make a power point presentation of communication.

Reference Books:

1. Business Communication, Universal Pub. Agra – Dr. Ramesh Mangal
2. English Grammar- Wren & Martin
3. Putting your best foot forward- Lt. Co. (Dr.) Pramod Deogirikar

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Outcome- After the completion of this subject the learners will understand the basics of personality, public speaking, language, Listening, conversation & writing skills, along with the communication process.

CORSE CODE: 3IBCA601

PHP, MYSQL

Corse Code: 3IBCA601

COURSE OBJECTIVE:-

1. To understand to develop web application using open source technologies
2. To understand PHP scripting language and deploying application on Apache Web Server
3. To understand Apache Web Server configuration
4. To understand MySQL database deployment for web applications Syllabus.

Syllabus:

Theory:

UNIT-I

Introduction to PHP & Creating your first PHP script., Introduction, Considering the Various Uses for PHP, Using PHP for web application, Using PHP for database applications, Using PHP with your file system, Using PHP for system commands, Understanding How PHP works, PHP as a general purpose language, PHP for the web, Keeping Up with changes in PHP, PHP 5, Previous versions of PHP., Introduction, Writing PHP statements, Adding PHP sections to HTML files, Writing PHP output statements, Documenting your scripts. ,

UNIT-II

Using variables in PHP scripts & Working with data., Understanding data types, performing arithmetic, Manipulating characters strings, Using dates and times. , Introduction Naming variables, Assigning values to variables, Removing variables, Using constants, Handing errors., Storing data in groups by using arrays, Introduction, Building arrays, Assigning values to arrays, Sorting arrays, Using Values in arrays, Building multidimensional arrays.,

UNIT-III

Controlling the flow of the script & Reusing PHP code, Introduction, Changing the order in which statements are executed, Setting up condition, Joining simple conditions to make complex conditions, Using conditions in conditional statements and loops, Writing if statements, Building and using loops for repeated statements, Breaking our of loops., Introduction, Including files in scripts, Understanding store for included files, Writing functions, Using functions.,

UNIT-IV

Object-Oriented Programming meets PHP, Introduction, Understanding object- oriented programming, Identifying objects, Writing Classes, Using Classes.,

The Basics of web application & Other web application Introduction, Understanding web site security, Displaying static pages, Collecting information form user with HTML forms, processing information received from users., Introduction, Passing information from page to page, using cookies, using hidden fields in HTML forms, Using HPP session functions, Adding java script to PHP scripts.

CORSE CODE: 3IBCA601

UNIT-V

Storing data with PHP, Introduction, Writing, and reading flat files, Exchanging data between PHP and other programs, Understanding database supports in PHP, Using PHP to interact with a database, Handling database-connection errors. Introduction to MySQL, Designing Databases, Basic SQL, Database Structures, Doing Advanced Queries, Advanced MySQL Concepts, Managing Users and Privileges, Backing Up and Restoring MySQL Databases.

COURSE OUTCOMES:-

After study this student will be able to understand the concept of Web Application Design and implementation. They will be able to identify the reason and importance of web application development and design.

Practicals:

1. Introduction to basic HTML tags.
2. Write a Program to check and print whether a given number is even or odd.
3. Write a program to compute net amount from the given quantity purchased and rate per quantity. Discount @10% is allowed if the quantity purchased exceeds 100.
4. Write a program to find largest among three numbers using ternary operators.
5. Write a program to print sum of digits of a given number. (using while loop)
6. Write a program to print Fibonacci series upto a given number.
7. Write a program to enter numbers till the user wants. At the end it should display the count of positive, negative and zeros entered. (Using do-while loop)
8. Write a function countWords ($str) that takes any string of characters and finds the Number of times each word occurs. You should ignore the distinction between capital and lowercase letters.
9. Create a form with one text field and submit buttons for string length, string reverse and uppercase, lowercase, string replace. Display the result accordingly.
10. Write a Menu-Driven program to implement a calculator which performs only addition, subtraction, multiplication and division. The operation should happen based on the user choice. (use switch case)

Text Books:

- Web Technologies ,Kogent learning solutions
- Beginner to intermediate PHP5, Nicolask

Reference Books:

- Web Enabled Commercial Application Development Using : HTML, JavaScript, DHTML and PHP
  Ivan Bayross (New Delhi BPB)
- The Complete Reference PHP Steven Holzner (New york. MC Graw Hill Co)
- Web Technologies : HTML, JavaScript , PHP, Java JSP, XML and Ajax Black Book Kogent Learning Solution Inc. (Dreamtech Press)

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CORSE CODE: 3IBCA602

INFORMATION TECHNOLOGY TRENDS

Corse Code: 3IBCA602

COURSE OBJECTIVE:-

1. To understand the principles and vocabulary of Information Technology.
2. To understand the mathematical principles underlying multimedia information technologies.
3. To understand the questions about the social, economic, and political contexts in which IT exists
4. To understand the cutting-edge technologies and trends such as those in the areas of wireless multimedia, computer security, digital audio, and high-performance computing.

Syllabus:

Theory:

UNIT-I

Introduction - Introduction, Parallel and Distributed Systems, Computer Networks Modern Business Management.

Distributed Systems -Distributed System, Managing Distributed Databases, Distributing the Processing and Storage Function, Transactions and Concurrency, Advantages and Disadvantages of DS , Flavors of Distributed Systems, Architectures of Distributed Systems, Security in Distributed Systems.

Modern Business Trends: E-Business & E-Commerce -INTRODUCTION, ONLINE SHOPPING, E-BUSINESS, E-Commerce, Buying and Paying Online, Electronic Payment System, Online Publishing.

Modern Business Management: E-SCM - Introduction, Supply Chain Management, E-Supply Chain Management, Components of Modern E-SCM, Major Trends in E-SCM, Example of E-SCM, Architecture of E-Supply Chain Models, E-SCM Process Integration, Supply chain management components integration, Globalization and E-SCM, E-Supply Chain Network, E-Supply Chain Management Framework.

Modern Business Management: E-CRM - Customer Relationship Management Concepts, How Technology can help in CRM, E-CRM Solutions, Advantages of E-CRM, E-CRM Capabilities, Data Mining and E-CRM, Example of E-CRM, Implementing an E-CRM System, E-CRM Framework, and Next Generation CRM.

UNIT-II

Virtual Reality - Introduction, History of Virtual Reality, Virtual Reality, Virtual Reality Application, Impact of VR , Simulated Reality, Virtual Reality : Hardware, Levels of VR Hardware Systems , VR Software Systems , Aspects of VR Program , World Space , World Database , Control Panels , Types of VR Systems , VR Challenges.

Artificial Intelligence - Introduction, Concept of AI, AI Applications, Intelligence, Artificial Intelligence, Intelligent Systems, Knowledge-based Systems, Knowledge-based Engineering

Expert Systems , Introduction, Background History, Concept of Expert Systems, Expert Systems Vs. Problem solving System, People involved in Expert Systems, The End User, The Knowledge Engineer, Features of Expert System, Building of the Expert System, Advantages and Disadvantages

of ES, ES Applications, Expert System Problem domain, Benefits and Limitations of Expert Systems, Examples of Expert Systems.

UNIT-III

Introduction to Big Data, Big data features and challenges, Problems with Traditional Large-Scale System, Sources of Big Data, Types of Data, HDFS Design & Goals, Understand Blocks and Configuration of block size, Block replication and replication factor. History of Hadoop, Available version Hadoop, Available Distributions of Hadoop (Cloudera, Hortonworks) , Architecture of Hadoop & Planning for cluster. Introduction to IOT, key features, advantages and disadvantages.IOT hardware and software, Technology and protocol of IOT.

UNIT-IV

Mobile Commerce , Mobile Commerce , Technology for Mobile Commerce, Wireless Communications and its Generations, Wireless Application Protocol (Wap), Other Wireless Technologies , GSM/CDMA Security Issues, Growth and Success Stories of M-Commerce, M-commerce in India.

Geographic Information Systems , Introduction, Geographic Information System , Components of a GIS, Working of GIS, Data for GIS, GIS and Related Technologies, Spatial Data Infrastructures, Maps and Map Data Handling , Traditional maps Vs. GIS, Functions of GIS , Planning for GIS , Implications of GIS , Virtual Globe, GIS Software.

UNIT-V

Introduction and Basic Concepts of Modern Communication and Telephony Technology, Introduction, Code Division Multiple Access, Wireless Local Loop, GSM (Global System for Mobile Communication), Voice Over IP, Bluetooth, Wi-Fi, ISDN.

Electronic Data Interchange, Introduction, Electronic Data Interchange, The Structure of EDI Systems, EDI Standards, Features of EDI, EDI Technology, Advantages of EDI, Barriers in adopting EDI, Drawbacks of EDI, New Trends in EDI.

COURSE OUTCOMES:-

After study this student will be able to know the

1. Familiarity with the foundations of basic information technologies.
2. The social, political and economic implications of IT.
3. Understand the difference between analog and digital technologies.
4. Understand how audio and images are digitized.

Text Books:

- Internet Web Technology : E-Commerce Nitin K. Naik (Indore Kamal Prakashan)
- Internet & E-Commerce A. Mansoor & Anurag Seetha (Mathura : Pragya Publication)
- Introduction to Artificial Intelligence & Expert Systems Dan W. Patterson (New Delhi : Phi Learning)

Reference Books:

- E-Commerce : AN Indian Perspections Joseph S.J. (New Delhi : Phi Learning)
- Understanding Big Data Zikopoulos Paul (MC Graw Hill Co)
- Principles of Artificial Intelligence Nils J. Nilsson (New Delhi : Narosa Pub)

CORSE CODE: 3IBCA603

EMBEDDED SYSTEMS

Corse Code: 3IBCA603

COURSE OBJECTIVE:-

- Students have knowledge about the basic functions of embedded systems.
- Students have knowledge about the basic structure of embedded systems
- Students have knowledge about the basic concepts of embedded systems
- Students have knowledge about the applications of embedded systems

Syllabus:

Theory

UNIT– I

Introduction to Embedded systems Embedded Systems Vs General Computing Systems, Classification of Embedded Systems, Major application areas of Embedded Systems, Purpose of Embedded systems ,Core of the Embedded system, Memory, Sensors and Actuators, Communication Interface, Embedded firmware, PCB and Passive Components, Characteristics and Quality attributes of a Embedded System .

UNIT – II

Design of Embedded Systems with 8bit Microcontrollers-8051 Factors for considering in selecting a Controller, Designing with 8051 microcontroller Different addressing modes supported by 8051, Instruction set for 8051 microcontroller. Fundamental issues in Hardware Software Co-Design, Computational models in Embedded Design.

UNIT – III

Embedded Hardware & Firmware Design and Development Analog &Digital Electronic components, VLSI & Integrated circuit design, Electronic Design Automation tools, PCB layout Design and its fabrication .Embedded firmware design approaches, Embedded firmware Development Languages, Programming in Embedded C. Integration and testing of Embedded Hardware and Firmware , Safe & robust Design, Reliability, Faults, errors & Failure, Functional Design, Architecture Design, Prototyping.

UNIT -IV

Embedded System Development Environment Integrated Development Environment (IDE), Types of files Generated on Cross-Compilation, Disassemble / Decompile, Simulators, Emulators and Debugging, Boundary Scan.

UNIT– V

Embedded Product Development Lifecycle (EDLC) and Trends in Embedded Industry What is EDLC, Objectives of EDLC, Different phases of EDLC, EDLC Approaches-Linear or waterfall model, Iterative Model, Prototyping/Evolutionary Model, and Spiral Model. Processor trends in Industry, Embedded OS Trends, Development Language trends Open Standards, Frameworks and Alliances, Bottlenecks.

CORSE CODE: 3IBCA603

COURSE OUTCOME:-

After completion of course students will be able to understand -

- To design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.

Text Books:

- The 8051 Microcontroller & Embedded Systems: Using Assembly and C with CD Ayala Kenneth J. , Gadre Dhananjay V (Cengage Learning)
- , Introduction to Embedded System:, Shibu (TMH)
- ,Embedded Systems :Design and Applications , Barrett (Pearson Education)

Reference Books:

- Embedded Systems: Design and Applications Steven F. Barrett & Daniel J. Pack (New Delhi Pearson Education)
- Embedded Systems: Architecture, Programming and Design Raj Kamal (New york. MC Graw Hill Co.)
- Embedded System Design : A Unified Hardware/Software Introduction Vahid Frank , Givargis Tony (Wiley India Ltd)

Chairperson
(Board of Studies)

Dean
(Academic Council)

(Registrar)
Seal

CORSE CODE: 3IBCA604

SOFTWARE ENGINEERING

Corse Code: 3IBCA604

COURSE OBJECTIVE:-

This course introduces the concepts and methods required for the construction of large software intensive systems.

1. It aims to develop a broad understanding of the discipline of software engineering
2. It seeks to complement this with a detailed knowledge of techniques for the analysis and design of complex software intensive systems.
3. It aims to set these techniques in an appropriate engineering and management context.
4. It provides a brief account of associated professional and legal issues.

Syllabus:

Theory:

UNIT-I

Introduction to software engineering - introduction, reusable software components, what is well engineered software? Programming and software engineering, what is software engineering? Goals of software engineering, software processes, software process models, process iteration, and other important software models.

UNIT-II

Software project management - project management, management activities, project planning, project scheduling, risk management, selecting staff, metrics used for measuring the software cost, cocoon model .

Software process and project metric - software quality, metrics for the analysis model, metrics for the design model, metrics for source code, metrics for testing.

Software project planning - introduction, software project planning, other planning activities, organization of the software project, management plan (spmp) document.

Software cost estimation - introduction, software cost factors, programmer's ability, product complexity, product size, required level of reliability, level of technology, decomposition technique, empirical estimation models, the structure of estimation models.

Software project requirements - software requirements, functional and non-functional requirements, user requirements, system requirements, software requirements document.

UNIT-III

Requirements engineering process - requirements engineering process, feasibility study, requirements elicitation and analysis, scenarios, requirements specification, ethnography, requirements validation, requirements management.

Software prototyping - software prototyping, prototyping in the software process, rapid prototyping techniques, user interface prototyping.

CORSE CODE: 3IBCA604

Analysis concept and modeling - analysis modeling, context model, data modeling concepts, cardinality and modality, flow oriented diagram, data dictionary Design concepts and principles - introduction, design within the context of software engineering, design process and design quality, design concepts, information hiding, functional independence, design classes, the design model, software patterns.

UNIT-IV

Software architecture - software architecture data design, architectural styles and patterns, analyzing alternative architectural designs, mapping the requirements into software architecture, architectural design. Designing the user interface - user interface, input design, end-user considerations for input design, output design, design principles, screens, forms, menu, messages, importance of code, data codification schemes, designing code less systems

Software quality management, software quality management, role of a software quality manager, iso quality model, quality assurance standards, quality planning, quality control, software reviews, software reliability.

UNIT-V

Verification and validation - verification and validation, software testing, verification and validation planning, software inspections, automated static analysis, clean room software development. Software testing models - software testing fundamentals, black-box and white-box testing, white-box testing, basis path testing, control structure testing, black-box testing, object-oriented testing methods.

Software testing strategies - the strategic approach, the software testing strategy, strategic issues, unit testing, integration testing, validation testing, system testing, test automation

Computer aided software engineering (CASE) - computer aided software engineering (CASE), case workbenches, integrating case environment, need of software reuse:, types of reuse, reuse.

COURSE OUTCOMES:-

Carry out an evaluation and selection of projects against strategic, technical and economic criteria and use a variety of cost benefit evaluation techniques for choosing among competing project proposals. Approach project planning in an organized step by step manner and select an appropriate process model produce an activity plan for a project.

- Identify project risks, monitor and track project deadlines and produce a work plan and resource schedule.

Plan the evaluation of a proposal or a product and manage people in software environments. Understand the importance of teamwork and quality management in software project management. Apply these project management tools and techniques in a diversity of fields such as new product and process development, construction, information technology, health care, and applied research.

Text Books:

- Software Engineering (H) Ashish Tiwari (Indore Kamal Prakashan)
- Software Engineering Banzal Sashi , (Ram Prasad)
- Fundamentals of Software Engineering Mall Rajib (PHI Learning)

CORSE CODE: 3IBCA604

Reference Books:

- An Integrated Approach To Software Engineering By Pankaj Jalote (New Delhi Wiley India Ltd)
- Software Engineering: A Practitioner`s Approach Roger S. Pressman (New york. MC Graw Hill Co)
- Software Engineering Ian Sommerville (New Delhi Pearson Education)

Chairperson
(Board of Studies)

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(Registrar)
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