VELS

INSTITUTE OF SCIENCE, TECHNOLOGY & ADVANCED STUDIES (VISTAS)

(DEEMED TO BE UNIVERSITY Estd. u/s 3 OF THE UGC ACT, 1956)

NAAC ACCREDITED

PALLAVARAM - CHENNAI - INDIA

SCHOOL OF COMPUTER SCIENCES

DEPARTMENT OF COMPUTER APPLICATIONS

BCA-HONS

PROGRAMME SPECIFIC OUTCOME

BCA-Hons is a 3 +1 year Information technology course. This programme a job oriented application software course which enables student to perform multiple related tasks like enterprise software, accounting software, office suite and graphics software in the first three years. In the final year (4^{th} year), student will undergo internship program at leading IT industries/ITES companies grooming them to be industry ready. After successful completion of internship training program the student will be placed in companies. They can seek jobs both in public and private sectors, banking, insurance, accounting, stock markets, e-commerce and marketing. B.C.A. Hons. Provides substantial understanding of concepts in key areas of Computer Science like

- Developer - Database Applications
- Information Management Applications
- Web Applications Developer
- Assistant Manager - Application Support
- Remote Services Application Software Developer
- Energy Metering Application

- Business Application Manager
- Application Developer Mainframe

School of Computing Sciences

BCA-HONS

Board of Studies Members

Sl.No	Name & Address	Designation
1.	**Dr.P.Swaminathan**, Dean, School of Computing Sciences, Vels University, Chennai.	**Chairman**
2.	**Dr.P.Mayilvahanan**,Professor, Department of Computer Applications, School of Computing Sciences, Vels University, Chennai.	**Internal Board Member**
3.	**Dr.S.Prasanna**, HOD, Department of Computer Applications, Vels University, Chennai.	**Internal Member**
4.	**Dr.S.Sujatha**, HOD, Department of Information Technology, School of Computing Sciences, Vels University, Chennai.	**Internal Member**
5.	**Dr.K.Kalaiselvi**, HOD, Department of Computer Science, School of Computing Sciences, Vels University, Chennai.	**Internal Member**
6.	**Dr.K.R.Ananthapadmanaban** Professor & HOD, Department of Computer Science, SRM Arts and Science College, Chennai.	**External Member**
7.	**Dr.P.Magesh Kumar**, Calibsoft Technologies Pvt Ltd., Chennai.	**Industry Member**
8.	**Dr.JothiVenkateswaran**, HOD, Department of Computer Science, Presidency College, Chennai.	**Special Invitees**
9.	**Mr.R.Balamurugan**, SCOPUS Ltd, Chennai.	**Alumni Member**

VELS UNIVERSITY

VELS INSTITUTE OF SCIENCE, TECHNOLOGY & ADVANCED STUDIES (VISTAS)

(Deemed to be University Estd. u/s 3 of the UGC Act, 1956)

NAAC ACCREDITED

PALLAVARAM - CHENNAI - INDIA

B.C.A.(Hons)

Curriculum and Syllabus

(Based On Choice Based Credit System)

Effective from the Academic Year

2015 – 2016

School of Computing Sciences

Department of Computer Applications

VELS UNIVERSITY

DEGREE OF BACHELOR OF COMPUTER APPLICATIONS

(B.C.A (Hons))

REGULATIONS

(W.e.f., 2015-2016) onwards

1. Eligibility Criteria for Admission

Any candidate who has passed the under-mentioned board examinations (State/CBSE/Metric with 55% and above) recognized board as equivalent thereto provided they have undergone the course under 10+2 or 11+1 pattern, shall be eligible for admission to the B.C.A(Hons) Degree Course. The eligible candidates have to undergo an entrance exam.

2. Duration of the Course

The course duration shall be three years consisting of six semesters and a value-added GNIIT certification with additional one year Internship (stipend) program. In order to be Eligible for the award of the degree the candidate shall successfully complete the course in a Maximum period of five years reckoned from the date of enrollment for the first semester of the course.

3. Structure of the Course and Evaluation Pattern

The duration of University examination of theory and practical subjects shall be 3 hours. The maximum mark for each theory is 60to40 for Continuous Internal Assessment (CIA) and 60 for University Examination. The maximum mark for each practical is 100 to 40 for Continuous Internal Assessment and 60 for University Examination. The curriculum comprises of NIIT papers.The components of the CIA are internal test, seminar, assignment etc., NIIT will also conduct online assessments/examination to get the credit points.

For the conduct of University Examination in Practical subjects the University will appoint one external examiner and one internal examiner who shall normally be the concerned practical in-charge. The University will set the questions and distribute to the department. The examiners will conduct the examinations and award the marks on the same day and forward to the University. The Head of the department will coordinate and provide the laboratory and other facilities for conducting the examination.

B.C.A.(Hons)

CURRICULUM

I SEMESTER

Category	Code	Course	Hour / Week			Credits
			Lecture	Tutorial	Practical	
CORE	15BHC001	LOGIC BUILIDING AND EFFECTIVE PROBLEM SOLVING& PERSONAL COMPUTING & NE(PCNE)	5	0	0	4
CORE	15BHC002	OBJECT ORIENTED PROGRAMMING USING C#	5	0	0	4
CORE	15BMA001	MATHEMATICS – 1	4	0	0	4
CORE	15BHC004	PRACTICAL – I C#&PCNE	0	0	6	2
AECC	15LTA001/ 15LHN001/ 15LFR001	ABILITY ENHANCEMENT COMPULSORY COURSES - I	5	0	0	4
AECC	15LEN001	ENGLISH PAPER- I	5	0	0	4
		Total	**24**	**0**	**6**	**22**

II SEMESTER

Category	Code	Course	Hour / Week			Credits
			Lecture	Tutorial	Practical	
CORE	15BHC005	DATABASE PROGRAMMING WITH RDBMS	5	0	0	4
CORE	15BHC006	INFORMATION ANALYSIS AND DATA REPORTING TECHNIQUES USING ADVANCED EXCEL	5	0	0	4
CORE	15BMA002	MATHEMATICS – II	4	0	0	3
CORE	15BHC008	PRACTICAL – II RDBMS & ADVANCE EXCEL	0	0	6	2
AECC	15LTA002/ 15LHN002/ 15LFR002/	ABILITY ENHANCEMENT COMPULSORY COURSES - II	5	0	0	4
AECC	15LEN002	ENGLISH PAPER –II	5	0	0	4
		Total	**24**	**0**	**6**	**21**

III SEMESTER

Category	Code	Course	Hour / Week			Credits
			Lecture	Tutorial	Practical	
CORE	15BHC009	INTRODUCTION TO APP DEVELOPMENT	5	0	0	4
CORE	15BHC010	FINANCIAL ACCOUNTING	5	0	0	4
CORE	15BHC011	PRACTICAL – III APP DEVELOPMENT	0	0	6	4
SEC	15LEN003	SKILL ENHANCEMENT COURSES –I	5	0	0	4
SEC	15EVB261/ 15NSS255	SKILL ENHANCEMENT COURSES -II	2	0	0	2
GE	15----------	GENERIC ELECTIVE COURSES -I	2	0	0	2
DSE	15----------	DISCIPLINE SPECIFIC ELECTIVE-I	5	0	0	4
		Total	**24**	**0**	**6**	**24**

IV SEMESTER

Category	Code	Course	Hour / Week			Credits
			Lecture	Tutorial	Practical	
CORE	15BHC012	DATA STRUCTURE AND ALGORITHMS	5	0	0	4
CORE	15BMA003	STATISTICAL AND NUMERICAL METHODS	5	0	0	4
CORE	15BHC013	PRACTICAL – IV HTML5 / DATA STRUCTURES	0	0	6	4
DSE	15----------	DISCIPLINE SPECIFIC ELECTIVE-II	5	0	0	4
SEC	15LEN004	SKILL ENHANCEMENT COURSES -III	5	0	0	4
AECC	15EVS201	ENVIRONMETAL STUDIES	2	0	0	2
GE	15----------	GENERIC ELECTIVE COURSES –II	2	0	0	2
		Total	**24**	**0**	**6**	**24**

V SEMESTER

Sl. No	Code	Course	Hour / Week			Credits
			Lecture	Tutorial	Practical	
CORE	15BHC014	WEB APPLICATION USING ASP MVC	5	0	0	4
CORE.	15BHC015	PRACTICAL – V WEB APPLICATION USING ASP MVC	0	0	4	2
CORE	15BHC016	PROGRAMMING IN JAVA	5	0	0	4
CORE	15BHC017	PRACTICAL – V JAVA	0	0	6	4
DSE	15----------	DISCIPLINE SPECIFIC ELECTIVE-III	5	0	0	4
DSE	15----------	DISCIPLINE SPECIFIC ELECTIVE-IV	5	0	0	4
		Total	**20**	**0**	**10**	**22**

VI SEMESTER

Sl. No	Code No.	Course	Hour / Week			Credits
			Lecture	Tutorial	Practical	
CORE	15BHC018	WEB APPLICATION USING SERVLETS AND JSP	5	0	0	4
CORE	15BHC019	COMPUTER NETWORKS	4	0	0	3
CORE	15BHC020	PRACTICAL – VI WEB APPLICATION USING SERVLETS & JSP	0	0	6	4
CORE	15BHC021	MINI PROJECT	0	0	6	4
DSE	15----------	DISCIPLINE SPECIFIC ELECTIVE -V	4	0	0	3
DSE	15----------	DISCIPLINE SPECIFIC ELECTIVE –VI	5	0	0	4
		Total	**18**	**0**	**12**	**22**

VII SEMESTER

Sl. No	Code	Course	Hour / Week			Credits
			Lecture	Tutorial	Practical	
CORE	15BHC022	INTERNSHIP PROGRAMME IN INDUSTRY FOR 6 MONTHS(provided by NIIT)	0	0	0	10
		Total	**0**	**0**	**0**	**10**

VIII SEMESTER

Sl. No	Code	Course	Hour / Week			Credits
			Lecture	Tutorial	Practical	
CORE	15BHC023	INTERNSHIP PROGRAMME IN INDUSTRY FOR 6 MONTHS(provided by NIIT)	0	0	0	10
		Total	**0**	**0**	**0**	**10**

Total Credits to complete the course : 155

Total Marks : 3800

SCHEME OF EXAMINATION

Course	Duration in Hours	Internal Marks	External Marks	Total	Passing Minimum	
					External	Aggregate
All Theory And Practical Courses	3 hrs	40	60	100	24	40
Mini Project	3 hrs	40	60	100	24	40
Internship Work	-	50	100+50	200	-	100

5. Passing Requirements

a) For all subjects the passing requirement is as follows: i) candidate securing not less than 40% of marks in University examination (U.E) and not less than 40% in aggregate of the total maximum marks prescribed in each theory & practical, and in Project work minimum 40% each in dissertation and Viva-Voce examination and not less than 40% in aggregate of the total maximum marks prescribed, shall be declared to have passed in the respective subject.

b) A candidate who passes in all subjects and in the project work earning 120 credits within the maximum period of six years reckoned from the date of admission to the course shall be declared to have qualified for the degree.

c) The relative overall performance of the candidate shall be determined by the overall percentage of Marks obtained in all subjects evaluated as follows:

$$AM = \frac{\text{Sum of all marks obtained}}{\text{Sum of maximum marks}} \quad X\ 100$$

This score shall be entered in the transcript given to the candidate on successful completion of the course calculated to two decimal points.

6. Requirements for proceeding to Subsequent Semesters:

a) If a candidate fails in a particular subject (Other than Project work) he/she may reappear for the University examination in the subject in subsequent semesters and obtain passing marks.

b) In the event of failure in Project Work, the candidate shall reregister for Project Work and redo the Project Work in a subsequent semester and resubmit the dissertation afresh for evaluation. The internal assessment marks shall be freshly allotted in this case.

Provided in the case of candidate who has attendance of less than 75% overall in a semester shall not be permitted to take the University examination. However, it shall be open to the Academic Registrar/Dean to grant exemption to a candidate if he/she possess 65% or more attendance but less than 75% after paying the required condonation fee to the University for valid reasons and such exemptions should not under any circumstances be granted for attendance below 65%. Candidates who have less than 65% and those who have less than 75% but have not got the exemption as above, has to repeat the semester from the next academic year.

7. Classification of successful candidates

a) A Candidate who qualifies for the Degree and secure (CIA + External) not less than 75% shall be declared to have passed the examination in FIRST CLASS WITH DISTINCTION provided he/she has passed the examination in every subject he/she has registered as well as in the project work in the first appearance.

b) A candidate who qualifies for the degree as per the regulations for passing requirements and secures a weighted average of not less than 60% shall be declared to have passed the examination in FIRST CLASS.

c) All other successful candidates shall be declared to have passed in SECOND CLASS.

d) Only those candidates who have passed all the papers including practical and project work in the first appearance shall be considered for the purpose of RANKING.

8. Class of Honours

The class of honours awarded shall be determined on the performance of the candidate. The Degree of Bachelor of Computer Applications with Honours may be awarded on satisfying the following criteria

(i) The candidate should clear all the theory, Practical, Project at the end of third year.

(ii) Apart from three years, the candidate should undergo additional one year compulsory internship program.

(iii) The fourth year internship credit will be added in the mark statement on the submission of the internship report.

9. Candidates Who Fail to Obtain Honors

A candidate fails to obtain BCA (Hons) if he/she has not cleared theory, practical, project work at the end of the third year. Such Candidates may be awarded

(i) General BCA degree

(ii) GNIIT Certificate after completing additional one year compulsory internship program.

(iii)The fourth year internship credit will not be added in the mark statement.

10. Procedure in the Event of Failure:

a) If a candidate fails in a particular subject (other than project work) he/she may reappear for the University examination in the supplement exam in the final year or subsequent semesters and obtain passing marks.

b) In the event of failure in the project work the candidate shall register for project work and redo the project work in a subsequent semester and resubmit the dissertation afresh for evaluation. The internal assessment marks shall be freshly allotted in this case.

c) The Candidate should clear all the papers to undergo internship program in the fourth year.

12. Pattern of question paper: **Total: 100Marks**

Part A Definition Short question: (10* = 10 Marks)

One question from each Unit

Part B Short Essay: (4*5=20 Marks)

Answer any 4 out of 8 questions covering all units

Part C Descriptions/Understanding: (2 *15= 30 Marks)

Answer any 2 out of 4 questions covering all units

List of Discipline Specific Elective Courses (DSE)

S.NO	CODE	COURSE CODE
1	15BHC101	Essential Of Information Technology
2	15BHC102	Software Project Management
3	15BHC103	Internet Of Things
4	15BHC104	Mobile Computing
5	15BHC105	Html 5
6	15BHC106	Cloud Computing
7	15BHC107	Management Information System
8	15BHC108	Organizational Behaviour
9	15BHC109	Object Oriented Analysis And Design
10	15BHC110	Network Security
11	15BHC111	Ad Hoc Networks
12	15BHC112	Big Data Analytics
13	15BHC113	Unix Programming
14	15BHC114	Artificial Intelligence
15	15BHC115	Software Testing
16	15BHC116	Data warehousing and Data Mining
17	15BHC117	Distributed Computing
18	15BHC118	Object Oriented Software Engineering
19	15BHC119	Software Quality and Assurance
20	15BHC120	Client / Server Computing
21	15BHC121	Professional Skills I
22	15BHC122	Professional Skills II
23	15BHC123	Professional Skills III

24	15BHC124	Software Engineering Essentials -I

List of Generic Elective Courses (GE)

S.NO	CODE	COURSE
1	15BHC151	Enterprise Resource Panning
2	15BHC152	Introduction to Information Technology
3	15BHC153	Internet and its applications
4	15BHC154	Web technology
5	15BHC155	Introduction to PHP
6	15BHC156	Business Intelligence
7	15BHC157	E-Commerce
8	15BHC158	Software Project Management
9	15BHC159	Open Source Technology

List of Ability Enhancement Compulsory Courses (AECC)

S.NO	CODE	COURSE
1	15LTA001 15LHN001 15LFR001	TAMIL I HINDI I FRENCH I
2	15LEN001	Foundation Course English – I
3	15LTA002 15LHN002 15LFR002	TAMIL – II HINDI – II FRENCH – II
4	15LEN002	Foundation Course English – II
5	15EVS201	Environmental Studies

List of Skill Enhancement Courses (SEC)

S.NO	CODE	COURSE
1	15LEN003	ENGLISH PAPER - III
2	15NSS255	NSS PAPER – I
3	15LEN004	ENGLISH PAPER - IV

SEMESTER I

15BHC001LOGIC BUILDING AND EFFECTIVE PROBLEM SOLVING& PERSONAL COMPUTING & NE (PCNE) 5 0 0 4

Course objective: To develop the students logical thinking and to solve problems effectively. Develop the technical skill and programming skill and to make the students to manage the situation effectively.

UNIT I INTRODUCTION OF PROGRAMMING CONCEPTS 20

Introduction of programming concepts-Input, process and output-Programs and programming Languages-Tools Used in problem Solving - Representing the Programming logic Using Flowcharts-Problem Solving Using Flowcharts - Representing Decision and Repetition Processes in a Flowchart - Representing the Programming logic Using Flowcharts-Problem Solving Using Flowcharts -Representing Decision and Repetition Processes in a Flowchart.

UNIT II PROGRAMMING LOGIC USING PSEUDOCODE 20

Representing the Programming Logic Using Pseudocode-Problem Solving Using Pseudocode-Variables and Constants-Data Types-Using Operators-Conditional Execution - Understanding Iterations and Modular Programming-Implementation Iterative Processes-Modular Approach to programming-Dividing Programs into Modules-Types of modules - Working with Large Volumes of Data-Working with Arrays-declaring an array-Initializing and Assigning Values to an Array-Displaying the Array values -Manipulation Arrays Using Loops.

UNIT III COMPUTER AT GLANCE 20

Computers at Glance – Route – System Unit – Information Superhighways – Internet – Connect to internet – Access website – Binary Number System – Number conversion – Anatomy of digital devices.

UNIT IVNETWORKS **20**

Introduction to networks – Classification of Network Architecture – Network Topologies - Network Media – Network Operating System -Introduction to the OSI Model – Introducing the TCP/IP Protocol Stack.

UNIT V RESOURCES IN A NETWORKS **20**

Identifying Resources in a Network – IPV4 Addressing – IPV6 Addressing – Accessing Shared Folders – Accessing Network Printer – Accessing a Machine Remotely – Securing Networking – Identifying Security Threats - Network Security Threats – Different types of attacks – Authentication – Authorization – Data Encryption – Auditing – Intrusion Detection Systems.

TOTAL: 100 HOURS

References:

www.niitstudent.com

This Course is offered through collaboration with NIIT Limited, Chennai. The course content can be viewed through the above mentioned website.

Course Outcome:

CO1. Identify components and working of a personal computer (PC).

CO2. Identify the requirements for connecting and working on the internet.

CO3. Troubleshoot PCs and its peripherals and the internet.

CO4. Identify various ways of representing numbers in computers.

CO5. Identify components and working of next generation computing devices such as Smart phones, Tabs, Ultra Notebooks.

CO6. Identify the network resources.

CO7. Identify the security issues.

15BHC002 OBJECT ORIENTED PROGRAMMING USING C# 5 0 0 4

Course objective:

To educate the student about basics of OOPs, basics components of dot net frame work working with classes and methods, threads and delegates.To make the students to work with multi theread objects.

UNIT 1 INTRODUCTION TO C#- 20

Activity:Creating Classes-Using Variables-Writing and Executing a C# Activity:Writing and Executing a c# Program-Summary-Exercises. Operators and Programming Constructs-Using Various Operators-Using Conditional Constructs Activity: Displaying colored Output-Using Loop Constructs-Activity: Fibonacci Series Using Loop with Constructs-Summary-Exercises.

UNIT IIWORKING WITH CLASSES MEMEBERS 20

Working with Classes Members-Working with Attributes and Method-Activity: Swapping Two Numbers by Using Methods with parameters-Working with constructors and destructors-Activity: Counting the Number of Objects of a class by Using Static Functions-Working with Properties-Summary-Exercises. Creating value Types and Reference Types-Describing Memory Allocation-Using Structures-Using Enumerations-Implementation Arrays-Activity: Word Puzzle-Implementing Indexers-Using Collections-Implementing Generics-Summary-Exercises.

UNIT III EXTENDING EXISTING CLASSES 20

Extending Existing Classes-Implementing Inheritance-Using Abstract Classes-Using Sealed Classes-Using-Interfaces-Activity: Order-processing System Using Abstract Classes-Summary-Exercises. Implementing Function Overloading-Activity: Displaying Days using Function Overloading-Implementing Operator overloading-Activity: Overloadingan Operator-Implementing Overriding-Summary-Exercises.

UNITIV FILE INPUT AND OUTPUT 20

File Input and Output-Implementing the File and Output Operations-Implementing Reading and Writing the Text Files-window Implementing Reading and Writing Binary Files-Implementing the Windows file System-Summary-Exercises. Exception Handling-Describing

Exceptions-Handling Exceptions for Arrays Beyond Limit-Implementing the User-defined Exceptions-Summary-Exercises.

UNIT VMULTITHREAD APPLICATIONS **20**

Creating Multithread Applications-Implementing Threads-Implementing Threads Life Cycle-Activity:TypoMeterGame-Activity:Hangman Game-Implementing Multithreading-Identifying the Thread prior-Using Synchronization in Threads-Identifying communication processes-Summary-Exercises. Delegates and Events-Implementing Delegates-Working with Events-Activity: Attendance Log-Summary-Exercises. Attributes and Reflection-Introducing Attributes-Retrieving Metadata Using Reflection-Activity: Creating and querying custom Attributes Information-Summary-Exercises.

TOTAL: 100 HOURS

References:

www.niitstudent.com

www.c#corner.com

www.msdn.com

This Course is offered through collaboration with NIIT Limited,Chennai.The course content can be viewed through the above mentioned website.

Course Outcome:

CO1. Understand the use of C# basics, Objects and Types, Inheritance.

CO2. Develop, implement and creating Applications with C#.

CO3. Implement polymorphism

CO4. Implement file input and output operations

CO5. Handle expectations

CO6. Create multithread applications

CO7. Work with delegates and events

CO8. Use attributes and reflection

CO9. Display proficiency in C# by building stand-alone applications in the .NET framework using C#.

15BMA001 MATHEMATICS-I 4 0 0 3

Course objective: To develop the skills of the students in the areas of Trigonometry, Set Theory, Calculus and Algebra**.** The course will also serve as a prerequisite for post graduate and specialized studies and research.

UNIT I TRIGONOMETRY 12

Introduction – Angles – Expansions of $\sin n\theta$ $\cos n\theta$,$\tan n\theta$. Expansion of $\sin\theta$, $\cos\theta$, $\tan\theta$, interms of θ- Simple problems.

UNIT II SET THEORY12

Sets – Operations on sets – Relations – Relations and functions: Equivalence relations – Partial order relation.

UNIT III MATRICES12

Introduction-Basic operations-Symmetric-skew symmetric-Hermitian-Skew Hermitian – Unitary-orthogonal-Inverse of a matrix -Solution of linear system(Cramer's rule)- Finding the Eigen roots and Eigen vectors of a matrix-Cayley Hamilton theorem(without proof)

UNIT IV THEORY OF EQUATIONS 12

Polynomial equations with real coefficients, irrational roots, complex roots, symmetric functions of roots, Transformation of equation by increasing or decreasing roots by a constant, reciprocal equations, Newton's method to find the root approximately.

UNIT V DIFFERENTIAL CALCULUS 12

Differentiation – Successive differentiation – Partial differentiation – Maxima and Minima of functions of two variables.

TOTAL: 60 HOURS

Text Books:

1. P. Kandaswamy and K.Thilagavathy, Allied Mathematics paper I, 1st Semester, S.Chand Publishing Pvt. Ltd. 1st Edition, 2003.

References:

1. P.R. Vittal, Allied Mathematics, Margham Publications, 4th Edition 2009.
2. A. Singaravelu, Allied Mathematics, Meenakshi Agency, 2007.

15BHC004 C SHARP & PCNE LAB 0 0 6 2

Course objective: This course provides an exhaustive coverage of C# programming language features like Object-oriented Programming, Inheritance, Interfaces, Exception Handling, Reflection, Standard I/O programming, File Handling, Generics, Windows Application and to have knowledge in word and Excel

LIST OF EXPERIMENTS

1. Displaying weekdays by press the number.
2. Leap year.
3. Arithmetic operations using static members.
4. Finding duplicate character in an array.
5. Assigning value to string array using indexer.
6. Perform insertion, remove & sort and reverse using array methods
7. Performing addition and concatenation using generics.
8. Binary operator overloading.
9. Formatting the content
10. Mail merge
11. Calculating total and average in excel
12. Conditional formatting in excel.

TOTAL: 48 HOURS

15BHC005 DATABASE PROGRAMMING WITH RBDMS 5 00 4

Course objective :
Understand the role of a database management system of an organization. Understand basic database concepts, including the structure and operation of the relational data model. Construct simple and moderately advanced database queries using structured Query Language (SQL).

UNIT I INTRODUCTION TO RELATIONAL MANAGEMENT SYSTEM (RDBMS) 20

RDBMS: Recorded Lectures: - ER Model - Using the Intersect, Product, and Union Operators-- Monitoring Performance by Using Database Engine Tuning Advisor- Using CDC- What is Information Analysis- Preparing Data for Analysis- Identifying the Different Types of Reports and Formats.

UNIT IIQUERYING DATA USING SQL SERVER (QDUS) - I 20

Recorded Lectures: - SQL Server Integration with the .NET Framework- Types of SQL statements- Identifying Data types-Recorded Lectures: - Using String and Date Functions- Using Mathematical, Ranking, and System Functions- Summarizing and Grouping Data.

UNIT IIIRDBMS PROJECT TOPIC ACTIVATION FOR THE PROJECT 20

RDBMS: Recorded Lectures: - Understanding the First Normal Form and Second Normal Form- Understanding the Third Normal Form and Boyce-Codd Normal Form-- Using Nested Sub queries and Apply Operator- Working with Temporary Result Sets.

UNIT IVDATABASE PROGRAMMING WITH RDBMS - USING CONVERSION, RANKING, AND ANALYTICAL FUNCTIONS 20

QDUS - I: QDUS - II: Recorded Lectures: - Storing Data in a Table- Updating and Deleting Data in a Table-Creating and Managing Views- Indexing Views- Configuring and Searching Data Using Full-Text Search- Creating Parameterized Stored Procedures+ Project (On Previous Semesters Skills)

UNIT V DATABASE PROGRAMMING WITH RDBMS - SELECT STATEMENT AND HIERARCHICAL DATA 20

QDUS - II Recorded Lectures:- Creating and Managing Views- Indexing Views- Configuring and Searching Data Using Full-Text Search- Creating Parameterized Stored Procedures+ Project (On Previous Semesters Skills) Database Programming with RDBMS - Catalog Views

and System Stored Procedures:QDUS - II:, Best Practices in KB Recorded Lectures:- Creating Transactions - Resolving Deadlocks.

TOTAL: 100 HOURS

References:

http://msdn.microsoft.com/en-us/library/ms144275.aspx

http://msdn.microsoft.com/en-us/library/hh272686%28v=vs.103%29.aspx

http://msdn.microsoft.com/en-us/library/ms174318.aspx

http://msdn.microsoft.com/en-us/library/ms191500%28v=SQL.105%29.aspx

This Course is offered through collaboration with NIIT Limited,Chennai.The course content can be viewed through the above mentioned website.

Course Outcome:

CO1. Apply the concepts of normalization and denormalization while designing a database.

CO2. Knowledge of RDBMS concepts.

CO3. Map an entity-relational ship diagram to tables

CO4. Normalize and de-normalize data in tables

CO5. Identify SQL Server tools.

CO6. Query data from multiple tables.

CO7. Implement indexes, views, and full-text search

CO8. Implement stored procedures and functions

CO9. Implement triggers and transactions

15BHC006 INFORMATION ANALYSIS AND DATA REPORTING TECHNIQUES USING ADVANCED EXCEL **5 0 0 4**

Course objective:To educate the student about different types of reports generated during data analysis and representing data in a graphical format and different tools to perform data analysis and automation of data presentation.

UNITI INTRODUCTIONOF INFORMATION ANALYSIS **20**

Introduction of information analysis – Preparing Data for analysis, process and output-Identify the report type and their Formats – Tools for creating Report – Report Creation – Problem Solving-Exploring-Excel

UNIT II PROCESSING DATA **20**

Processing-Data-Gathering-Data-Arranging Data in tabular form-formatting data-processing data-data forms - calculations and types-performing basic calculations-performing financial calculations

UNIT III DATA AT MICROLEVEL **20**

Summarizing data- Summarizing data at Micro Level – Summarizing data at Micro Level-Analyzing Data for decision making – projecting differences in data – charting data Fluctuation – charting data Trend

UNIT IV IF ANALYSIS **20**

Performing What-IF Analysis – using scenario manager – using Goal Seek – Using Solver-loading data from various – populating data from Text File – from internet – from various databases-Transferring data for Presentation purposes

UNITV COLLABORATION **20**

Collaboration with other users – Protecting Password Protection – Allowing Simultaneous information access – Automating Tasks –Recording a task – Execute Task – customize the Automated tasks – Editing the Task

TOTAL: 100 HOURS

References:

www.niitstudent.com

This Course is offered through collaboration with NIIT Limited,Chennai.The course content can be viewed through the above mentioned website.

Course Outcome:

CO1. Performing basic and financial calculations in Excel

CO2. Prepare statistical data.

CO3. Prepare graphs and statistics.

CO4. Prepare Data for analysis

CO5. Perform What-IF Analysis , scenario manager, Goal Seek on data

CO6. Allow Simultaneous information access in data

CO7. Project differences in data

CO8. Execute Task and customize the Automated tasks

15BMA002 MATHEMATICS-II 4 0 0 3

Course Objective: To impart the knowledge of Integral calculus, Differential Equations, Fourier series and Laplace transform. The course will also serve as a prerequisite for post graduate and specialized studies and research.

UNITI INTEGRAL CALCULUS 12

Integral calculus: Integration – Definite integrals – Bernoulli's formula -Reduction formula for $\int sin^n x dx, \int cos^n x dx, \int tan^n x dx$, $\int x^n e^{ax} dx$.

UNITII ORDINARY DIFFERENTIAL EQUATIONS 12

Ordinary differential equations: First order of higher degree equations – Second order and non-homogenous linear differential equations with constant coefficient – Second order linear differential equations with variable coefficients.

UNITIII PARTIAL DIFFERENTIAL EQUATIONS 12

Formation of partial differential equations by eliminating arbitrary constants and arbitrary function- Solutions of standard types of first order equations- f(p,q)=0; f(x,p,q)=0, f(y,p,q)=0, f(z,p,q)=0, z = px +qy +f(p,q) -Lagrange method of solving linear partial differential equation

Pp +Qq = r.

UNIT IV FOURIER SERIES **12**

Fourier series of periodic functions on the interval [c,c+2π] –Even and Odd functions- Half range series.

UNIT V LAPLACE TRANSFORM **12**

Laplace transformation: Definition, Laplace transform of basic trigonometric, exponential and algebraic functions - Inverse Laplace transform- Solving differential equation of second order with constant coefficients using Laplace transform

TOTAL: 60 HOURS

Text Books:

1. P. Kandaswamy and K.Thilagavathy, Allied Mathematics paper II, 2nd Semester, S.Chand Publishing Pvt. Ltd. 1st Edition, 2004.

References:

3. P.R. Vittal, Allied Mathematics, Margham Publications, 4th Edition 2009.
4. A. Singaravelu, Allied Mathematics, Meenakshi Agency, 2007.

15BHC008 RDBMS &ADVANCED LAB 0 0 6 2

Course Objective: The major objective of this lab is to provide a strong formal foundation in database concepts, technology and practice to the participants to groom them into well-informed database application developers.

LIST OF EXPERIMENTS

1. Retrieve data from single table with condition
2. Create a table with primary key and foreign key
3. Create a view on a table
4. Create an index on a table
5. Create a procedure
6. Create a user defined function
7. Conditional formatting and data validation
8. working with Financial formulas

9. vlookup and hlook up

10. Exporting data from SQL to excel

11. Protecting a work book

12. Creating macros

TOTAL: 48 HOURS

15BHC009 PROFESSIONAL SKILLS-I 5 0 0 4

Course objective: To improve the personality, to motivate the students to achieve the goals**.**To face interviews in a well manner. To develop and create their own identity for interview.It also initiate the students to improvise their personal skills

UNIT IINTRODUCTION TO PERSONALITY DEVELOPMENT 20

Importance of personality development-SWOT Analysis-What are goals-Effective Goal-Setting and achieve Goal.

UNIT IIFIRST IMPRESSION AND VISUAL IDENTITY 20

What is first impression-Taking Charges-Self brand-Visual identity-first two seconds-hand shake-body language?

UNIT III INTERVIEW SKILLS 20

College to Career-Networking-Group discussion-speaking skills-Being grace full work-Resume preparation

UNIT IV NUMERICAL APPS 20

Time and distance-problems on train-profit loss-problems on ages-odd one out of series- area –simple interest

UNIT VVERBAL APPS 20

Synonyms-Antonyms-sentence formation-selecting words-ordering words.

TOTAL: 100 HOURS

15BHC010 INTRODUCTION TO APP DEVELOPMENT 5 0 0 4

Course objective:

To educate a student to develop a windows app using .net maintainsessions, life cycle and deploying an app in store. Maintaining Applications through systems. To design and develop new applications.

UNIT IFUNDAMENTALS OF APPLICATION DEVELOPMENT 20

Essentials o-Introduction to application development-development f Application development process- various development model-introduction to interactive design-design goals-design principals-introduction to interactive design process-Designing effective interactions

UNIT IIGETTING STARTED WINDOWSSTORE APPDEVELOPMENT 20

Introduction to windows 8-Introduction to windows store app –Gearing up for developing windows store app-Adding UI elements to an App-Organizing the various UI element-using absolute layout-using dynamic layout

UNIT III MAKING AN APP FUNCTIONAL AND IMPLEMENTING NAVIGATION 20

Handling Events –Identifying, Defining, Associating an event- Handling Routed Events-Identifying, Defining routed event- Planning and implementing navigation-Binding UI element to data-Using data template to display data.

UNIT IVENHANCING APP FEATURES AND LIFE CYCLE OF THE APP 20

Applying styles to control-using flouts-using animation Library-Introduction to app lifecycle development- Implementing state management.

UNITVMANIPULATING FILE DATA AND PUBLISHING APP 20

Accessing file–Writing to a file-Reading from a file–publishing a windows store app-Analyzing your App in windows store

TOTAL: 100 HOURS

References:

www.niitstudent.com
www.msdn.com

This Course is offered through collaboration with NIIT Limited,Chennai.The course content can be viewed through the above mentioned website.

Course Outcome:

CO1. Explain the Windows 8 platform and its features

CO2. Identify the essentials of Windows Store app development

CO3. Implement navigation in a Windows Store app

CO4. Use data binding to present data in the UI and apply styles to controls

CO5. Publish a Windows Store app

CO6. Analyze apps in Windows Store

CO7. Design and develop apps that can be installed and used on a wide range of devices.

CO8. Use the available tools and class library components to produce apps suitable for the end user.

15BHC011 DATA STRUCTURES & ALGORITHMS 40 0 4

Course objective: The course discusses the ways to use various algorithms for writing efficient programs, which help in strengthening a learner's logic building capabilities. To develop and create structure for each program.

UNIT I INTRODUCING ALGORITHMS AND DATA STRUCTURES 16

The role of algorithms - data structures in problem solving- Design algorithms -Measure their efficiency

UNIT II IMPLEMENTING SORTING AND ALGORITHMS 16

Sorting algorithm and types of sorting algorithms- Bubble sort algorithm and determine its efficiency-Steps to implement the bubble sort algorithm- Implement the insertion sort

algorithm and Efficiency-Steps to implement the insertion sort algorithms - Quick Sort Algorithm

UNIT III IMPLEMENTING SEARCHING ALGORITHMS 16

Implementation of quick sort algorithm- implementation of linear search algorithm- Implementation of linear search algorithm-Implementation of binary search algorithm – Hashing.

UNIT IV SOLVING PROGRAMMING PROBLEMS USING LINKED LISTS 16

Linked lists –Types of List- Singly Linked Lists – Structure of singly link list- Doubly Linked List- Structure of Doubly Linked List.

UNIT V STACKS, QUEUES AND TREES 16

Implementation of Stacks-Implementation ofQueues-Tree and its terminologies-Binary Search Tree and Its operations.

TOTAL: 80 HOURS

References:

www.niitstudent.com
www.niitstudent.com
https://en.wikipedia.org/wiki/Algorithm
http://www.sorting-algorithms.com/bubble-sort
https://en.wikipedia.org/wiki/Linear_search
https://en.wikipedia.org/wiki/Binary_search
http://www.cs.auckland.ac.nz/~jmor159/PLDS210/stacks.html

This Course is offered through collaboration with NIIT Limited,Chennai.The course content can be viewed through the above mentioned website.

Course Outcome:

CO1. The role of data structures and algorithms in problem solving through computers

CO2. Identify the techniques to design algorithms and measure their efficiency.

CO3. sort data by using bubble sort, insertion sort, and quick sort

CO4. search data by using linear search and binary search techniques

CO5. solve programming problems by using linked lists

CO6. solve programming problems by using stacks and queues

CO7. solve programming problems by using trees

CO8. Develop skills foe effective data representation to build efficient programs.

CO9. Write efficient program logic

15BHC012 APP DEVELOPMENT LAB 0 0 6 2

Course objective:Develop expertise in app development and design to create fast and fluid Windows apps. Learn app development on a variety of levels.

LIST OF EXPERIMENTS

1. Working with xaml code
2. Creating a app bar for windows app
3. Dynamic creation of controls
4. Creating event handler for a button
5. Applying templates for item control
6. Using predefined styles for control
7. Create user defined styles for control
8. Creating tool tip in app
9. Creating popups for a app
10. Writing data into a file
11. Reading a data from a file
12. Deploying an app in the store

TOTAL:48 HOURS

15BHC013 WEB APPLICATION USING ASP MVC 4 0 0 4

Course objective: To educate to create a Web application using MVC pattern working of entity frame work, using LINQ, implementing AJAX and how to deploy a web application. To create web sites effectively.

UNIT I INTRODUCTION TO MVC PATTERN 16

Introduction to Web Application Development –Exploring ASP.NET-Working with Controllers-Working with Views-Activity: Passing Data between Controllers and Views-Routing Requests to Controller Actions-Summary-Exercises.

UNIT II WORKING WITH MODELS 16

Working with Models-Working with HTML and URL Helpers-Introduction to Data Annotations-Implementing Validation-Activity: Implementing Validation-Introduction to Entity Framework-Working with Entity Framework-Activity: Working with the EF Code-first Approach-Activity: Managing Changes to the Model-Summary-Exercises.

UNIT III INTRODUCTION TO LINQ 16

Introduction to LINQ-Accessing Data from Disparate Data Sources-Activity: Using LINQ to Access XML-Implementing a Consistent Look and Feel Using Layouts-Activity: Implementing a Consistent Look and Feel Using Layouts-Activity: Implementing a Nested Layout- Styling Views-Making a Web Application Responsive by Using JavaScript-Activity: Using jQuery-Summary-Exercises.

UNIT IV IMPLENTING AJAX IN ASP MVC 16

Implementing Partial Page Updates Using AJAX-Activity- Implementing Partial Page Updates Using AJAX - Implementing State Management-Activity: Implementing State Management-Optimizing the Performance of a Web Application-Activity: Optimizing the Performance of a Web Application -Summary-Exercises.

UNIT V HOSTING A WEB APPLICATION 16

Controlling Access to a Web Application-Implementing Authentication-Activity: Implementing Authentication-Implementing Authorization-Activity: Implementing Authorization-Preparing a Web Application for Deployment-Hosting a Web Application to an IIS Server-Activity: Deploying a Web Application-Summary-Exercises.

TOTAL: 80 HOURS

References:

www.niitstudent.com

www.c#cornert.com

This Course is offered through collaboration with NIIT Limited,Chennai.The course content can be viewed through the above mentioned website.

Course Outcome

CO1. Identify the fundamentals of application development

CO2. Work with Controllers, views, Models, and Helper methods

CO3. Identify data annotations and implement validation

CO4. Identify the fundamentals of Entity Framework

CO5. Identify a consistent look and feel using layouts

CO6. Make a Web application responsive by using JavaScript

CO7. Implement the partial page updates using AJAX

CO8. Implement state management and optimize the performance of a Web application

CO9. Implement authentication and authorization

CO10. Deploying a web application

CO11. After completing this course, the student should be able to:

CO12. Identify the various phases and development models of application

development life cycle.

CO13. Design interactive web applications.

15BMA003 STATISTICAL AND NUMERICAL METHODS 4 00 4

Course objective: To develop the skills of the students in the concepts of Statistics and Numerical Methods. The course will also serve as a prerequisite for post graduate and specialized studies and research development.

UNIT I INTRODUCTIONTO STATISTICS 16

Introduction to statistics-frequency distribution-Diagrammatic representation-Measures of Central Tendency: Mean, Median, Mode, Geometric mean, Harmonic mean-Measures of Dispersion: Range, Quartile Deviation, Mean Deviation, Standard Deviation, and Coefficient of Variation.

UNIT II CORRELATION AND REGRESSION 16

Correlation Analysis: Introduction, Methods of Studying Correlation- Karl Pearson's Coefficient Of Correlation-Spearman's Rank Correlation Coefficient: Ranks are given, Ranks are not given, Equal ranks or Repeated Values.

Regression Analysis: Two Regression Equations-Regression Equation of X on Y, Regression Equation of Y on X.

UNIT III TESTS OF HYPOTHESIS 16

Sampling –Test of hypothesis- Test of Significance for Small Samples: t test- Single Mean, Two Mean and Paired t-test- F test-Chi Square Test: Goodness of Fit, 2X2 Contingency table.

UNIT IV ALGEBRAIC AND TRANSCENDENTAL EQUATIONS 16

Roots of equations: Graphical Method- Bisection Method- False position Method – Newton – Raphson's Method- Secant Method- Algebraic Equations: Gauss Elimination Method- Gauss-Jordan Method- Matrix Inverse Method- Gauss-Seidel Method.

UNIT V NUMERICAL INTEGRATION, DIFFERENTIATION AND DIFFERENTIAL EQUATIONS 16

Numerical Integration and Differentiation: Trapezoid Rule- Simpson's Rule- Application of numerical methods to differential equations: Runge-Kutta Order Methods

TOTAL: 80 HOURS

References:

1. S.P.Gupta, Statistical Methods, Sultan Chand & Sons, 35th Revised Edition, 2007.
2. S. Arumugam, A. Thangapandi Isaac and A. Somsundaram, Numerical Methods, Scitech Publications India Pvt. Ltd.2001.
3. P.R. Vittal and V. Malini, Statistical and Numerical Methods, Margham Publications, 1st Edition, 2007.

15BHC017 PROFESSIONAL SKILLS-II 4 0 04

Course objective: To enhance the interpersonal Skill of the students and to practice the written communication for the career development. To develop their characteristics according to interview.

UNIT I BUISNESS COMMUNICATION 16

Importance of Writing in the Business World -Characteristics of Effective Writing-Activity-Common Mistakes in Effective Writing-E-mail as a Written Communication Tool-Activity-Making Business Writing- Effective Importance of Data in Business Communication-Preparing Data for Analysis-Tools for Data Analysis.

UNIT II SELF DEVELOPMENT16

Introduction-Some Industry Perspectives-Self Development-Activity-Case Study

UNIT III CAREER GROWTH AND DEVELOPMENT 16

Introduction-Career Development-Conduct a Gap Analysis-Create a Plan-Activity

UNIT IV INTERVIEW HANDLING SKILLS 16

Introduction-Importance of Interviewing Skills-Importance of Job Interviews-Stages in an Interview-Interview Myths-Activity

UNIT V INTERVIEW PROCESSING SKILLS 16

The Interview Process-Before the Interview-During the Interview-After the Interview-The Art of Cracking Interviews-Types of Interview Questions-Activity

TOTAL : 80 HOURS

References:

www.niitstudent.com
http://www.infinityfast.in
http://www.mentalwellnessbc.ca

This Course is offered through collaboration with NIIT Limited, Chennai.The course content can be viewed through the above mentioned website.

15BHC018 SOFTWARE ENGINEERING ESSENTIALS-I 5 0 0 4

Course objective: This course familiarizes a learner with the working of the common business processes in an organization. It provides an insight on how business requirements are translated into system specifications. In addition, it enables a learner to comprehend the structure and design of object-oriented software systems using Unified Modeling Language.

UNITIUNDERSTANDING ORGANISATION AND BUSSINESS PROCESS 20

Identifying the functioning of an organization-types of organization-organizational structure-business processes-overview of UML-UML modeling Techniques-Structural Modeling-Behavioral Modeling-Role of UML in SDLC-Exploring starUML.

UNIT II MODELING THE SYSTEM FUNCTIONALITY 20

Defining the system-production process of drinking clean-phase of production planning-MRP-input and output of MRP- selecting the production process- creating use case diagram - identifying the use case-identifying the actors

UNIT III MODELING THE SYSTEM STRUCTURE 20

Identifying the relationships- identifying the system boundary-refining the system definition-Refining the use case-refining relationship among use cases-basic concepts of structural modeling- logistics process- logistics in organization-logistics planning- flow of inventory materials- Warehouse management-

UNIT IV MODELING THE SYSTEM INTERACTION 20

Behavioral Modeling-Marketing process-product Life cycle-stages of the marketing-sales process-Class notation-relationship-Sequence diagram-Communication diagram-try it yourself.

UNIT V MODELINGTHE FLOW OF CONTROL IN A SYSTEM 20

Activity Diagram-Accounting process-Stages of accounting cycle-creating Activity Diagram-State Machine Diagram-Relationship management-Creating state machine diagram.

TOTAL: 80 HOURS

References:

www.niitstudent.com,http://www.tutorialspoint.com/uml,http://www.sparxsystems.com/uml-tutorial.html

This Course is offered through collaboration with NIIT Limited, Chennai. The course content can be viewed through the above mentioned website.

15BHC019 PROGRAMMING IN JAVA 5 0 04

Course objective: This course is to educate the student about oops concepts and to create a simple java application using threads, listeners, exception handling and JDBCeffective program skill development.

UNIT I CLASS REVIEW ENCAPSULATION AND SUBCLASSING 20

Explore the Java platforms and versions - Explore the open nature of Java and its community - Create simple Java classes - Use Java SE 7 numeric and binary literals - Manipulate strings - Use logical operators - Iterate with loops - Create arrays - Use Java classes, methods, and constructors Package and import statements - Use encapsulation in Java class design - Create and use Java subclasses - Overload methods

UNIT II ADVANCED CLASS DESIGN AND JAVA INTERFACES 20

Access Specifies- Use field shadowing – Overriding Methods- Use virtual method invocation - Explore polymorphism -Casting – Object Class Methods -Abstract class -Static and Final Modifiers-Design patterns - Interface- Implement the DAO pattern

UNIT III GENERICS AND STRING PROCESSING AND EXCEPTION HANDLING 20

Explore generics - Create a custom generic class - Use collections and generics - Implement an Array List - Implement a Set - Implement a HashMap - Implement a stack by using a dequeue - Use the Print Writer class - Process strings – String Tokenizer class - Work with regular expressions - Exceptions - Use the try-with-resources statement - Custom exceptions - Use assertions

UNIT IV JAVA IO/NIO-THREADING 20

Describe the basics of input and output in Java - Serialization - Read and write objects by using serialization - Explore new File I/O API (NIO.2) – Path Interface- Work with threads -

Use the java.util.concurrent packages - Work with concurrent IO - Use parallelism - Apply the Fork-Join Framework

UNIT V JDBC AND LOCALIZATION **20**

Use the JDBC API - Work with Prepared Statement and Callable Statement - Use transactions with JDBC – Row Set Provider and Row Set Factory -- Explore localization - Work with date and currency

TOTAL: 100 HOURS

References:

www.niitstudent.com

www.tutorialpoint.com

www.javatpoint.com

This Course is offered through collaboration with NIIT Limited, Chennai. The course content can be viewed through the above mentioned website.

15BHC021 WEB APPLICATION USING SERVLETS & JSP 4 0 0 4

Course objective:

This course describes how to create dynamic Web content using Java technology servlets and JSP technology. The course describes how to construct small to medium scale Web applications and deploy them onto the Application Server, which is the reference implementation for the servlet and JSP specifications.

UNIT I INTRODUCTION TO JAVA SERVLETS AND JAVA SERVER PAGES **16**

Web Application Technologies-Web Sites-Web Applications-Java Servlets-Process of JSP-MVC

UNIT II IMPLEMENTING AN MVC DESIGN AND SERVLET'S ENVIRONMENT **16**

Developing the MVC Solution-MVC Example-Handling errors-Client Session Management-Cookies-Deployment Descriptors-Servlet Mapping-Scopes

UNIT III VIEW FACILITIES AND JSP PAGES AND CUSTOM TAGS 16

Expression language-Java Server Pages Technology-JSP Scripting Elements-Standard Tags-JSTL-Designing JSP Pages with Custom Tag Libraries

UNIT IVMORE CONTROLLER AND MORE OPTIONS FOR MODEL 16

Servlet Lifecycle and Annotations-Threading-Filter API-Configuring the Filter-Developing Web application using database-Java Persistence API

UNIT V ASYNCHRONOUS SERVLETS AND IMPLEMENTING SECURITY 16

Asynchronous Servlets-AJAX-Authentication and Authorization-Declarative Authorization-Programmatic Authorization

TOTAL: 80 HOURS

References:

www.niitstudent.com
www.javatpoint.com

Www.roseindia.com

This Course is offered through collaboration with NIIT Limited, Chennai. The course content can be viewed through the above mentioned website.

15BHC022 PROFESSIONAL SKILLS-III 3 0 0 3

Course objective: To enhance the interpersonal Skill of the students and to practice the written communication for the career development and also make the students to attend interviews efficiently.

UNIT IIMPORTANCE OF RESUME 9

Importance of resume-Cover Letter-Structuring a Resume-Highlighting Strength in a resume-Resume Building-Conversation Model-Stages in Conversation-Improving Conversation Skills-Conversation Etiquette.

UNIT IIHOMEWORKBUSINESS VOCABULARY 9

Homework Business Vocabulary-Building Vocabulary-Understanding Homonyms-Understanding Homographs-Understanding Opposites. Persuading Others-Expressing Opinions-Expressing Disagreement-Telephone Skills.

UNIT IIITELEPHONE HANDLING SKILLS 9

Telephone Handling Skills Assessments-Phases of a Call-Putting Someone on Hold-Transferring a call-Telephone Etiquette-Understanding Aptitude Tests-Verbal Ability and Reasoning.

UNIT IV NUMERICAL ABILITY AND REASONING 9

Numerical Ability and Reasoning-Abstract Reasoning-Spatial Ability-Mechanical Reasoning-Group Discussions-Eliminating Errors in Speech-Understanding Indianisms-Avoiding Indianisms.

UNIT VINTRODUCTION TO INTERVIEW SKILLS 9

Introduction to interview skills-Introduce Yourself-Preparing for an Interview- Stages in an Interview- Interview Body Language – Interview Etiquette-FAQ in Interview-Types of Interview Questions-Handling Challenging Interview Questions.

TOTAL: 45 HOURS

References:

www.niitstudent.com
http://www.infinityfast.in
http://www.mentalwellnessbc.ca
This Course is offered through collaboration with NIIT Limited, Chennai. The course content can be viewed through the above mentioned website.

Syllabus of

Discipline Specific Electives (DSE)

15BHC101 ESSENTIALS OF INFORMATION TECHNOLOGY 4 0 0 4

Course objective: To produce graduates who understands the basic knowledge of computers and their respective tools. Developing software using Information Technology.

UNIT I INTRODUCTION

16Introduction to computer system – Basics of computer systems – Various hardware components – Date storage and various memory UNITs – Central processing UNIT – Execution cycle – Introduce to software and its classification.

UNIT II PROBLEMSOLVING TECHNIQUES

Problem solving techniques – Introduction to problem solving – computational problem and its classification – Logic and its types – Introduction to algorithms – Implementation of algorithms using flowchart – Flowcharts implementation through RAPTOR tool – Searching and sorting algorithms – Introduction and classification to Data Structures – Basic Data Structures – Advanced data structures.

UNIT III PROGRAMMING TECHNIQUES

Programming basics – Introduction to programming paradigms and pseudo code – Basic programming concepts – Program life cycle – Control structures – Introduction and demonstration of 1-D Array and 2-D Array – Searching and Sorting techniques – Demonstration concepts of memory references in arrays – strings – Compiler concepts – Code optimization techniques.

Structured programming – Functions – Structures – File Handling – Introduction to Software Development Life cycle – Industry Coding Standards and Best practices – Testing and Debugging – Code review.

UNIT IVINTRODUCTION TO PROJECT DEVELOPING 16 Project – Project Specification – Preparation of High level design and detailed design document, UNIT Test Plan and Integrated Test Plan – Coding and UNITtesting activities – Integration Testing.

UNIT V RELATIONAL DATABASE 16

- RDBMS – data processing – the database technology – data models.
- ER modeling concept – notations –Extended ER features.
- Logical database design – normalization.
- SQL – DDL statements – DML statements – DCL statements.
- Joins – Sub queries-Views.
- Database design Issues.

TOTAL: 80 HOURS

Text Books:

1. Andrew S.Tanenbaum,: Structured Computer Organization , PHI,4th edition ,.
2. Dromey, R.G.,Howw to solve it by computers,Prentice Hall,2005.
3. Alfred V.Aho,Ullman,Hopcroft,Data Structures and Algorithms,Addison-wesely.
4. Yashwant Kanitker,Let Us C, by yashwanth kanitkar,Second Edition.
5. Aho,Alfred V.Compiler Principles,Techniques and Tools,Pearson Education.

6. Henry F Korth,Abraham Silberschatz,"Database System Concepts",Second ed.,McGraw-Hill International editions,Computer science series,1661.

References:

1. John L.Hennessy,David Goldberg,David A.Patterson,Computer Architecture:A Quantitative Approach ,2nd Edition Published by Morgan Kaufman Publishers,.
2. Silberschatz and Galvin, Operating System Concepts, John Wiley & Sons, Sixth edition.
3. Andrew Tanenbaum,Modern Operating System Concepts, Pearson Education.
4. Milan Milenkovic,"Operating System: concepts and design ", McGraw-Hill.
5. Charles Crowley,"Operating System: A Design-oriented Approach".
6. Lipschutz, Seymour & G A V Pai, Data Structures, Tata McGraw-Hill.
7. Baldwin,Douglas& Scragg, Greg W.,Algorithms and Data Structures The Science of Computing ,Dreamtech.
8. Kernighan.,Ritchie, ANSI C Language,Prentice Hall of India, New Delhi , 1662.
9. Schaum series,Programming in C,Third Edition.
10. Programming Pearls, by Jon Bentley,Pearson Education Publication.
11. Tharp Alan L, File Organization and Processing,John Willey and Sons.

15BHC102 SOFTWARE PROJECT MANAGEMENT 4 0 0 4

Course objectives:

- To define and highlight importance of software project management.
- To formulate strategy in managing projects
- To estimate the cost associated with a project
- To plan, schedule and monitor projects for the risk management
- To define the software management metrics
- To train software project managers and other individuals involved in software project planning and tracking and oversight in the implementation of the software project management process

UNIT I INTRODUCTION 16

Introduction to Competencies - Product Development Techniques - Management Skills - Product Development Life Cycle - Software Development Process and models - The SEI CMM - International Organization for Standardization.

UNIT II DOMAIN PROCESSES 16

Managing Domain Processes - Project Selection Models - Project Portfolio Management - Financial Processes - Selecting a Project Team - Goal and Scope of the Software Project -

Project Planning - Creating the Work Breakdown Structure - Approaches to Building a WBS - Project Milestones - Work Packages - Building a WBS for Software.

UNIT III SOFTWARE DEVELOPMENT 16

Tasks and Activities - Software Size and Reuse Estimating - The SEI CMM - Problems and Risks - Cost Estimation - Effort Measures - COCOMO: A Regression Model - COCOMO II - SLIM: A Mathematical Model - Organizational Planning - Project Roles and Skills Needed.

UNIT IV SCHEDULING ACTIVITIES 16

Project Management Resource Activities - Organizational Form and Structure - Software Development Dependencies - Brainstorming - Scheduling Fundamentals - PERT and CPM - Leveling Resource Assignments - Map the Schedule to a Real Calendar - Critical Chain Scheduling.

UNIT V QUALITY ASSURANCE 16

Quality: Requirements – The SEI CMM - Guidelines - Challenges - Quality Function Deployment - Building the Software Quality Assurance - Plan - Software Configuration Management: Principles - Requirements - Planning and Organizing - Tools - Benefits - Legal Issues in Software - Case Study

TOTAL : 80 HOURS

Text Book:

1. Robert T. Futrell, Donald F. Shafer, Linda I. Safer, "Quality Software Project Management", Pearson Education, Asia, 2002.

References*:*

1. Pankaj Jalote, "Software Project Management in Practice", Addison Wesley, 2002.
2. Hughes, "Software Project Management, 3/E", Tata McGraw-Hill, 2004.

15BHC103 INTERNET OF THINGS 4 0 0 4

Course objective:

- To learn the basic issues, policy and challenges in the Internet
- To understand the components and the protocols in Internet
- To build a small low cost embedded system with the internet
- To understand the various modes of communications with internet

- To learn to manage the resources in the Internet
- To deploy the resources into business
- To understand the cloud and internet environment.

UNIT I INTRODUCTION 16

Definition – phases – Foundations – Policy– Challenges and Issues - identification - security – privacy. Components in internet of things: Control UNITs – Sensors – Communication modules – Power Sources – Communication Technologies – RFID – Bluetooth – Zigbee – Wi-Fi – Rflinks – Mobile Internet – Wired Communication

UNIT II PROGRAMMING MICROCONTROLLER FOR IOT 16

Basics of Sensors and actuators – examples and working principles of sensors and actuators – Cloud computing and IOT – Arduino/Equivalent Microcontroller platform – Setting up the board - Programming for IOT – Reading from Sensors Communication: Connecting microcontroller with mobile devices – communication through Bluetooth and USB – connection with the internet using Wi-Fi / Ethernet

UNIT III RESOURCE MANAGEMENT IN THE INTERNET OF THINGS 16

Clustering - Software Agents - Data Synchronization - Clustering Principles in an Internet of Things Architecture - The Role of Context - Design Guidelines -Software Agents for Object - Data Synchronization- Types of Network Architectures - Fundamental Concepts of Agility and Autonomy-Enabling Autonomy and Agility by the Internet of Things-Technical Requirements for Satisfying the New Demands in Production - The Evolution from the RFID-based EPC Network to an Agent based Internet of Things- Agents for the Behaviour of Objects

UNITIV BUSINESS MODELS FOR THE INTERNET OF THINGS 16

Meaning of DiY in the Network Society- Sensor-actuator Technologies and Middleware as a Basis for a DiY Service Creation Framework - Device Integration - Middleware Technologies Needed for a DiY Internet of Things Semantic Interoperability as a Requirement for DiY Creation -Ontology- Value Creation in the Internet of Things-Application of Ontology Engineering in the Internet of Things-Semantic Web-Ontology - The Internet of Things in Context of EURIDICE - Business Impact

UNIT V FROM THE INTERNET OF THINGS TO THE WEB OF THINGS:16

Resource-oriented Architecture and Best Practices- Designing REST ful Smart Things - Web-enabling Constrained Devices - The Future Web of Things - Set up cloud environment – send data from microcontroller to cloud – Case studies – Open Source e-Health sensor platform – Be Close Elderly monitoring – Other recent projects.

TOTAL: 80 HOURS

References:

1. Charalampos Doukas , Building Internet of Things with the Arduino, Create space, April 2002
2. Dieter Uckelmann et.al, "Architecting the Internet of Things", Springer, 2011
3. Luigi Atzor et.al, "The Internet of Things: A survey, ", Journal on Networks, Elsevier Publications, October, 2010
4. http://postscapes.com/ 5. http://www.theinternetofthings.eu/what-is-the-internet-of-things

15BHC104 MOBILE COMPUTING 4 00 4

Course objective:

- To understand the basics of Mobile computing.
- To learn the role of wireless networks in Mobile Computing
- To study about the underlying wireless networks.
- To understand the architectures of mobile.
- To become familiar with the mobile computing platforms

UNIT I WIRELESS COMMUNICATION FUNDAMENTALS 16

Introduction – Wireless transmission – Frequencies for radio transmission – Signals – Antennas – Signal Propagation – Multiplexing – Modulations – Spread spectrum – MAC – SDMA – FDMA – TDMA – CDMA – Cellular Wireless Networks.

UNIT IITELECOMMUNICATION NETWORKS 16

Telecommunication systems – GSM – GPRS – DECT – UMTS – IMT-2000 – Satellite Networks - Basics – Parameters and Configurations – Capacity Allocation – FAMA and DAMA – Broadcast Systems – DAB - DVB.

UNIT IIIWIRLESS LAN 16

Wireless LAN – IEEE 802.11 - Architecture – services – MAC – Physical layer – IEEE 802.11a - 802.11b standards – HIPERLAN – Blue Tooth.

UNIT IV MOBILE NETWORK LAYER 16

Mobile IP – Dynamic Host Configuration Protocol - Routing – DSDV – DSR – Alternative Metrics.

UNIT VTRANSPORT AND APPLICATION LAYERS 16

Traditional Transmission Control Protocol – Classical Transmission Control Protocol improvements – Wireless Application Protocol, Wireless Application Protocol 2.0.

TOTAL : 80 HOURS

Text Books:

1. Jochen Schiller, "Mobile Communications", PHI/Pearson Education, Second Edition, 2003. (UNIT I Chap 1,2 &3- UNIT II chap 4,5 &6-UNIT III Chap 7.UNIT IV Chap 8-UNIT V Chap 6&10.)

2. William Stallings, "Wireless Communications and Networks", PHI/Pearson Education, 2002. (UNIT I Chapter – 7&10-UNIT II Chap 6)

References:

1. Kaveh Pahlavan, Prasanth Krishnamoorthy, "Principles of Wireless Networks", PHI/Pearson Education, 2003.

2. Uwe Hansmann, Lothar Merk, Martin S. Nicklons and Thomas Stober, "Principles of Mobile Computing", Springer, New York, 2003. Hazysztof Wesolowshi, "Mobile Communication Systems", John Wiley and Sons Ltd, 2002.

15BHC105 HTML5 4 0 04

Course objective: The course, HTML5 Programming, provides an introduction to the Hypertext Markup Language (HTML). The course covers the need for HTML. It explains the various types of HTML tags and elements used to create Web pages. In addition, the course covers Cascading Style Sheet (CSS), JavaScript and JQuery

UNIT IGETTING STARTED WITH HTML AND ENHANCING WEB PAGES 16

Introduction about HTML-Creating an HTML Web Page-Working with Styles-Applying Transitions, Animations and Transformations

UNIT IIWORKING WITH TABLES AND FRAMES 16

Identifying the basic Structure of a Table-Enhancing Tables-Creating Web Pages Using Frames-Styling Frames

UNIT IIIADDING INTERACTIVITY TO WEB PAGES AND DYNAMIC WEB PAGES16

Understanding Scripting-Implementing JavaScript-Implementing Functions-Designing HTML form-Components of Web Page

UNIT IVWORKING WITH GRAPHICS AND ADDING VISUAL EFFECTS TO WEB PAGES 16

Introducing Canvas-Transforming and Animating Canvas Elements-Exploring JQuery-Adding Visual Effects Using jQuery-Implenting Image Rollover-Creating Image Gallery

UNIT V INTRODUCING GEOLOCATION AND OFFLINE SUPPORT FOR DATA 16

Implementing Geo Location-Handling Errors-Implementing Client-side Storage-Implementing Application Cache

TOTAL: 80 HOURS

References:

www.niitstudent.com
www.w3schools.com
www.htmlquick.com/tutorials/tables.html
www.html5rocks.com

This Course is offered through collaboration with NIIT Limited, Chennai. The course content can be viewed through the above mentioned website.

15BHC106CLOUD COMPUTING 4 0 0 4

Course objective:

- To introduce the broad perceptive of cloud architecture and model
- To understand the concept of Virtualization and design of cloud Services
- To be familiar with the lead players in cloud.
- To understand the features of cloud simulator
- To apply different cloud programming model as per need.
- To learn to design the trusted cloud Computing system

UNIT I CLOUD ARCHITECTURE AND MODEL 16

Technologies for Network-Based System – System Models for Distributed and Cloud Computing – NIST Cloud Computing Reference Architecture. Cloud Models:- Characteristics – Cloud Services – Cloud models (IaaS, PaaS, SaaS) – Public vs Private Cloud –Cloud Solutions - Cloud ecosystem – Service management – Computing on demand.

UNIT II VIRTUALIZATION 16

Basics of Virtualization - Types of Virtualization - Implementation Levels of Virtualization - Virtualization Structures - Tools and Mechanisms - Virtualization of CPU, Memory, I/O

Devices - Virtual Clusters and Resource management – Virtualization for Data-center Automation.

UNIT IIICLOUD INFRASTRUCTURE **16**

Architectural Design of Compute and Storage Clouds – Layered Cloud Architecture Development – Design Challenges - Inter Cloud Resource Management – Resource Provisioning and Platform Deployment – Global Exchange of Cloud Resources.

UNIT IV PROGRAMMING MODEL **16** Parallel and Distributed Programming Paradigms – MapReduce , Twister and Iterative MapReduce – Hadoop Library from Apache – Mapping Applications - Programming Support - Google App Engine, Amazon AWS - Cloud Software Environments -Eucalyptus, Open Nebula, OpenStack, Aneka, CloudSim

UNIT V SECURITY IN THE CLOUD **16**Security Overview – Cloud Security Challenges and Risks – Software-as-a-Service Security – Security Governance – Risk Management – Security Monitoring – Security Architecture Design – Data Security – Application Security – Virtual Machine Security - Identity Management and Access Control – Autonomic Security.

TOTAL : 80 HOURS

References:

1. Kai Hwang, Geoffrey C Fox, Jack G Dongarra, "Distributed and Cloud Computing, From Parallel Processing to the Internet of Things", Morgan Kaufmann Publishers, 2016.
2. John W.Rittinghouse and James F.Ransome, "Cloud Computing: Implementation, Management, and Security", CRC Press, 2010.
3. Toby Velte, Anthony Velte, Robert Elsenpeter, "Cloud Computing, A Practical Approach", TMH, 2006.
4. Kumar Saurabh, "Cloud Computing – insights into New-Era Infrastructure", Wiley India,2011.
5. George Reese, "Cloud Application Architectures: Building Applications and Infrastructure in the Cloud" O'Reilly
6. James E. Smith, Ravi Nair, "Virtual Machines: Versatile Platforms for Systems and Processes", Elsevier/Morgan Kaufmann, 2005.
7. Katarina Stanoevska-Slabeva, Thomas Wozniak, Santi Ristol, "Grid and Cloud Computing – A Business Perspective on Technology and Applications", Springer.
8. Ronald L. Krutz, Russell Dean Vines, "Cloud Security – A comprehensive Guide to Secure Cloud Computing", Wiley – India, 2010.

9. Rajkumar Buyya, Christian Vecchiola, S.Thamarai Selvi, 'Mastering Cloud Computing", TMGH,2013.
10. Gautam Shroff,Enterprise Cloud Computing,Cambridge University Press,2011 11. Michael Miller, Cloud Computing,Que Publishing,2008
11. Nick Antonopoulos, Cloud computing,Springer Publications,2010

15BHC107 MANAGEMENT INFORMATION SYSTEM 3 0 0 2

Course objective: To understand the basics of MIS, to learn the role of Management in IT to study about the strategies of Management

UNIT I INTRODUCTION 6

Introduction to Information Systems: Why study Information System – Why Business need Information Technology – Fundamentals of Information System – Overview of Information Systems.

UNIT II PROBLEM SOLVING IN MIS 6

Solving Business Problems with Information Systems: System Approach to Problem Solving – Developing Information System Solution – Database Management: Managing Data Resources – Technical Foundations of database Management.

UNIT III STRATEGIES AND APPLICATIONS 6

Information Systems for Strategic Advantages – Fundamentals of Strategic Advantage Strategic Applications and Issues in It; Managing IT: Enterprise and Global Management

UNIT IV INFORMATION TECHNOLOGY 6

Business applications of Information Technology: The Internet and Electronic Commerce – Fundamentals of Electronic Commerce – Information System for Business Operations: Business Information System – Transaction – processing Systems.

UNIT V DECISION SUPPORT SYSTEM 6

Information systems for Managerial Decision Support : Decision Support Systems Artificial Intelligence technology in Business – Managing IT – Planning for Business change with IT – Implementing business change with IT – Security & Control Issues in I/S – Ethical and societal challenges of Information Technology.

TOTAL: 30 HOURS

Text Book:

1. "Management Information Systems" – James A. O'Brien, 4th edition, Galgotia publications.

Reference Book:

1. "Management Information Systems" – Gordon B. Davis Margre the H. Olson, McGraw Hill, 3rd Reprint 2000.

15BHC108 ORGANIZATIONAL BEHAVIOUR 3 0 02

Course objective:
To understand the behavior of organization to learn the role of HR in IT sector to study about the strategies of Organization and Management.

UNIT I ORGANISATIONAL BEHAVIOUR 6
Management roles-Management skills challenges and opportunities for OB-models of OB foundation of HRM & OB-Historical development of HR& OB-Research foundation of OB Communication-the two way communication

UNIT II PERSONALITY 6
Personality determinants-personality attribute that OB-attitude-concept of attitude-type & function of attitude_motivation_theories of motivation _ Perception perceptual selectivity-social perception

UNIT III LEADERSHIP 6
Leadership theories-conflicts-types of conflict-conflict process-work team-benefit of work team-types of work team-shaping individual to team player & TQM

UNIT IV ORGANISATIONAL CHANGE 6
Forces of change-lewin's three step model to O.C-Work stress and stress management-organizational development-O.D Pros-client-consultant relationship-organizational development intervention-types of intervention

UNIT V ORGANISATIONAL STRUCTURE 6
Elements to design an organization structure-Types of organization-line organization function organization-line and staff organization-division organization-matrix organization-virtual organization.

TOTAL: 30 HOURS

Text Books:

1. Engineering enterprise-BPB
2. Organization behavior-L.N.prasad

15BHC109 OBJECT ORIENTED ANALYSIS AND DESIGN 3 0 0 2

Course objective:
To understand the concept of designing to learn the ER diagram. DFD diagram

UNIT I INTRODUCTION 6
System Development – Object Basis – Development Life Cycle – Methodologies – Patterns – Frameworks – Unified Approach – UML.

UNIT IICLASS AND OBJECTS 6
Use-Case Models – Object relations – Attributes – Methods – Class and Object responsibilities – Case Studies

UNIT III DESIGN CONCEPTS 6
Design Processes – Design Axioms – Class Design – Object Storage – Object Interpretability – Case Studies.

UNIT IV VIEW CONCEPT 6
User Interface Design – View layer Classes – Micro-Level Processes – View Layer Interface – Case Studies.

UNIT V QUALITY ASSURANCE 6
Quality Assurance Tests – Testing Strategies – Object orientation on testing – Test Cases – test Plants – Continuous testing – Debugging Principles – System Usability – Measuring User Satisfaction – Case Studies.

TOTAL: 30 HOURS

Text Books:

1. Ali Bahrami – Object Oriented Systems Development – McGraw Hill International Edition

References Books:

1. Grady Booch – Object Oriented Analysis and design – Addison Wesley, 2nd, Edition.
2. R.S Pressman – Software Engineering – Fourth Edition – McGraw Hill International Edition

15BHC110NETWORK SECURITY 3 0 0 2

Course objective: To enhance the knowledge in networks andanalyses networks security

UNIT I INTRODUCTION 6

Attacks – Services - Mechanisms - Conventional Encryption – Classical and Modern Techniques - Encryption Algorithms – Confidentiality.

UNIT II PUBLIC KEY ENCRYPTION 6

Public Key Cryptography-RSA (Rivest-Shamir-Adleman) Algorithm– Elliptic Curve Cryptography –Number Theory Concepts- Modular arithmetic, Eulerstheorem.

UNIT IIIMESSAGE AUTHENTICATION 6

Message Authorization and Hash Functions - Authentication requirements – Digest Function – Digital Signatures – Digital Signatures standards.

UNIT IV NETWORK SECURITY PRACTICE 6

Authentication Protocols-Authentication Applications – Electronic Mail Security – Internet Protocol Security – Web Security.

UNIT V SYSTEM SECURITY 6

Introduction to security attacks-Intruders-Types of intruders– Viruses – Worms – Firewalls Design Principles –Trusted Systems.

TOTAL: 30 HOURS

Text Books:

1. Stallings, Cryptography & Network Security – Principles & Practice, Prentice Hall, 3rd Edition 2002

Reference Books:

1. Bruce, Schneier, Applied Cryptography, 2nd Edition, Toha Wiley & Sons,
2. Man Young Rhee, "Internet Security", Wiley, 2003.
3. Pfleeger & Pfleeger, "Security in Computing", Pearson Education, 3rd Edition, 2003.

15BHC111 AD HOC NETWORKS 3 0 0 2

Course objective:

- To understand the basics of network security
- To learn the role of Adhoc in network security
- To study about the strategies Adhoc

UNIT I INTRODUCTION 6

Introduction-Fundamentals of Wireless Communication Technology - The Electromagnetic Spectrum - Radio Propagation Mechanisms - Characteristics of the Wireless Channel - IEEE 802.11a,b Standard – Origin Of Ad hoc: Packet Radio Networks - Technical Challenges - Architecture of PRNETs - Components of Packet Radios – Ad hoc Wireless Networks -What Is an Ad Hoc Network? Heterogeneity in Mobile Devices - Wireless Sensor Networks - Traffic Profiles - Types of Ad hoc Mobile Communications - Types of Mobile Host Movements - Challenges Facing Ad Hoc Mobile Networks-Ad hoc wireless Internet

UNIT II AD HOC ROUTING PROTOCOLS 6

Introduction - Issues in Designing a Routing Protocol for Ad Hoc Wireless Networks - Classifications of Routing Protocols -Table-Driven Routing Protocols - Destination Sequenced Distance Vector (DSDV) - Wireless Routing Protocol (WRP) - Cluster Switch Gateway Routing (CSGR) - Source-Initiated On-Demand Approaches - Ad Hoc On-Demand Distance Vector Routing (AODV) - Dynamic Source Routing (DSR) -Temporally Ordered Routing Algorithm (TORA) - Signal Stability Routing (SSR) -Location-Aided Routing (LAR) - Power-Aware Routing (PAR) - Zone Routing Protocol (ZRP)

UNIT III MULTICASTROUTING IN AD HOC NETWORKS 6

Introduction - Issues in Designing a Multicast Routing Protocol - Operation of Multicast Routing Protocols - An Architecture Reference Model for Multicast Routing Protocols - Classifications of Multicast Routing Protocols - Tree-Based Multicast Routing Protocols- Mesh-Based Multicast Routing Protocols - Summary of Tree-and Mesh-Based Protocols - Energy-Efficient Multicasting - Multicasting with Quality of Service Guarantees - Application-Dependent Multicast Routing - Comparisons of Multicast Routing Protocols

UNIT IV TRANSPORT LAYER, SECURITY PROTOCOLS 6

Introduction - Issues in Designing a Transport Layer Protocol for Ad Hoc Wireless Networks - Design Goals of a Transport Layer Protocol for Ad Hoc Wireless Networks -Classification of Transport Layer Solutions - TCP Over Ad Hoc Wireless Networks -Other Transport Layer Protocols for Ad Hoc Wireless Networks - Security in Ad Hoc Wireless Networks - Network Security Requirements - Issues and Challenges in Security Provisioning - Network Security Attacks - Key Management - Secure Routing in Ad Hoc Wireless Networks

UNIT VQoS AND ENERGY MANAGEMENT 6

Introduction - Issues and Challenges in Providing QoS in Ad Hoc Wireless Networks - Classifications of QoS Solutions - MAC Layer Solutions - Network Layer Solutions - QoS Frameworks for Ad Hoc Wireless Networks Energy Management in Ad Hoc Wireless Networks –Introduction - Need for Energy Management in Ad Hoc Wireless Networks - Classification of Energy Management Schemes - Battery Management Schemes - Transmission Power Management Schemes - System Power Management Schemes

TOTAL: 30 HOURS

Text Book:

1. C. Siva Ram Murthy and B.S. Manoj "Ad Hoc Wireless Networks: Architectures and Protocols", Prentice Hall PTR,2004

References:

1. C.K. Toh, Ad Hoc Mobile Wireless Networks: Protocols and Systems, Prentice Hall PTR,2001

15BHC112 BIG DATA ANALYTICS 3 0 0 2

Course objective:

- To explore the fundamental concepts of big data analytics
- To learn to analyze the big data using intelligent techniques.
- To understand the various search methods and visualization techniques.
- To learn to use various techniques for mining data stream.
- To understand the applications using Map Reduce Concepts.

UNIT IINTRODUCTION TO BIG DATA 6

Introduction to BigData Platform – Challenges of Conventional Systems - Intelligent data analysis – Nature of Data - Analytic Processes and Tools - Analysis vs Reporting - Modern Data Analytic Tools - Statistical Concepts: Sampling Distributions - Re-Sampling - Statistical Inference - Prediction Error.

UNIT II MINING DATA STREAMS **6**

Introduction To Streams Concepts – Stream Data Model and Architecture - Stream Computing - Sampling Data in a Stream – Filtering Streams – Counting Distinct Elements in a Stream – Estimating Moments – Counting Oneness in a Window – Decaying Window - Real time Analytics Platform(RTAP) Applications - Case Studies - Real Time Sentiment Analysis, Stock Market Predictions.

UNIT IIIHADOOP **6**

History of Hadoop- The Hadoop Distributed File System – Components of Hadoop- Analyzing the Data with Hadoop- Scaling Out- Hadoop Streaming- Design of HDFS-Java interfaces to HDFS- Basics-Developing a Map Reduce Application-How Map Reduce Works-Anatomy of a Map Reduce Job run-Failures-Job Scheduling-Shuffle and Sort – Task execution - Map Reduce Types and Formats- Map Reduce Features

UNIT IVHADOOP ENVIRONMENT **6**

Setting up a Hadoop Cluster - Cluster specification - Cluster Setup and Installation - Hadoop Configuration-Security in Hadoop - Administering Hadoop – HDFS - Monitoring-Maintenance-Hadoop benchmarks- Hadoop in the cloud

UNIT VFRAMEWORKS **6**

Applications on Big Data Using Pig and Hive – Data processing operators in Pig – Hive services – HiveQL – Querying Data in Hive - fundamentals of HBase and ZooKeeper - IBM InfoSphere BigInsights and Streams. Visualizations - Visual data analysis techniques, interaction techniques; Systems and applications

TOTAL : 30 HOURS

References :

1. Michael Berthold, David J. Hand, “Intelligent Data Analysis”, Springer, 2007.
2. Tom White “ Hadoop: The Definitive Guide” Third Edition, O’reilly Media, 2016.
3. Chris Eaton, Dirk DeRoos, Tom Deutsch, George Lapis, Paul Zikopoulos, “Understanding Big Data: Analytics for Enterprise Class Hadoop and Streaming Data”, McGrawHill Publishing, 2016 4. Anand Rajaraman and Jeffrey David Ullman, “Mining of Massive Datasets”, Cambridge University Press, 2016.
4. Bill Franks, “Taming the Big Data Tidal Wave: Finding OpportUNITies in Huge Data Streams with Advanced Analytics”, John Wiley & sons, 2016.
5. Glenn J. Myatt, “Making Sense of Data”, John Wiley & Sons, 2007
6. Pete Warden, “Big Data Glossary”, O’Reilly, 2011.
7. Jiawei Han, Micheline Kamber “Data Mining Concepts and Techniques”, Second Edition, Elsevier, Reprinted 2008.

8. Da Ruan,Guoquing Chen, Etienne E.Kerre, Geert Wets, Intelligent Data Mining, Springer,2007 10. Paul Zikopoulos ,Dirk deRoos , Krishnan Parasuraman , Thomas Deutsch , James Giles , David Corrigan , Harness the Power of Big Data The IBM Big Data Platform, Tata McGraw Hill Publications, 2016
9. Michael Minelli (Author), Michele Chambers (Author), Ambiga Dhiraj (Author) , Big Data, Big Analytics: Emerging Business Intelligence and Analytic Trends for Today's Businesses,Wiley Publications,2013
10. Zikopoulos, Paul, Chris Eaton, Understanding Big Data: Analytics for Enterprise Class Hadoop and Streaming Data, Tata McGraw Hill Publications, 2011

15BHC113 UNIX PROGRAMMING 4 0 0 4

Course objective:

This course introduces fundamentals & programming of Unix basic concepts

UNIT I INTRODUCTION 16

File and common commands - Shell - More about files - Directories- Unix system - Basics of file Directories and filenames - Permissions - modes - Directory hierarchy - Devices - the grep family - Other filters - the stream editor - the AWK pattern scanning and processing language - files and good filters.

UNIT II CONCEPTS OF SHELL 16

Command line structure – Metacharacters - Creating new commands - Command arguments and parameters - program output as arguments - Shell variables - More on I/O redirection - loop in shell programs - Bundle - Setting shell attributes, Shift command line parameters - Exiting a command or the shell, evaluating arguments - Executing command without invoking a new process - Trapping exit codes -- Conditional expressions.

UNIT III SHELLPROGRAMMING 16

Customizing the call command, Functions of command, While and Until loops - Traps - Catching interrupts - Replacing a file - Overwrite - Zap - Pick command - News command - Get and Put tracking file changes.

UNIT IV FEATURES IN UNIX 16

Standard input and output - Program arguments - file access - A screen at a time printer - On bugs and debugging - Examples - Zap - pick - Interactive file comparison program - Accessing the environment - Unix system calls - Low level I/O, File system Directories and modes, Processors, Signal and Interrupts

UNIT V PROGRAM DEVELOPMENT 16

Program development - Four function calculator - Variables and error recovery - Arbitrary variable names, Built in functions, Compilation into a machine, Control flow and relational operators, Functions and procedures - Performance evaluation - MS macro package - Troff level - Tbl and eqn preprocessors - Manual page - Other document preparation.

TOTAL : 80 HOURS

Text Book:

1.Brian W. Kernigan, Rob Pike - The UNIX Programming Environment – Prentice hallof India(1684).

References:

1. Steven Earhart - The UNIX System for MSDOS Users - Galgotia book source P. Ltd. (1660).
2. StefenPrata - Advanced UNIX - A Programmer Guide.

15BHC114 ARTIFICIAL INTELLIGENCE 4 00 4

Course objective: To learn the basics of designing intelligent agents that can solve general purpose problems, represent and process knowledge, plan and act, reason under uncertainty and can learn from experiences

UNIT I PROBLEM SOLVING 16

Introduction – Agents – Problem formulation – uninformed search strategies – heuristics – informed search strategies – constraint satisfaction

UNIT II LOGICAL REASONING 16

Logical agents – propositional logic – inferences – first-order logic – inferences in first order logic – forward chaining – backward chaining – unification – resolution

UNIT IIIPLANNING 16

Planning with state-space search – partial-order planning – planning graphs – planning and acting in the real world

UNIT IVUNCERTAIN KNOWLEDGE AND REASONING 16

Uncertainty – review of probability - probabilistic Reasoning – Bayesian networks – inferences in Bayesian networks – Temporal models – Hidden Markov models

UNIT VLEARNING 16

Learning from observation - Inductive learning – Decision trees – Explanation based learning – Statistical Learning methods - Reinforcement Learning.

TOTAL: 80 HOURS

Text Books:

1. S. Russel and P. Norvig, "Artificial Intelligence – A Modern Approach", Second Edition, Pearson Education, 2003.

References:

1. David Poole, Alan Mackworth, Randy Goebel,"Computational Intelligence: a Logicalapproach", Oxford University Press, 2004.
2. G. Luger, "Artificial Intelligence: Structures and Strategies for complex problem solving", Fourth Edition, Pearson Education, 2002.

15BHC115 SOFTWARE TESTING 4 0 0 4

Course objective: This course introduces the basic concept of software testing and maintaining sofwares. Also to develop softwares efficiently and to design projects for industries.

UNIT I INTRODUCTION 16

Purpose – Productivity and Quality in Software – Testing Vs Debugging – Model for Testing – Bugs – Types of Bugs – Testing and Design Style.

UNIT II TESTING TECHNIQUES 16

Flow/Graphs and Path Testing – Achievable paths – Path instrumentation – Application – Transaction Flow Testing Techniques

UNIT III DOMAIN TESTING 16

Data Flow Testing Strategies - Domain Testing: Domains and Paths – Domains and Interface Testing

UNIT IV TESTING METRICS 16

Linguistic –Metrics – Structural Metric – Path Products and Path Expressions. Syntax Testing – Formats – Test Cases.

UNIT V STATE GRAPH AND TESTING **16**

Logic Based Testing – Decision Tables – Transition Testing – States, State Graph, State Testing.

TOTAL: 80 HOURS

Text Books:

1. B. Beizer , 2003, Software Testing Techniques, II Edn., DreamTech India, New Delhi.
2. K.V.KK. Prasad , 2005, Software Testing Tools, DreamTech. India, New Delhi.

References:

1. Burnstein, 2003, Practical Software Testing, Springer International Edn
2. E. Kit, 1665, Software Testing in the Real World: Improving the Process, Pearson Education, Delhi.
3. R.Rajani, and P.P.Oak, 2004, Software Testing, Tata McGraw Hill, New Delhi.

15BHC116 COMPUTER NETWORKS 40 0 4

Course objective: The students will be able to build an understanding of the fundamental concepts of computer networking .Familiarize the student with the basic taxonomy and terminology of the computer networking area. Introduce the student to advanced networking concepts, preparing the student for entry Advanced courses in computer networking.

UNIT I INTRODUCTION **16**

Introduction-computer networks-network for companies-network for people-application-network hardware-LAN, WAN, MAN, Wireless networks-Network software-protocol hierarchies-reference model-OSI Reference model, TCP /IP reference-comparison of OSI & TCP/IP

UNIT II LAYERS **16**

The internet-the ARPANET-NSFNET-internet usage-architecture of internet-connection oriented network x.25, frame relay-ATM-ATM virtual circuits-ATM reference model-guided transmission media-magnetic media-twisted pair-coaxial cable-Fibre optics-wireless transmission-data link layer-data link layer design issues.

UNIT IIIPROTOCOLS **16**

Public switched telephone network-structure of telephone system-switching-elementary data link protocols-an unrestricted simplex protocol-a simplex stop and wait protocol-a simplex protocol for a noisy channel-sliding window protocols-one bit sliding window protocol-a protocol using Go Back N-a protocol using selective repeat.

UNIT IV ROUTING ALGORITHMS **16**

The network layer-design issues -routing algorithm-the optimality principle-shortest path routing-flooding-distance vector routing-hierarchical routing-link state routing-broad cast routing-multicast routing-congestion control algorithm-general principle of congestion control-congestion prevention policies- congestion control in virtual circuit subnets- congestion control in datagram subnets-load scheduling-jitter control.

UNIT V TRANSPORT LAYER **16**

Transport layer-design issues-elements of transport protocols- addressing-connection establishment-connection release-the internet transport protocol -network security-cryptography.

TOTAL:80 HOURS

Text Books:

1. S.Tanenbaum, 2003, Computer Networks, Fourth Edition, - Pearson Education, Inc, (Prentice hall of India Ltd), Delhi.

References:

1. B. Forouzan, 1668, Introduction to Data Communications in Networking, Tata McGraw Hill, New Delhi.
2. F. Halsall, 1665, Data Communications, Computer Networks and Open Systems, Addison Wessley.
3. Bertsekas and R. Gallagher, 1662, Data Networks, Prentice hall of India, New Delhi.

I5BHC117 DATA WAREHOUSING AND DATA MINING 4 0 0 4

Course objective: To enhance the knowledge in data mining and dara warehouse. Extending database to data mining. To acquire knowledge through databases. Mining the databases in a effective way.

UNIT I INTRODUCTION **16**

Data Mining Tasks-Data Mining Versus KDD-Relational Databases-Data Warehouses-Transaction Databases-Object Oriented Databases-Spatial Databases-Temporal Databases-Text And Multimedia Databases-Heterogeneous Databases-Social Implications Of Data Mining.

UNIT II DATA PREPROCESSING **16**

Data Preprocessing – Data Cleaning, Integration, Transformation, Reduction, Discretization.

UNIT III DATAMINING TECHNIQUES 16

Association Rule Mining- The Apriori Algorithm- Multilevel Association Rules-Constraint Based Association Mining-Mining Association Rules In Large Databases.

UNIT 1V CLASSIFICATION AND PREDICTION 16

Issues Regarding Classification And Prediction-Classification By Decision Tree Induction-Bayesian Classification-Back Propagation-Prediction-Classifier Accuracy.

UNIT V CLUSTER TECHNIQUES 16

Clusters Analysis: Type Of Data In Cluster Analysis-Categorization Of Major Clustering Methods: Partitioning Methods-Hierarchical Methods-Case Studies-Mining WWW-Mining Text Database-Mining Spatial Database.

TOTAL: 80 HOURS

Text Books:

1. Jiawei Han, MichelineKamber , "Data Mining : Concepts And Techniques ", Morgan Kaufmann Publishers, 2002.
2. Alex Berson, Stephen J. Smith, "Data Warehousing, Data Mining & OLAP ", Tata McGraw-Hill, 2004.

References:

1. Usama M.Fayyad, Gregory Piatetsky – Shapiro, Padhrai Smyth And RamasamyUthurusamy, "Advances In Knowledge Discovery And Data Mining", The M.I.T Press.

2. Ralph Kimball, "The Data Warehouse Life Cycle Toolkit ", John Wiley & Sons Inc.,

15BHC118 DISTRIBUTED COMPUTING 4 0 0 4

Course objective: This course introduces the concepts of Distributed databases and Distributed File system and its Hardware concepts. Parallel database will enhance the knowledge in networks. Also in distributing datas through network.

UNIT I INTRODUCTION 16

Distributed data base – Security and Integrity – New Data base application – Design of data bases – Knowledge based case studies for relational network and hierarchical systems. Distributed processing – Models for distributed computing – Load balancing – Remote procedure calls – process migration – concurrency issues on data bases.

UNIT II SOFTWARE/HARDWARE CONCEPTS 16

Hardware concepts – Switched multiprocessor, Bus based multicomputer, Switchedmulticomputer – Software concepts – Network operating systems and NFS – Time distributed systems - Design Issues: Transparency – Flexibility – Reliability – performance and scalability.

UNIT IIICLIENT/SERVER COMPUTING 16

Communications in distributed systems – The client – server model, blocking vsUnbufferedprimitives - Im lementation of client-server model.

UNIT IV SYNCHRONIZATION 16

Synchronization in distributed systems – Clock synchronization – Mutual exclusion – Election algorithms – Atomic transactions – Deadlocks in distributed system – Threads – Thread usage and Implementation of thread packages – processor allocation.

UINT V FILE SYSTEM 16

Distributed File system: File service interface – semantics of the file sharing – Distributed file system – Implementation of new trends in distributed file systems.

TOTAL: 80 HOURS

Text Books:

1. A.S Tanenbaum, "Modern Operating Systems ", Pearson Education

References:

1. James Martin, "Computer Networks and Distributed Processing, Software Techniques and Architectures", Pearson Education.

15BHC119 OBJECT ORIENTED SOFTWARE ENGINEERING 3 0 0 3

Course objective: This course introduces the basic concepts of Object Oriented Software Engineering. Reusability of software through objects and productivity of tools effectively in software engineering

UNIT IINTRODUCTION 9

Introduction to objects-module-cohesion-coupling-data encapsulation-abstract data types-information hiding-objects-inheritance-polymorphism & dynamic binding-cohesion & coupling of objects. Reusability, portability & interoperability-reuse concepts-impediments to reuse, reuse case studies-objects & productivity-reuse during design & implementation phases-reuse & maintenance, portability, why portability, techniques for achieving portability-interoperability-future trends in interoperability

UNIT IIPLANNING **9**

Planning and estimation-planning and the software process-estimating duration and cost-components of a software project management plan-software project management plan framework-IEEE software project management plan-planning of testing-planning of object oriented projects-training requirements-documentation standards-CASE tools for planning and estimating-testing the software project management requirement phase-requirements analysis techniques-reusing the prototyping-human factors-rapid prototyping as a specification techniques-reusing the rapid prototyping-other uses of rapid prototyping-management implication of the application design(JAD)-comparison of requirement analysis techniques-testing during requirement phase-CASE tools for the requirement phase-metrics for the requirement phase-obsertogles by case study: requirements phase-obsertogles by case study-rapid prototype-object oriented requirements

UNIT III SPECIFICATIONS **9**

Specification phase-specification document-informal-specification-structured, system analysis-other semi-formal techniques-entity relationship modeling-finite state machines – Petrinets z357-other formal techniques-comparison of specification techniques-testing during specification phase--CASE tools for the specification phase-metrics for the specification phase-obvert oglesy case study:structured systems analysis-software project management. Object oriented analysis phase-object oriented versus structured paradigm-object oriented analysis-elevator problem-use case modeling-dynamic modeling-testing during object oriented analysis phase-case tools-software project management.

UNIT IVDESIGNTECHNIQUES **9**

Design phase – design and abstraction –action oriented design- data flow analysis- transaction analysis – data oriented design – object oriented design- elevator problem – formal techniques for detail designs- real time design techniques – testing – case tools –metrics – object oriented design – implementation phase: choice of programming language – fourth generation language – good programming practices – coding standards- module reuse – module test case selection- black box – glass box module testing techniques- comparison – clean room-potential problems when testing objects – management aspects of module testing- CASE tools for implementation phase

UNIT VI MPLEMENTATION **9**

Implementation and integration phase – testing – graphical user interfaces product testing – acceptance testing – case tools for this phase – integration environment for business application- public tools infrastructure – potential problem with environment. Maintenance phase – why maintenance is necessary – case study – management – maintenance of object oriented software –maintenance skills versus development skills –reverse engineering –testing –case tools.

TOTAL:45 HOURS

Text Books:

1. Stephen R.Schach-classical and object oriented software engineering- 4th edition – McGraw hill.
2. Ivar Jacobson – object oriented software engineering – Addison Wesle

15BHC120 SOFTWARE QUALITY AND ASSURANCE 3 0 0 3

Course objective : This course introduces the basic concepts of Software Quality Assurance. To test software, process using the testing tools and to assure the software quality and standards.

UNIT 1INTRODUCTION 9

Introduction- quality and the quality system – standards and procedures technical activities. Software tasks – management responsibility – quality system – contract review – design control – document control – purchasing product identification and traceability.

UNIT IIPROCESS 9

Process control – checking – identification of testing tools – control of nonconforming product –corrective action

UNIT IIIQUALITY & SERVICES 9

Handling, storage, packing and delivery –quality records- internal quality audits –training – servicing –statistical techniques

UNIT IVINTERFACES 9

QA and new technologies –QA and Human –computer interface- process modelling – standards and procedures.

UNIT V ISO STANDARDS 9

ISO- 6001-Elements of ISO 6001- improving quality system –case study.

TOTAL : 80 HOURS

Text Books:

1. An introduction to software quality assurance and its implementation, MGH, 1664.
2. ISO 6001 software quality assurance, MGH, 1664.

15BHC121 CLIENT/SERVER COMPUTING 3 0 0 3

Course objective: This Subject deals with the Client/Server Computing, GUI. Server and client server, open systems and standards, clientrequirements, Network operating system, backup and recovery systems.

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UNIT-IINTRODUCTION TO CLIENT/SERVER COMPUTING 9

What is Client/Server Computing – Benefits of Client/Server Computing – Evolution of C/S Computing – Hardware Trends – Software Trends-Evolution of Operating Systems – N/w Trends – Business Considerations.

UNIT-II OVERVIEW OF C/S APPLICATIONS 9

Components of C/S Applications – Classes of C/S Applications – Categories of C/S Applications . Understanding C/S Computing : Dispelling the Myths – Obstacles – Upfront & Hidden – Open Systems & Standards – Standards – Setting Organizations – Factors of Success.

UNIT-IIITHE CLIENT HARDWARE & SOFTWARE 9

Client Component – Client Operating Systems – What is GUI – Database Access – Client Software Products : GUI Environments – Converting 3270/5250 Screens – Database Tools – Client Requirements : GUI Design Standards – Open GUI Standards – Interface Independence – Testing Interfaces

UNIT-IVTHE SERVER 9

Categories of Servers – Features of Server Machines – Classes of Server Machines – Server Environment : N/W Management Environment – N/W Computing Environment – Extensions – Network Operating System – Loadable Module.

UNIT-V SERVER OPERATING SYSTEM 9

OS/2 2.0 – Windows New Technology – Unix Based OS – Server Requirements : Platform Independence – Transaction Processing – Connectivity – Intelligent Database – Stored Procedure – Triggers – Load Levelling – Optimizer – Testing and Diagnostic Tools – Backup & Recovery Mechanisms

TOTAL: 45 HOURS

Text Books:

1.Patrick Smith &SteaveGuengerich, “Client/Server Computing”. PHI

2. Dawna Travis Devire, “Client/Server Computing”. TMH

Syllabus of

Generic Elective Courses

15BHC151 ENTERPRISE RESOURCE PLANNING 2 0 0 2

Course objective:
To analyze, design and propose IT solutions for the integration of business process throughout the enterprise

UNIT I INTRODUCTION 4
Business function and Business process: Functional areas and Business Process - functional area of operations - Business process - Marketing Sales – supply chain management – Accounting and finance – Human Resource – Functional areas of information system – The development of ERP system SAP R/3 – New directions in ERP – significance and benefits of ERP software and systems

UNIT IIERP AND CRM 4
Marketing information system and sales order process in ERP: sales and Distribution in ERP –Pre sales activities – sales order processing – inventory Sourcing - Delivery – Billing – payment – Customer relationship Management – benefits of CRM

UNIT III INTRODUCTION TO SAP 4
Production and supply chain management information system: Production overview – The production planning process – The SAP ERP Approach to production planning – Sales forecasting – sales and operation Planning – Demand management – Material requirement planning in SAP ERP – ERP and supplier - supply chain

UNIT IV ERP APPLICATIONS 4
Accounting in ERP: Accounting activities – using ERP for accounting Information – operational decision making problem – credit management – Industrial credit management in SAP ERP – product profitability analysis – Management reporting with ERP system – Document flow for customer Service

UNIT V HUMAN RESOURCE MANAGEMENT 4
Human resource process in ERP: HR with ERP – Advance HR features – Time management – Payroll – Travel management – Training and Development – Management by course objective – ERP process modeling

TOTAL: 20 HOURS

Text Book:

1. Enterprise Resource Planning - Ellen Monk And Bret Wagner - 3 Rd Edition

References:

1. Alexis Leon, "ERP DEMYSTIFIED", Tata McGraw Hill, Second Edition, 2008.
2. Mary Sumner, "Enterprise Resource Planning", Pearson Education, 2007.
3. Biao Fu, "SAP BW: A Step-by-Step Guide", First Edition, Pearson Education, 2000

15BHC152 INTRODUCTION TO INFORMATION TECHNOLOGY2 0 0 2

Course objective: Students will gain literacy in the underlying principles and vocabulary of Information Technology. Introduces students to the fundamental concepts in information technology (IT) that provide the technical underpinning for state-of the-art applications.

UNIT I INTRODUCTION 4

Introduction: History of Computer - Parts of Computer System – Hardware Devices – Software – Operating System – Examples of Operating systems – Computer Networking – Visual Editor

UNIT II MS OFFICE 4

Microsoft Word - Microsoft Excel –Manipulation in Excel work sheet– Microsoft PowerPoint – Microsoft Access

UNIT III INTRODUCTION TO MULTIMEDIA 4

Introduction to Multimedia – Images – Sound -Video Desktop Publishing Basics – Page layout Programs – Text Generation – Graphics for DTP - Print Production – Data Communication – Computer Networking Basics – Local Area Networking Technology and Networking Topology –Wide Area Networking Technology and Routing – Protocols and Layering – Networking Devices.

UNIT IV INTRODUCTION TO INTERNET 4

Introduction to Internet – Working of Internet- Internet Services – Internet Addressing – E-Mail Basics- Web Development Tools- Introduction to HTML

UNIT–VMANAGEMENT INFORMATION SYSTEM 4

Information System – Management Information concepts – Planning Issues and the MIS - Organizing Issues and the MIS - Control Issues and the MIS – Decision Support Systems - Programming languages - Low Level languages Basics – Data Objects, Variables and Constants – Data Types – Tamil Word Processors – Tamil Web Browsers and Web Pages- Tamil E-Mail

TOTAL: 20 HOURS

Text Book:

1. Sanjay Saxsena, "A First Course in Computer", Vikas Publishing House, 2000

References:

1.Ron Mansfield, "Working in Microsoft Office",Tata McGraw Hill, 1667

2. Linda Tway, Sapphiro Pacific Lajolla, "Multimedia in Action", Academic Press,1665

3. Neil randal "Teach yourself the internet in a week", Prentice Hall of India, Second Edition.

15BHC153 INTERNET AND ITS APPLICATIONS 2 0 0 2

Course objective: Provide a broad understanding of Internet application construction and development, Identify and examine the various technologies involved in rich Internet application development Involving E-Commerce and smart cards

UNIT I INTRODUCTION 4

Introduction to Computers Programming Language types History of Internet Personal Computers History of World Wide Web- Micro software .NET Java-Web resources.

UNIT IIINTERNET APPLICATIONS 4

Web Browsers- Internet Explorer- connecting to Internet Features of Internet explorer6 Searching the Internet- online help and tutorials- File Transmission Protocol (FTP) Browser settings.

UNIT IIIELECTRONIC MAIL 4

Attaching a file, Electronic mail creating an E-mail id sending and Receiving mails attaching a file- Instance messaging - other web browsers.

UNIT IV INTRODUCTION TO HTML 4 Introduction to HTML headers- Linking- Images-special characters and line breaks- unordered lists- simple HTML programs.

UNIT V E.COMMERCE APPLICATIONS 4

E-marketing consumer tracking Electronic advertising search engine-CRMcredit card payments Digital cash and e-wallets micro payments- smart card

TOTAL: 20 HOURS

Text Book:

1. Internet and World Wide Web Third edition H.M.Deitel, P.J. Deitel and A.B.Goldberg- PHI

References:

1. The Internet- Complete Reference Harley hahn, Tata McGraw Hill
2. Sanjay Saxsena, "A First Course in Computer", Vikas Publishing House,2000
3. Ron Mansfield, "Working in Microsoft Office",Tata Mcgraw Hill, 1667
4. Linda Tway, Sapphiro Pacific Lajolla, "Multimedia in Action", AcademicPress,1665

15BHC154 WEB TECHNOLOGY 2 0 0 2

Course objective: It is used to develop web pages and effective web Sites, it is an important application program for web developers.

UNIT I INTRODUCTION TO HTML 4

Internet Basic - Introduction to HTML - List - Creating Table - Linking document Frames - Graphics to HTML Doc - Style sheet - Style sheet basic - Add style to document - Creating Style sheet rules - Style sheet properties - Font - Text - List - Color and background color - Box - Display properties.

UNIT II INTRODUCTION AND ADVANTAGES OF JAVA SCRIPT 4

Introduction to Javascript - Advantage of Javascript - Javascript Syntax - Data type - Variable - Array - Operator and Expression - Looping Constructor - Function - Dialog box.

UNIT III JAVASCRIPT OBJECT MODEL 4

Javascript document object model - Introduction - Object in HTML - Event Handling - Window Object - Document object - Browser Object - Form Object - Navigator object Screen object - Build in Object - User defined object – Cookies

UNIT IV HTML SERVER CONTROLS 4

ASP.NET Language Structure - Page Structure - Page event, Properties & Compiler Directives. HTML server controls - Anchor, Tables, Forms, and Files. Basic Web server Controls- L.able, Textbox, Button, Image, Links, Check & Radio button, Hyperlink. Data List Web Server Controls - Check box list, Radio button list, Drop down list, List box, Data grid, Repeater

UNIT V REQUEST AND RESPONSE OBJECT 4

Request and Response Objects, Cookies, Working with Data - OLEDB connection class, command class, transaction class, data adaptor class, data set class. Advanced Issues - Email, Application Issues, Working with IIS and page Directives, Error handling. Security - Authentication, IP Address, Secure by SSL and Client Certificates.

TOTAL: 20 HOURS

Text Book:

1. Deitel&Deitel, internet&World Wide Web How to program, Pearson Education

References:

1. Bayross, Web Enable Commercial Application Development Using HTML, DHTML, Javascript, Pen CGI, BPB Publications, 2000

15BHC155 INTRODUCTION TO PHP, MYSQL 2 0 0 2

Course objective: Understand how server-side programming works on the web. PHP Basic syntax for variable types and calculations. Creating conditional structures Storing data in arrays Using PHP built-in functions and creating custom functions Understanding POST and GET in form submission.

UNIT I INTRODUCTION TO PHP 4

Introduction to PHP -How PHP works - the php.ini file - Basic PHP Syntax - PHP Tags – PHP statements and whitespace - comments - PHP functions - hello world.

UNIT II PHP VARIABLES 4

PHP open source technology - PHP for web application - variables - variables types -variable names (identifiers) - type strength - hello variables! - Variable scope – superglobal- constants variable - testing and manipulation functions.

UNIT III PHP FUNCTIONS 4

Echo,print_r() - Operators - Strings,arrays,commentes,builtin - Functions – PHP methods,functions user-defined functions - Function arguments - Returning values – variable functions -internal(built-in) functions - anonymous functions - PHP looping,Condition statements - conditional processing.

UNIT IV ENCRYPTION & FILE HANDLING 4

Login Security Authentication (users logins) – Authorization (permissions) – Encryption – Session Cookies PHP Mail,FileHandling, File Uploading.

UNIT V TABLE& DATABASES IN PHP 4

MySqlConnection – PHP- Classes Objects,Function Overriding and Overloading – PHP Framework Code Generation scripts – Web Services – Introduction to MySQL - MYSQL for Web application Creating Database – Create table – Constraints – Where Clause –Alias – Using MySQL from PHP.

TOTAL: 20 HOURS

Text Books:

1. Core PHP Programming by Leon Atkinson:Pearson Publishers
2. The complete Referance PHY by SteverHolzner: Mc Grow Hill
3. PHP 5.0 and MySql Bible Tim Converse, Joyce Park,Clark Morgan, Publishers:JohnWiley&Sons

References:

1. Beginning PHP 5.0 Database by Christopher Scollo,HarishRawat,Deepak Thomas, Publisher:WROX press
2. PHP – A beginners Guides BY: Ashok AppuPublisher : Wiley
3. MySql Bible by Steve Suehring Publisher: John Wiley &Sons
4. PHP Black Book by Peter Moulding
5. PHP 5 and Mysql – Tim converse, Joyce Park and Clark Morgan - Bible Wiley
6. Beginning PHP 5.3 by matt Doyle – By Word publication

15BHC156 BUSINESS INTELLIGENCE 2 0 0 2

Course objective: The course objective of this course is for the students to achieve a profound understanding of Business Intelligence (BI) systems in terms of its tools, current practices and impacts. The students should acquire knowledge on how to design BI solutions for different BI targets and users.

UNIT1INTRODUCTION TO BUSINESS INTELLIGENCE 4

Introduction to OLTP and OLAP, BI Definitions & Concepts, Business Applications of BI , BI Framework, Role of Data warehousing in BI, BI Infrastructure components – BI process, BI Technology , BI Roles & Responsibilities.

UNIT IIBASICS OF DATA INTEGRATION (EXTRACTION TRANSFORMATION LOADING) 4

Concepts of data integration need and advantages of using data integration, introduction to common data integration approaches, introduction to ETL using SSIS, Introduction to data quality, data profiling concepts and applications.

UNIT IIIINTRODUCTION TO MULTI-DIMENSIONAL DATA MODELING 4

Introduction to data and dimension modeling, multidimensional modeling vs. multi-dimensional modeling, concepts of dimensions, facts, cubes, attributes, hierarchies, star and snowflake schema, introduction to business metrics and KPIs, creating cubes using SSAS.

UNIT IV ENTRERPRISE REPORTING 4

Basic of Enterprise Reporting, Introduction to enterprise reporting, concepts of dashboards, balanced scorecards, introduction to SSRS Architecture, enterprise reporting using SSRS.

UNIT V: CASE STUDY 4

- A project that allows the students to apply Technical, Behavioral, Process concepts learnt in the elective course by:
    - Executing near real-life project (with large data).
    - Working in teams (Project teams will ideally comprise of 4 members).
    - Experiencing expectations from different roles.
- Project 1: Data in disparate data sources such as Excel, text file, databases etc. will be provided to the students. They will be expected to extract, cleanse, integrate and load it into the data-warehouse.
- Project 2: Design reports according to given business scenarios. The data for the report s is to be pulled from the data-warehouse built in the earlier project.

TOTAL: 20 HOURS

References:

1. Business Intelligence by David Loshin.
2. Business intelligence for the enterprise by Mike Biere.
3. Business intelligence roadmap by Larissa TerpelukMoss,ShakuAtre.
4. Successful Business intelligence: Secrets to making killer Bl applications by cindi Howson.
5. Delivering business intelligence with Microsoft SQL server 2008 by Brain, Larson.
6. Foundations of SQL server 2005 Business intelligence by Lynn Langit.
7. Information dashboard design by Stephen Few.

15BHC157 E-COMMERCE 4 0 03

Course objective: E-commerce provides entrepreneurs with a vast, evolving medium for engaging in all phases of business activity. New Business opportunities are literally evolving with the introduction of new technological developments. As pioneers in this exciting new dimension of business, students will study trends that have evolved, learn what methods and standards currently exist, learn how to analyze existing business web activity, and develop web business strategies for launching and maintaining business activities on the net

UNIT I INTRODUCTION TO ELECTRONIC COMMERCE 12

Traditional commerce and Electronic commerce-Traditional commerce-Electronic commerce-International Electronic Commerce-Economic Forces and Electronic Commerce-Transaction Cost-Markets and Hierarchies- The role of Electronic commerce- Network Economic Structures- Network Effects- Value Chains in electronic Commerce-Strategic Business Unit Value chains- Industry Value Chains- SWOT Analysis : Evaluating Business Unit opportunities- The Role of Electronic Commerce.

UNIT II TECHNOLOGY INFRASTRUCTURE 12

The Internet and World wide Web- Origins of the Internet-New Uses of the Internet-Commercial Use of the Internet-Packet Switched Network – Internet protocols-Markup languages and the web-Intranets and Extranets – Internet connection option.

UNIT III PAYMENT SYSTEMS FOR ELECTRONIC COMMERCE 12

Online payment basics- Payment cards-E-cash-Holding Electronic cash: online and offline cash-Advantages and disadvantages of electronic cash system-electronic wallets-Microsoft.NET passport-yahoo Wallet-EGML standard-stored value cards-magnetic strip cards-smart cards.

UNIT IV TECHNOLOGIES FOR ELECTRONIC COMMERCE 12

Web Server Hardware and Software- Webserver Basics- Types of web sites- web clients and web servers-Software for Webservers-website and utility programs-Webserver hardware-Web Hosting Choices.

UNIT V SECURITY THREATS TO ELECTRONIC COMMERCE 12

Internet Security Issues Overview –Computer Security Classifications- Intellectual Property threats- Threats to the security of client computers-Threats to the security of communication channels- Threats to the security of Server computers- digital Certificates

TOTAL: 60 HOURS

Text Book:

1. Electronic Commerce – Gary P. Schneider, Fourth annual Edition, Thomson Technology

References:

1. Pete Loshin, "Electronic Commerce", 4th Editition, Firewall media, An imprint of laxmi publications Pvt. Ltd, New Delhi, 2004.
2. Jeffrey F.Rayport and Bernard J.Jaworski, "Introduction to E-Commerece", 2nd Edition, Tata Mc-Graw Hill Pvt Ltd, 2003.

15BHC158 SOFTWARE PROJECT MANAGEMENT 4 0 0 3

Course objective: This course introduces the fundamental concepts of Software Project Management. It is used to understand the software life cycle to develop the software and also to improve software quality.

UNIT I SOFTWARE PROJECT MANAGEMENT 12

Introduction to Competencies - Product Development Techniques - Management Skills - Product Development Life Cycle - Software Development Process and models - The SEI CMM - International Organization for Standardization.

UNIT II DOMAIN PROCESSES 12

Managing Domain Processes - Project Selection Models - Project Portfolio Management - Financial Processes - Selecting a Project Team - Goal and Scope of the Software Project - Project Planning - Creating the Work Breakdown Structure - Approaches to Building a WBS - Project Milestones - Work Packages - Building a WBS for Software.

UNIT III SOFTWARE DEVELOPMENT 12

Tasks and Activities - Software Size and Reuse Estimating - The SEI CMM - Problems and Risks - Cost Estimation - Effort Measures - COCOMO: A Regression Model - COCOMO II - SLIM: A Mathematical Model - Organizational Planning - Project Roles and Skills Needed.

UNIT IV SCHEDULING ACTIVITIES 12

Project Management Resource Activities - Organizational Form and Structure - Software Development Dependencies - Brainstorming - Scheduling Fundamentals - PERT and CPM - Leveling Resource Assignments - Map the Schedule to a Real Calendar - Critical Chain Scheduling.

UNIT V QUALITY ASSURANCE **12**

Quality: Requirements – The SEI CMM - Guidelines - Challenges - Quality Function Deployment - Building the Software Quality Assurance - Plan - Software Configuration Management: Principles - Requirements - Planning and Organizing - Tools - Benefits - Legal Issues in Software - Case Study.

TOTAL: 60 HOURS

Text Book :

1. Robert T. Futrell, Donald F. Shafer, Linda I. Safer, "Quality Software Project Management",Pearson Education, Asia, 2002.

References :

1. PankajJalote, "Software Project Management in Practice", Addison Wesley, 2002.
2. Hughes, "Software Project Management, 3/E", Tata McGraw-Hill, 2004.

15BHC159 OPEN SOURCE TECHNOLOGY **4 0 0 3**

Course objective:Open source is an online instructional resource that can be freely used distributed and modified to create products using open source

UNIT I OPEN SOURCE **12**

Introduction: Open Source – Open Source vs. Commercial Software – What is Linux? - Free Software – Where I can use Linux? Linux Kernel – Linux Distributions

UNIT II LINUX **12**

Introduction: Linux Essential Commands - File system Concept - Standard Files - The Linux Security Model - Vi Editor - Partitions creation - Shell Introduction - String Processing - Investigating and Managing Processes - Network Clients - Installing Application

UNIT III APACHE **12**

Introduction - Apache Explained - Starting, Stopping, and Restarting Apache - Modifying the Default Configuration - Securing Apache - Set User and Group - Consider Allowing Access to Local Documentation - Don't Allow public_html Web sites - Apache control with access.

UNIT IV MySQL **12**

Introduction to MY SQL - The Show Databases and Table - The USE command - Create Database and Tables - Describe Table - Select, Insert, Update, and Delete statement - Some Administrative detail - Table Joins - Loading and Dumping a Database.

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UNIT V PHP **12**

PHP Introduction- General Syntactic Characteristics - PHP Scripting - Commenting your code - Primitives, Operations and Expressions – PHP Variables - Operations and Expressions Control Statement - Array – Functions - Basic Form Processing - File and Folder Access - Cookies - Sessions - Database Access with PHP - MySQL - MySQL Functions - Inserting Records - Selecting Records - Deleting Records - Update Records.

TOTAL: 60 HOURS

Text Book:

1. "Open Source Web Development with LAMP using Linux, Apache, MySQL, Perl and PHP", James Lee and Brent Ware, Dorling Kindersley (India) Pvt. Ltd, 2008

References:

1. "Setting up LAMP: Getting Linux, Apache, MySQL, and PHP and working Together",EricRosebrock, Eric Filson, Published by John Wiley and Sons, 2004.

Syllabus of

Ability Enhancement Core Courses

15LTA001 தமிழ்மொழி, இலக்கியவரலாறு – அறிமுகம் 5004

நோக்கம்:

தமிழ்மொழிமற்றும்இலக்கியத்தின்வரலாற்றைஅறிமுகம்செய்யும்நோக்கில்இப்பாடம்வடிவமைக்கப்பட்டுள்ளது.

தமிழ்மொழியின்வரலாற்றைஅறிவியல்கண்ணோட்டத்துடனும்மொழிக்குடும்பங்களின் அடிப்படையிலும்விளக்குகிறது. சங்கஇலக்கியம்தொடங்கி, இக்காலஇலக்கியம்வரையிலானதமிழிலக்கியவரலாற்றைஇலக்கியவரலாறுஅறிமுகப்படுத்துகின்றது.

அரசுவேலைவாய்ப்பிற்கானபோட்டித்தேர்வுகளுக்குப்பயன்படும்வகையிலும்இப்பாடம் அமைந்துள்ளது.

அலகு 1 தமிழ்மொழிவரலாறு 20

மணிநேரம்மொழிக்குடும்பம் - இந்தியமொழிக்குடும்பங்கள் - இந்தியஆட்சிமொழிகள் - திராவிடமொழிக்குடும்பங்கள் - திராவிடமொழிகளின்வகைகள் – திராவிடமொழிகளின்சிறப்புகள் - திராவிடமொழிகளின்வழங்கிடங்கள் - திராவிடமொழிகளுள்தமிழின்இடம் - தமிழ்மொழியின்சிறப்புகள் - தமிழ்பிறமொழித்தொடர்புகள்.

அலகு 2 சங்கஇலக்கியம் 20மணிநேரம்

சங்கஇலக்கியம் - எட்டுத்தொகை - நற்றிணை - குறுந்தொகை - ஐங்குறுநூறு -

பதிற்றுப்பத்து - பரிபாடல் - கலித்தொகை - அகநானூறு - புறநானூறு - பத்துப்பாட்டு – திருமுருகாற்றுப்படை – சிறுபாணாற்றுப்படை – பெரும்பாணாற்றுப்படை – பொருநராற்றுப்படை – மலைபடுகடாம் – குறிஞ்சிப்பாட்டு, முல்லைப்பாட்டு, பட்டினப்பாலை – நெடுநல்வாடை – மதுரைக்காஞ்சி.

அலகு 3 அறஇலக்கியங்களும்காப்பியங்களும் 20மணிநேரம்

களப்பிரர்காலம்விளக்கம் – நீதிஇலக்கியத்தின்சமூகத்தேவை - பதினெண்கீழ்க்கணக்குநூல்கள்அறிமுகம் - திருக்குறள், நாலடியார்.காப்பியங்கள் – ஐம்பெருங்காப்பியங்கள்மற்றும்ஐஞ்சிறுங்காப்பியங்கள்அறிமுகம் – காப்பியஇலக்கணம் - சிலப்பதிகாரம் – மணிமேகலை – சீவகசிந்தாமணி – வளையாபதி – குண்டலகேசி.

அலகு 4 பக்திஇலக்கியங்களும்சிற்றிலக்கியங்களும் 20 மணிநேரம்

தமிழகப்பக்திஇயக்கங்கள் - பக்திஇலக்கியங்கள் - சைவஇலக்கியம் - நாயன்மார்கள்அறுபத்துமூவர் - சமயக்குரவர்நால்வர் - வைணவஇலக்கியம் - பன்னிருஆழ்வார்கள் - முதல்மூன்றுஆழ்வார்கள்.சிற்றிலக்கியக்காலம் - சிற்றிலக்கியங்கள் - வகைகள் - பரணி - கலிங்கத்துப்பரணி - குறவஞ்சி - குற்றாலக்குறவஞ்சி - பிள்ளைத்தமிழ் - மீனாட்சியம்மைப்பிள்ளைத்தமிழ் - தூது - தமிழ்விடுதூது - கலம்பகம் - நந்திக்கலம்பகம் - பள்ளு - முக்கூடற்பள்ளு.

அலகு 5 இக்காலஇலக்கியங்கள் 20 மணிநேரம்

நவீனகாலம் – நவீனஇலக்கியம் – உள்ளடக்கம் - புதுக்கவிதை - தோற்றமும்வளர்ச்சியும் - நாவல் - முதல்மூன்றுநாவல்கள் – நாவலின்வகைகள் - பொழுதுபோக்குநாவல்கள் - வரலாற்றுநாவல்கள் - சமூகநாவல்கள் - இக்காலநாவல்கள் - மொழிபெயர்ப்புநாவல்கள் - சிறுகதை – வகைகளும்வளர்ச்சியும் – நாடகம் – காலந்தோறும்நாடகங்கள் - புராணஇதிகாசநாடகங்கள் - சமூகநாடகங்கள் - வரலாற்றுநாடகங்கள் – மொழிபெயர்ப்புநாடகங்கள் - நகைச்சுவைநாடகங்கள்.

மொத்தம்: 60 மணிநேரம்

பார்வைநூல்கள்

1. அகத்தியலிங்கம். ச., "திராவிடமொழிகள்தொகுதி 1", மணிவாசகர்பதிப்பகம், முதற்பதிப்பு, 1978.

2. சக்திவேல். சு., "தமிழ்மொழிவரலாறு", மணிவாசகர்பதிப்பகம், முதற்பதிப்பு 1998.

3. பூவண்ணன், " தமிழ்இலக்கியவரலாறு", சைவசித்தாந்தநூற்பதிப்புக்கழகம், முதற்பதிப்பு, 1998.

4. வரதராசன். மு., "இலக்கியவரலாறு", சாகித்யஅகாதெமி, ஒன்பதாம்பதிப்பு, 1994.

5. விமலானந்தம். மது.ச., "இலக்கியவரலாறு", பாரிநிலையம், மறுபதிப்பு, 2008.

15LHN001 HINDI I 5 0 0 4

(Syllabus for the I year I semester Common to all UG courses)

Course Objective: To train the students in the use of Karyalayin Basha.To enable the students to develop the communication skill in Hindi language.

UNIT I GADYA AUR KARYALAYIN BASHA **20**

Mamata, -Yogyatha evam vyavasay kaa Chunaav Paribashik shabdavalil prashasanik vakyansh,padanam,

UNIT II GADYA AUR SARKARI PATRA **20**

Rajneethi kaa Bhantwara, , Samanya sarkari patra,gyapan,karyalay gyapan

UNIT III GADYA AUR SARKARI PATRA **20**

Computer nayi krantee kee dastak, , Karyalay aadesh,Ardha sarkari patra paripatra,Adhisoochana

UNIT IVGADYA AUR SAMANYA PATRA **20**

Raspriya, Samanya patra- chutti patra,sampadak ke naam patra, shikayati patra, pustak vikretha ke naam patra

UNIT V VYAVASAAYIK PATRA **20**

Bankon mein bach khaata kholne ke liye – chek buk ke liye, run lene hetu, chek bukGum ho jane hetu, kitaabon kaa krayadesh

TOTAL: 100 HOURS

Text Book:

1. Gadya Aur Prayojanmulak Hindi ed by Dr.N.Lavanya Mayura Publishers, edition 2008

15LFR001 FRENCH I 5 0 0 4

(Syllabus for the I year I semester common to all UG courses)

Course Objective:
To introduce French Language.
To enable the students to understand and to acquire the basic knowledge of French Language with the elementary grammar.

UNIT I INTRODUCTION **20**
Introduction - Alphabet – Comment prononcer, écrire et lire les mots- Base : Les prénoms personnel de 1er, 2ème et 3ème personnes – Conjugaisons les verbes être et avoir en forme affirmative, négative et interrogative

UNIT II LECONS 1- 3 **20**
Leçons 1.Premiers mots en français,- 2. Les hommes sont difficiles,- 3 Vive la liberté- Réponses aux questions tirés de la leçon - Grammaire : Les adjectives masculines ou féminines – Les articles définis et indéfinis - Singuliers et pluriels

UNIT III LECONS 4- 6 **20**
Leçons 4. L'heure, C'est l ; heure,- 5. Elle va revoir sa Normandie,- 6 .Mettez –vous d'accord groupe de nom - Réponses aux questions tirés de la leçon - Grammaire : A placer et accorder l'adjectif en groupe de nom- Préposition de lieu –A écrire les nombres et l'heure en français

UNIT IVLECONS 7- 9 **20**
Leçons7. Trois visages de l'aventure,- 8. A moi, Auvergne,- 9. Recit de voyage - Réponses aux questions tirés de la leçon - Grammaire : Adjectif possessif – Les Phrases au Présent de l'indicatif - Les phrases avec les verbes pronominaux au présent

UNIT V COMPOSITION **20**
A écrire une lettre à un ami l'invitant à une célébration différente ex : mariage – A faire le dialogue - A lire le passage et répondre aux questions

TOTAL: 100 HOURS

Text Book:

1. Jacky GIRARDER & Jean Marie GRIDLIG, « Méthode de FrançaisPANORAMA », Clé Intérnationale , Goyal Publication, New Delhi.,Edition 2004

References:

1. DONDO Mathurin , " Modern French Course", Oxford University Press.,New Delhi., Edition 1997.

2. Nitya Vijayakumar, "Get Ready French Grammar – Elementary", GoyalPublications, New Delhi., Edition 2010

15LEN001 FOUNDATION COURSE ENGLISH –I 5 0 0 4

Course Objective: To enable the students to develop their communication skills effectively. To make students familiar with the English Language. To enrich vocabulary in EnglishTo develop communicative competent

UNIT I DETAILED POEMS I **20**

1. On His Blindness - John Milton
2. The Village Schoolmaster - Oliver Goldsmith
3. The Daffodils - William Wordsworth

UNIT II DETAILED POEMS II **20**

4. Night and Death - Joseph Blanco White
5. The Ballad of Father Gilligan - W.B.Yeats

UNIT III PROSE **20**

1. Martin Luther King Jr. - Coretta s King
2. Albert Shweitzer - Norman Wymar
3. Stanley Finds Livingstone - Lawrence Wilson
4. Srinivasa Ramanujan - C.P. Snow
5. My Days - R.K. Narayan

UNIT IV GRAMMAR **20**

1. Articles
2. Prepositions
3. Tenses
4. Wh - Questions
5. Synonyms and Antonyms
6. One Word Substitution

UNIT V COMPOSITION **20**

7. Reading Comprehension
8. Filling up Forms
9. Railway Reservation/ Cancellation Forms
10. Bank-Chalan
11. Convocation Form
12. Money Order Form

TOTAL: 80 HOURS

Text Book:

1. Mahadevan, Usha. *Empower with English, Sun Beams - 1*. Emerald Pub:

15LTA002 தமிழிலக்கியம்5 0 0 4

நோக்கம்:

சங்ககாலம்தொடங்கிதற்காலம்வரையிலும்தமிழில்உள்ளபடைப்பிலக்கியங்களைஇப் பாடம்அறிமுகம்செய்கின்றது.

தமிழ்இலக்கியத்தில்தேர்ந்தெடுக்கப்பட்டமிகமுக்கியமானசெய்யுட்கள், கவிதைகள், கதைகள், உரைநடைஆகியவற்றைக்கொண்டுஇப்பாடம்கட்டமைக்கப்பட்டுள்ளது.

மாணாக்கரிடம்இலக்கியத்தேடலைஉருவாக்குவதும்,

தற்சார்புடையஅறிவைமேம்படுத்துவதும்இப்பாடத்தின்நோக்கமாகும்.

அலகு 1 செவ்வியல்இலக்கியங்கள் 20 மணிநேரம்

திருக்குறள்- அன்புடைமை, ஒழுக்கமுடைமை, பெரியாரைத்துணைக்கோடல் – மூன்றுஅதிகாரங்கள்முழுமையும்.

புறநானூறு -பாடல்எண்: 18, 55, 182, 183, 192 – ஐந்துபாடல்கள்.

குறுந்தொகை- பாடல்எண்: 2, 167, 27, 202, 184 - ஐந்துபாடல்கள்.

அலகு 2 காப்பியங்கள் 20 மணிநேரம்

சிலப்பதிகாரம்- கனாத்திறம்உரைத்தக்காதைமுழுவதும்.மணிமேகலை - பவத்திறம்அறுகஎனப்பாவைநோற்றகாதைமுழுவதும்.கம்பராமாயணம் - மந்தரைச்சூழ்ச்சிப்படலம் (தேர்ந்தெடுக்கப்பட்டஒன்பதுபாடல்கள்).

அலகு 3 கவிதையும்புதுக்கவிதையும் 20 மணிநேரம்

பாரதிதாசனின் ‘தமிழியக்கம்’ - (i) நெஞ்சுபதைக்கும்நிலை - (ii) இருப்பதைவிடஇறப்பதுநன்று - இரண்டுகவிதைகள்.ஈரோடுதமிழன்பனின், “அந்தநந்தனைஎரித்தநெருப்பின்மிச்சம்” என்னும்தொகுதியில்இடம்பெற்றுள்ள ‘விடிகிறது’ என்னும்புதுக்கவிதை.

அலகு 4 சிறுகதைகள் 20 மணிநேரம்

தி. ஜானகிராமனின் ‘சக்திவைத்தியம்’

கி. ராஜநாராயணனின் ‘கதவு’ -இரண்டுகதைகள்

அலகு 5 உரைநடை 20 மணிநேரம்

வைரமுத்துஎழுதிய ‘சிற்பியேஉன்னைச்செதுக்குகிறேன்’ முழுவதும்

மொத்தம்: 60 மணிநேரம்

பாடநூல்கள்

1. இரவிச்சந்திரன். சு. (ப.ஆ), ‘‘செய்யுள்திரட்டு’’, வேல்ஸ்பல்கலைக்கழகம், முதற்பதிப்பு, 2008.

2. வைரமுத்து. இரா., ‘‘சிற்பியேஉன்னைச்செதுக்குகிறேன்’’, திருமகள்நிலையம், பதினேழாம்பதிப்பு, 2007.

பார்வைநூல்கள்

1. பாலச்சந்திரன்.சு., ‘‘இலக்கியத்திறனாய்வு’’, நியூசெஞ்சுரிபுக்ஹவுஸ், பத்தாம்பதிப்பு, 2007.

2. மாதையன்.பெ., ‘‘தமிழ்ச்செவ்வியல்படைப்புகள்’’, நியூசெஞ்சுரிபுக்ஹவுஸ், முதல்பதிப்பு, 2009.

3. வரதராசன்.மு., ‘‘குறள்காட்டும்காதலர்’’, பாரிநிலையம், மறுபதிப்பு, 2005.

15LHN002 HINDI II 5 0 0 4

(Syllabus for the I year II semester common to all UG courses)

Course Objective: To enable the students to have the knowledge in contemporary literature of the modern era. It also provides an idea how translation to be effected.

UNIT I KAHANI AUR EKANKI

Poos Kee Raat.,- Duzhazar **20**

UNIT II EKANKI AUR KAHANI

Vaapasi, Akeli, .Akbhari vigyapan **20**

UNIT IIIKAHANI AUR ANUVAD

Sharandatha -Anuvad anuched angreji se hindi me karne ke liye. **20**

UNIT IVEKANKI AUR ANUVAD

Raat ke Raahi Main Bhi Maanav hoonAnuvad anuched angreji se hindi me karne ke liye.

UNIT VKAHANI, EKANKI AUR ANUVAD **20**

Parda -Yeh Meri Janma Bhoomi Hai -anuvad anuched angreji se hindi me karne ke liye.

TOTAL: 100 HOURS

Text Book:

1.Sankalan Kahani evam Ekankied by Dr.N.Lavanya, Mayura Publishers,

edition 2010

15LFR002 FRENCH II 5 0 0 4

(Syllabus for the I year II semester common to all UG courses)

Course Objective:

To fortify the grammar and vocabulary skills of the students.
Enable the students have an idea of the French Culture and Civilization

UNIT I LECONS 10 – 11 **20**

Leçons : 10. Les affaires marchent,- 11. Un après-midi à problèmes- Réponsesaux questions tirés de la leçon - Grammaire : Présent progressif, passé récent ou future proche - omplément d'objet directe - Complément d'objetindirecte .

UNIT II LECONS 12 – 13 **20**

Leçons : 12. Tout est bien qui fini bien,- 13. Aux armes citoyens – Réponsesaux questions tirés de la leçon - Grammaire : Les pronoms « en ou y » rapporter des paroles - Les pronoms relatifs que, qui, ou où ,

UNIT III LECONS 14 – 15 **20**

Leçons 14. Qui ne risqué rien n'a rien,- 15. La fortune sourit aux audacieux –Réponses aux questions tirés de la leçon - Grammaire : Comparaison – Les phrases au passé composé

UNIT IV LECONS 16 – 18 **20**

Leçons16 La publicite et nos reves 17 La france le monde 18 Campagnepublicitaire Réponses aux questions tirés de la leçon - Grammaire :- Lesphrases à l' Imparfait - Les phrases au Future

UNIT V COMPOSITION **20**

A écrire une lettre de regret// refus à un ami concernant l'invitation d'une célébration reçue- A écrire un essaie sur un sujet générale - A lire le passage etrépondre aux questions

TOTAL: 100 HOURS

Text Book:

1. Jacky GIRARDER & Jean Marie GRIDLIG, « Méthode de Français PANORAMA », Clé Intérnationale , Goyal Publication, New Delhi., Edition 2004

References:

1. DONDO Mathurin, " Modern French Course", Oxford University Press, New Delhi., Edition 1997

2. Paul Chinnappane " Grammaire Française Facile" , Saraswathi House Pvt Ltd, New Delhi, Edition 2010

15LEN002 Foundation Course English –II 5 0 0 4

Course Objective: - To enable the students to develop their communication skills effectively. To make students familiar with the English Language. To enrich vocabulary in English.To develop communicative competent

UNIT I PROSE-I **20**

1. On Saying 'Please' - A.G. Gardiner
2. Women, Not the Weaker Sex - M.K. Gandhi
3. The Sky is the Limit - Kalpana Chawla

UNIT – II PROSE-II **20**

4. Polluting the World - Edgar I. Baker
5. Dimensions of Creativity - Dr. A. P. J. Abdul Kalam
6. The Message of Visva - Bharati

UNIT III SHORT STORIES **20**

1. Open Window - H. H. Munro (Saki)
2. The Lion's Share - Arnold Bennett
3. The Sparrows - K.A. Abbas
4. The Cop and The Anthem - O- Henry
5. The Necklace - Guyde Maupassant

UNIT IV FUNDAMENTAL GRAMMAR SKILLS **20**

1. Question Tags
2. Concord
3. Reported Speech
4. Idiom and Phrases

UNIT – V ADVANCED GRAMMAR SKILLS **20**

5. Conditional Clauses
6. Cause and Effect
7. Simple, Complex, Compound
8. Framming Questions

TOTAL: 80 HOURS

Text Book:

1. Rao, Shoba B. *Empower with English, Sun Beams - II*. Emerald Pub: Chennai. 2012. Print.

15EVS201 ENVIRONMENTAL STUDIES 2 0 0 2

UNIT I INTRODUCTION 4

The multidisciplinary nature of Environment of studies – Definition - Scope and Importance - Need for Public Awareness.

UNIT IINATURAL RESOURCES 4

Natural resources and associated problem - Renewable and Non- Renewable resources:.- Forest Resources-Mineral Resources-Food Resources - Energy Resources -Land ResourcesRole of an individual in conservation of natural resources-Equitable use of resources of sustainable lifestyles.

UNIT III ECO SYSTEM 4

Concepts of an Ecosystem - Structure and Functions of an Ecosystem - Procedures, Consumers and Decomposers - Energy flow in the ecosystem - Food chains, Food webs and ecological pyramids - Introduction, types, Characteristics features - Structures and functions of the following ecosystem :Forest ecosystem, Grass land ecosystem, Desert ecosystem, Aquatic ecosystem.

UNIT IVBIODIVERSITY AND ITS CONSERVATION 4

Introduction - Definition, genetic, species and ecosystem diversity - Bio-geographical classification of India - Value of Bio-diversity - Bio-diversity at global, National and Local levels - India s a mega-diversity nation - Hot-Spots of diversity - Threats to diversity: Habitats loss, poaching of Wild life, man wild life conflicts - Endangered and Endemic species of India In-Situ conversation of Bio-diversity.

UNIT V ENVIRONMENTAL POLLUTION AND HUMAN RIGHTS 4

Definition - Causes, effects and control measures of : Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution, Nuclear pollution - Soil pollution management: Causes, effects and control measures of urban and industrial wastes - Role of an individual in prevention of pollution - Pollution – Case studies -Disaster Management – Flood, earthquakes, cyclone of landslides Environment and human health - Human rights - Value education - HIV/AIDS - Women and child welfare - Role of information technology in Environment and Human health - Case study

.

TOTAL: 60 HOURS

Textbooks:

1. Dr. Shradha sinha, Dr.Manisha shukula, Dr. Ranjana Shukla

References:

Environmental studies by:

1. Dr. N. Arumugam, Prof.V. Kumaresan
2. Thangamani & Shyamala Thangamani.

Syllabus of Skill Enhancement Course

15LEN003 ENGLISH PAPER-III 2 0 0 2

Course Objective: -

-To train the students in the use of the english language in varied literary and non literary context
-To teach them soft skills and strength their foundation in grammar and composition
-To elevate their comprehension skills

UNIT I PROSE I **4**

1. Spoon Feeding - W. R. Inge
2. Reading for Pleasure - L. A. G. Strong
3. The Challenge of our Time - E. M. Forster

UNIT II PROSE II **4**

4. Human Values in Education - V. K. Gokak
5. Human Rights - Sivagami Paramasivam

UNIT III SHORT STORIES **4**

1. Comrades - Nanine Gordimer
2. Games at Twilight - Anita Desai
3. The Gateman's Gift - R.K. Narayan

UNIT IV PRIMARY COMPOSITION EXERCISES **4**

1. Letter Writing
2. Comprehension

UNIT V ADVANCEDCOMPOSITION EXERCISES **4**

3. Precis-Writing
4. Resume Writing
5. Report Writing

TOTAL:20 HOURS

Text Books:

1. Subramanian, S. Dr. *Words of Wisdom*. An Anthology of Modern Prose. Anu Chitra Pub., Chennai. 2003. P.

2. Subramanian, A, E. *Gifts to Posterity.* An Anthology of Modern Short Stories. Anu Chitra Pub., Chennai. 2003. P

15NSS255 NATIONAL SERVICE SCHEME PAPER -12 0 02

UNIT IENVIRONMENT ISSUES 4

Environment conservation, enrichment and Sustainability - Climate change - Waste management - Natural resource management - (Rain water harvesting, energy conservation, waste land development, soil conservations and afforestation)

UNIT II DISASTER MANAGEMENT 4

Introduction to Disaster Management, classification of disasters - Role of youth in Disaster Management

UNIT III PROJECT CYCLE MANAGEMENT 4

Project planning - Project implementation - Project monitoring -Project evaluation: impact assessment

UNIT IV DOCUMENTATION AND REPORTING 4

Collection and analysis of date - Preparation of documentation/reports - Dissemination of documents/reports

UNIT VPROJECT WORK/ PRACTICAL 4

Workshops/seminars on personality development and improvement of communication skills.

TOTAL:20 HOURS

15LEN004 ENGLISH PAPER- IV 2 0 0 2

Course Objective: -

To train the students in the use of the english language in varied literary and non literary context, To teach them soft skills and strength their foundation in grammar and composition, To elevate their comprehension skills

UNIT I PROSE I **4**

1. The Complete Man - Prince Philip
2. Try Prayer Power - Norman Vincent Peale
3. On Not Answering The Telephone - W. Plomer

UNIT II PROSE II **4**

4. Science, humanities and religion - S. Radhakrishnan
5. The Reason - E. V. Lucas

UNIT III SHORT STORIES **4**

1. The Ant and the Grasshopper - W. Somerset Maugham
2. How much land does a man need - Leo Tolstoy
3. The Dying Detective - Sir Arthur Conan Doyle

UNIT IV PRIMARY COMPOSITION EXERCISES **4**

1. Business Letters
2. Hints Development

UNIT V ADVANCEDCOMPOSITION EXERCISES **4**

3. Paraphrasing
4. Writing Abstract
5. Dialogue Writing

TOTAL: 20 HOURS

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