VEER NARMAD SOUTH GUJARAT UNIVERSITY – SURAT

S Y B. Sc. (Computer Science)

Syllabus for S. Y. B. Sc. Semester-IV

Effective From: June 2018

Course: 401: Data Structure

Course Code	401
Course Title	Data Structure using C++
Credit	2
Teaching per Week	2 Hrs
Minimum weeks per Semester	15 (Including Class work, examination, preparation, holidays etc.)
Last Review / Revision	June, 2015
Purpose of Course	This course imparts the knowledge of Data Structure. The concepts of Primitive and non-primitive data structures are covered in this course. It covers concepts of Arrays, Stack, Queue, Link list and sorting searching methods. The course is aimed to give inner depth and practical implementation of non-primitive data structures and its related applications.
Course Objective	To make students understand concepts of Primitive and non-primitive Data structure. To make students understand concepts of stack, queue and types of queues. To make students understand the implementation of Link-list and related applications. To make students understand concept of polish notation. To make students work with searching and sorting techniques.
Pr-requisite	C++ programming Language.
Course Out come	At the end of the course, student is expected to have clear concepts about the primitive and non-primitive data structure. Implementation of non-primitive data structure. Application implementation using stack, queue, link list.
Course Content	**Unit-1:** 1. Primitive Data Structures and Operations on them **Unit-2:** 2. Non-Primitive Data Structures 2.1 Arrays 2.1.1 Single and Multiple array 2.1.2 Storage Representation and Operations 2.2 Sorting Techniques 2.2.1 Introduction 2.2.2 Types of Sorting (Insertion, Selection, Bubble) 2.3 Search Techniques 2.3.1 Introduction 2.3.2 Types of Searching (Sequential and Binary) **Unit-3:** 3.1 Stack 3.1.1 Operation on Stack 3.1.2 Application in Recursion, Polish notation etc. 3.2 Queues 3.2.1 Types of Queue 3.2.1.1 Simple Queue 3.2.1.2 Circular Queue 3.2.1.3 Introduction of Double ended Queue 3.3.2 Operation on Queue & Applications.

	Unit-4: 4.1 Linked Lists 4.4.1 Types of Linked List 4.4.2 Operations on Singly Linked Lists, Doubly Link List, Singly Circular List
Reference Books:	1. An Introduction to Data Structure with Applications : Trembley & Sorenson – McGraw Hill 2. Data Structures Using C & C++ - Langsam, Augenstein & Tanenbaum - PHI 3. Wirth, Niclaus, Algorith+Data Structure Programs, Prentice Hall. 4. Horwith E and Sahni S, Fundamental of Data Structure, Computer Science Press. 5. Aho A.V., Hopcrott and Ullman, Data Structure and Algorithms , Addition – Wesslely.
Teaching Methodology	Discussion, Independent study, Seminars and Assignment
Evaluation Method	30% Internal assessment is based on class attendance, participation, class test, quiz, assignment, seminar, internal examination etc. 70% assessment is based on end semester written examination

Note: Practical should be done using C++

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S Y B. Sc. (Computer Science)

Syllabus for S. Y. B. Sc. Semester-IV

Effective From:June 2018

Course: 402: Web Development using C#.Net

Course Code	402
Course Title	Web Development using C#.Net
Credit	2
Teaching per Week	2 Hrs
Minimum weeks per Semester	15 (Including Class work, examination, preparation, holidays etc.)
Last Review / Revision	June 2015
Purpose of Course	This course imparts the knowledge of web programming based on .NET technology. It covers the concepts of ASP.NET server controls, Client server communication, ADO .NET technology. It covers concepts of web config. The course is aimed to give inner depth of ASP .NET technology.
Course Objective	To make students understand concepts of ASP .NET. To make students understand concepts of Server controls. To make students understand the basic concepts of client server communication. To make students understand of ADO .NET technology. To make students understand concepts of web config.
Pre-requisite	Concepts of .NET technology Framework and CLR.
Course Out come	At the end of the course, student is expected to have clear concepts about the ASP .NET. Students can apply .NET technology for implementing applications.
Course Content	**Unit-1:** 1.INTRODUCTION TO ASP.NET 1.1. ASP.NET as Web Development Framework 1.2. ASP.NET Application Structure & State 1.4.1 Files & Directories 1.4.2 Web.Config File **Unit-2:** 2. ASP.NET Controls 2.1. Web Forms : Standard Controls 2.2. Navigation Controls: TreeView, Menu, SiteMapPath 2.3. Validation Controls 2.4. Designing with ASP.NET 2.6.1 Master Page, Base Page 2.6.2 Themes & Skins 2.6.3 CSS with ASP.NET 2.7 Introduction to AJAX server control toolkit **Unit-3:** 3. State Management in ASP.NET 3.1. Communication with Web browser 3.2. Request, Response Object 3.3. Cookies, Query String

	3.4. Session Management & Variable Scope **Unit-4:** 4. Data Access Using ASP.NET 4.1. Data Access using Provider, Adapter, Reader, Command Objects 4.2. Data Controls: GridView, FormView 4.3. Data Binding 4.3.1. Data Binding events
Reference Books:	1. Beginning ASP.NET 4.0 in C# and VB by Imar Spaanjaars Wrox Pubs. 2. ASP.NET 4.0 – Black Book - Dream Tech 3. Professional ASP.NET in C# and VB Wrox Pubs. Web References: http://www.asp.net http://www.w3cschool.com for ASP.NET http://www.tutorialspoint.com for ASP.NET
Teaching Methodology	Discussion, Independent study, Seminars and Assignment
Evaluation Method	30% Internal assessment is based on class attendance, participation, class test, quiz, assignment, seminar, internal examination etc. 70% assessment is based on end semester written examination

Effective From:June 2018
Course: 403: Relational Database Management System - II

Course Code	403
Course Title	Relational Database Management System - II
Credit	2
Teaching per Week	2 Hrs
Minimum weeks per Semester	15 (Including Class work, examination, preparation, holidays etc.)
Last Review / Revision	June 2015
Purpose of Course	This course imparts the knowledge of Relational Database Management System. The concepts of transaction and concurrency control. Understanding of PL/SQL blocks structure. Exception handling mechanism and concept of package is covered. The course is aimed to give inner depth of Relational Database Management system using.
Course Objective	To make students understand concepts of PL/SQL . To make students understand concepts of functions, procedures and triggers. To make students understand the basic concepts of cursors and their types. To make students understand function of Exception handling. To make students understand concepts of package.
Pre-requisite	Concepts of Database management System and SQL.
Course Out come	At the end of the course, student is expected to have clear concepts about the Transaction concepts, Concurrency control, PL/SQL block structure, Error Handling , Exception handling and package
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Course Content	**Unit-1: Relational Database Design** 1.1 Functional Dependencies 1.2 Need for Normalization 1.3 Normal forms (1NF, 2NF, 3NF and B.C.N.F.) 1.4 Data Dictionary 1.5 Tables, Table spaces & Data files, Views. **Unit 2 :Advanced SQL** 2.1 Retrieval of information from tables: GROUP BY clause, HAVING clause 2.2 Subqueries : DISTINCT with subqueries, Predicates with subqueries, Aggregate Functions in subqueries, Correlated subqueries, Correlating tables to itself, Correlated subqueries in HAVING, UNION, INTERSECT,NOT IN. 2.3 CREAT VIEW Command : Updating views, Group views and Joins, Views and sub queries, Changing values through views, Grant command, using ALL and PUBLIC arguments, GRANT and REVOKE OPTION. **Unit-3:**PL/SQL: 3.1. PL/SQL Block Structure 3.1.1. Using Variables,, Constants and Data Type 3.1.2. User Defined Record 3.1.3. Assigning Values to Variables 3.1.4. Control Statements (IF…THEN statement, Loop, FOR...Loop, While Loop) 3.1.5 User-Defined RECORD and TABLE data types. 3.1.6 Concepts of Cursor

	3.1.6.1 Types of Cursors 3.1.6.2 Handling Cursors **Unit 4 :PL/SQL Programs** 3.2.1Anonymous PL/SQL Blocks 3.2.2Procedures, Functions, Triggers 3.2.3 Packages
Reference Books:	1. Henry Kroth & Silbershats, Database System Concept. 2. C.J. Date, Introduction to Database Design, Addition Wesley, Nasora. 3. Martin Gruber, Understanding SQL, BPB Pub., New Delhi. 4. Ivan Baross, SQL, PL/SQL The Programming Language of ORACLE, BPB Pub., New Delhi. 5. James Martin, Computer Database Organization, PHI, New Delhi. 6. J Ullman, Principles of Database Systems, Galgotia Pub., New Delhi. 7. ORACLE Manuals. 8. SQL Manuals 9. George Koch and Kevin Loney, ORACLE 8 The Complete Reference, ORACLE Press, TMH, Delhi. 10. Oracle PL/SQL programming - Oracle press - Tata MegrawHill. 11. Microsoft Sql server - Pretince hall of India.
Teaching Methodology	Discussion, Independent study, Seminars and Assignment
Evaluation Method	30% Internal assessment is based on class attendance, participation, class test, quiz, assignment, seminar, internal examination etc. 70% assessment is based on end semester written examination