SARDAR PATEL UNIVERSITY
Course: T. Y. B. Sc Computer Science
CS-301 – Business Applications Through DBMS
Effective from: June 2005

No. of Lectures per week: 3

External Marks: 80
Internal Marks : 40
Total Marks   :120

University exam duration 3 hours.

Unit-I	**Business Application – I**
	- Definition of Business & types of Organizations - Sole proprietorship - Partnership - Forms of Business Organization - Choice of Business - Division of Business - Purchases - Preparing Purchase document (indent, RR,PO) - Inventory Control & Management/Sales & Invoicing - Invoices, Credit notes & Debit notes, Receipts, Order Forms - Importance of Inventory control - Definition of lead time, Buffer Stock, Maximum Stock, Record level, Economic order quantity, Reorder quantity. - Indian Tax Structure - Method of tax calculation for income from salary with example - Definition & Terminology of Accounting - Definition of accounting, Bookkeeping, Capital, Asset, Liabilities, Drawings, Creditors, Debts, goods debtors & due amount, Bad Debts recovered, Solvent, Insolvent, Expenditure, Income, Trade Discount, Cash discount - Classification of accounts - Objectives of accounting - Advantages and limitations of accounting
Unit-II	**Business Application – II**
	- Basic rule of accounting - Meaning of Journal, Entries of journal with simple examples - Posting of entries from journal - Subsidiary books (cash books, bank books, petty cash book, purchase book, sales book, journal proper) with examples - Posting of entries from subsidiary books - Trial balance (Concept with examples) - Advantage and limitation of trial balance - Entries of trading A/C, profit & loss A/C and balance sheet - Difference between trial balance sheet - Closing entries of trading A/C & profit & loss A/C - Adjustment Entries - Outstanding expense, outstanding Incomes or Accured Income - Prepaid expensed or unexired expenses, Bad debts, Depreciations - Incomes received in advance - Interest on capital, Interest on Drawings, Provision for Bad Debts, Provision for discount

Unit-III	**Database Management System**
	- Meaning & importance of database
	- Commands
	- Create, edit, modify structure, clear, display, structure, quit, append, close, database, clear all, close all, skip, locate, change, browse, replace, delete, recall, pack, dir, display files, zap, list files, display status, display memory, go, ?, ??,???, input, accept, copy file, rename, copy structure, wait
	- Setting environment variables
	- Set talk, set echo, set status, set default, set bell, set step, set clock, set country, set date, set printer, set device, set alternate, set carry, set cursor, set escape, set unique, set color, set decimal, set deleted, set delimiters, set margins, set message, set path
	- Definition of variable, store, all operators and expressions, date(), str(), substr(), space(), replicate(), chr(), asc(), time(), day(), month(), cmonth(), year(), dtoc(), cdow(), ctod(), dow(), sqrt(),log(), int(), abs(), round(), inkey(), curdir(), at(), stuff(), found(), recno(), recount(), resize(), readkey(), val().
Unit-IV	**Organization and maintaining database**
	- Meaning of sorting, SORT with example
	- Meaning of Indexing , INDEX, REINDEX
	- Compound Index & Structural Index
	- Difference between SORT & INDEX
	- Find & seek, set order, set index
	- Meaning of command file, modify command, EOF(), BOF(), LOOP, EXIT.
	- DO WHILE..ENDDO, If…ENDIF, IF…ELSE…ENDIF (Nested IF)
	- FOR..ENDFOR, SCAN…ENDSCAN, TEXT…ENDTEXT
	- Concept of multiple databases, opening multiple databases, selecting work areas, set relation
	- @ SAY command, get, read
	- Handling screen display (custom screens
	- Small programs using above features
Unit-V	**Handling Different types of files**
	- <u>Command File</u>
	- Defines relations, update, append from, copy to, join, macro substitution.
	- <u>Report File</u>
	- Creating report using the report writer (Create, modify)
	- <u>Label File</u>
	- Creating Label using create label.
	- <u>Procedure File</u>
	- Meaning and importance of procedure file
	- Defining procedure with or without parameters, set procedure
	- Pad definitions – Creating & modifying pad
Unit-IV	**Array**
	- Dimension statement, Scatter, Gather, copy to array, append from array, save to, rest from, release all, clear memory
	Macros
	- Creating, editing, recording, saving and restoring, closing macros
	Window Definition

	- Define window, activate window, deactivate window, hide window, release window - @...prompt, define menu, define pad, on selection, release menu. **Popup Definition** - Define popup, define bar, on selection, activate popup, release popup, assigning hot key and message to bar, enabling and disabling bars. Defining a title and footer for popup, nested popups

TEXT BOOKS
1. T.S. Grewal : Double Entry Bookkeeping
   Sultan Chand & Sons Publication
2. R.K. Taxali : Programming in Foxpro 2.5

REFERENCE BOOKS

1. Charles Siegel : Mastering Foxpro   BPB Publications
2. Prof. S. A. Sherlekar : Business Organization and Management
3. Bussett : Computerised Accounting

Course: T. Y. B. Sc Computer Science
CS-302 – Data Structures and Programming using C++
Effective from :June 2005

No. of Lectures per week: 3

External Marks: 80
Internal Marks : 40
Total Marks   :120

University exam duration 3 hours.

Unit-I	**Fundamentals of Programming**
	- Concept of Procedural, structured and object oriented programming.
	- Concept of Encapsulation, Data hiding, Inheritance and Polymorphism.
	- History of C++ and is object –oriented programming techniques.
	- Classes and Objects.
	- Advantages of object-oriented programming over procedural languages, parts of C++ program
	- Data types, Variable and Constants, Expression and statements, logical, relational, mathematical operators, tenery operator.
	- Simple I/O statements – reading and writing, Statement for formatted I/O. Usage of header files using INCLUDE statement.
Unit-II	**Control Statements, Array, Structures and Classes**
Unit-III	**Functions and Pointer**
	- Function Definition: Declaring and defining function, Passing of parameters, Passing structure variables as argument, passing address (passing by reference), function with arguments, Overloading functions, Inline functions, Storage Classes and Static Storage Class.
Unit-IV	**Primitive data structures, Arrays & Stack**
Unit-V	**Queues & List**
	- Queues
	- Operations on queue (insert, delete)
	- Circular queue (insert, delete)
	- DQueue (insert, delete)
	-Application of queues (Simulation)
	- Linked Lists
	- Linked List (operation : insert, delete & storage representation)
	- Single Linked Linear List
	Circular Linked List
Unit-VI	**Trees and Graphs**
	- Trees
	- Definition of tree, a directed tree, m-array tree, Binary tree
	- Operation on binary tree (Traverse, insertion, deletion, searching, copying)
	- Methods of representing tree
	- Ordered tree, construction of a binary tree.
	-Lexically ordered tree & rules to construct it.
	Storage representation of Binary tree (Linear & Linked)
	Threaded representation of binary tree.
	- Graph
	Definitions :Adjacent Node, Directed Graph, Undirected Graph,

		Mixed Graph, Loop, Parellel edges, multigraph, Simple graph, Weighted Graph, Isolated Node, Null Graph, Path Cycle, Elementary Cycle, Acyclic, Indegree, Outdegree, Graph Traversal

Text Books
1. Rajaram : Object Oriented Programming and C++
   New age international publishers
2. Tremblay & Sorenson : Am Introduction to Data Structure with Application, Tata McGraw Hill Publication.

Reference Books
1. E. Balaguruswamy : Object oriented programming with C++
2. Bhagat Singh & Thomas L. Naps : Introduction to Data Structures, Tata McGraw Hill Publication.

SARDAR PATEL UNIVERSITY
Course: T. Y. B. Sc Computer Science
CS-303 – Business Data Processing
Effective from :June 2005

No. of Lectures per week: 3
External Marks: 80
Internal Marks : 40
Total Marks   :120

University exam duration 3 hours.

Unit-I	- Introduction of data processing , data processing concepts - Structured programming concept - Record, File - Introduction to Cobol - Divisions and their uses - Data division entries : level structure, picture clause, editing characters, classes & categories of data, special names paragraph, usage clause, justified clause.

Unit-II	- Data movement verbs Move
	- Arithmatic verbs
	  - Add, Subtract, Multiply, Divide, Compute, Add corresponding, Subtract corresponding
	- Sequence control verbs
	  - Goto, Stop
	- Input and output verbs
	  Open, close, read, write, accept, display
	- Categories of cobol statement

Unit-III	- Condition
	  - Relaitonal, sign, class, condition-name, Nested, Compound
	- If statement
	  - Nested if sentence, Coding style for if sentence, Decision table and of statement
	- Go TO with Depending Clause
	- Perform statement
	- Exit statement
	- Redefines, renames, qualification of data, sign clause
	- OCCURS clause and subscripting, assigning values to table elements, multi-dimensional tables
	- PERFORM verb and table handling
	    1. Perform with TIMES option
	    2. Perform with UNTIL option
	    3. Perform with VARYING option
	    4. Perform with VARYING-AFTER option
	- Screen section
	- Cobol programming of sequential files and its application

Unit-IV	- File updation - SORT verb - MERGE verb - Same sort area clause - Memory size clause

	- Examine verb
	- Inspect verb
	- String and Unstring verb
	- Cobol subprogram
	- Cobol program related to string handling, Sorting, Merging, Character Handling & Subprogram
Unit-V	- Report writer Facility
	- Indexed Sequential File
	- Cobol Programming related to indexed files and Report writer
Unit-VI	- Introduction to File Organization
	- Type of files
	- Sequential File Organization
	- Random or direct organization
	- Direct addressing
	- Index Look-up
	- Randomizing
	- Hashing algorithm
	- Division remainder, digit analysis, mid-square, folding, radix
	- Creation and maintenance of Hashed file
	- Indexed Sequential organization
	- Addition and deletion of records in indexed file

Text Books:
1. Roy M. K. & Dastidar Ghosh. D. :Cobol Programming
   Tata McGraw Hill Publication Comp..1982
2. Philipakis and Kazmier :Information System through Cobol,
   2nd Edition McGraw Hill Int. Editions.

Reference Books :
1. Cobol Programming with Business Applications By N. L. Sarda, Pitambar Publishing Company
2. Schaum's Outline Series : Theory and Problems of Data Processing, McGraw Hill Publication.

SARDAR PATEL UNIVERSITY
Course: T. Y. B. Sc Computer Science
CS-304 – System Analysis, Design and Software Engineering
Effective from :June 2005

No. of Lectures per week: 3
External Marks: 80
Internal Marks : 40
Total Marks   :120

University exam duration 3 hours.

Unit-I	**System Concepts & Systems Development Life Cycle (SDLC)**
	- What is system?
	- Characteristics of system
	- The elements of system
	- Major system concepts
	- Types of systems
	- What is system analysis?
	- History of system analysis
	- System analyst
	- What is SDLC?
	- Stages of System Analysis
	  - Problem Identification
	  - Feasibility Study and Cost Benefit Analysis
	  - System Requirement Analysis
	- Stages of System Design
	  - System Design Specification and Programming
	  - System Implementation , follow up maintenance
	  - Evaluation of the system

Unit-II	**Structured System Analysis & Design Method, Input / Output Design & Fact Gathering techniques**
	- Need of SAD (Structure Analysis and Design)
	- What is SSADM?
	  SSADM Methodology
	  - System survey
	  - Structured Analysis
	  - Structure Design
	  - Hardware study
	  - System Implementation
	  - Maintenance
	  - Advantage of SSADM
	  - System Design Control
	- Input
	  - Data Capture objectives
	  - Data verification and validation
	- Output
	  - Design principles of output
	  - Output Objectives
	- Fact Gathering Techniques
	  - Interviewing
	  - Questionnaires
	  - Record Inspection

	- Observation
Unit-III	**DFDs 7 System Flowchart Symbols** - What is DFDs? (Data Flow Diagrams) - Symbols used in DFDs - Constructing a DFD with illustration - Physical & Logical DFDs

Unit-IV	**Computer Assisted System Engineering (CASE) Tools**
	- What is a CASE?
	- CASE Components
	  - Diagramming Tools
	  - Information repository
	  - Interface Generator
	  - Code generator
	  - Management Tools
	- Benefits of CASE
	  - Easing revision of application
	  - Support of System Prototypes
	  - Code Generator
	  - Improved ability to meet user requirements
	  - Supporting Information development Process
	- Limitations of CASE

Unit-V	**Primary Introduction to Software Engineering** - Introduction to Software and Software Engineering - General characteristics of Software Development Process - Quality Matrics - Phases in Software Development - Effort and Error Distribution - Role of Management & Metrics - Process Mode : Waterfall, Prototype, Iterative Enhancement and Spiral

Unit-VI	**Software Requirement Specifications**
	- Introduction: SRS (Meaning & Role)
	- Problem Analysis
	  1. Structuring Information
	  2. FDD,DFD,DD Structured analysis
	- Requirement Specifications:
	  - Characteristics and Components of SRS
	  1. Specification Language
	    (Structured English, Regular Expression, and Decision Table)
	  2. Structure of SRS
	- Validation of SRS
	- Metrics Overview
	- Monitoring & Control

Text Books :
1. Prof. S. Parthasarthy & Prof. B.W. Khalkar :System Analysis & Design, 1st Edition, Master Ed. Cons., Nashik
2. An Integrated Approach to Software Engineering
   By Pankaj Jalote, Narosa Publishing House, Second Edition, 1997
3. Software Engineering a practitioner's Approach
   By Roger S. Pressman, Tata McGraw-Hill, Fifth Edition,2001

Reference Books:
1. James A. Senn : Analysis & Design of Information System 2nd Edition, McGraw-Hill Int.
2. Software Engineering Fundamentals, By Richard Fairley, Tata McGraw- Hill
3. Software Engineering, By Ian Somnmerville, Addition-Wesley, Fifth Edition,2000

No. of Lectures per week: 3
External Marks: 80
Internal Marks : 40
Total Marks   :120

University exam duration 3 hours.

Unit-I	**Introduction to Computer Networks**

	- Networking of Computer
	   - Need of Computer Networking
	   - Advantages of Computer Networking
	   - Disadvantages of Computer Networking
	- Types of Networks
	   - LAN, MAN, WAN
	- Telephone System
	   - Structure of telephone system,, the politics of telephones, the local loops, truncks, Switching

Unit-II	**Data Communication & Transmission**
	- What is Computer Communication? - Need for Data Transmission for over distances - Transmission Media Magnetic media, twisted pair, baseband, co-axial cable, broadband co-axial cable, fiber optics, comparision of fiber optic and copper wires - Data rage, individual rate, spectrum and bandwith - Circuit Switching - Packet Switching - FDM & TDM
Unit-III	**Components of Networks**
	- Modems - Concentrator - Routers - Bridges - Hubs - Switches
Unit-IV	**Communication Protocols and Synchronization**
	- What is Protocols? - Need of Protocols - Asynchronus Transmission & Synchronus Transmission - SDLC & HDLC - SNMP Simple Network Management Protocol, the SNMP Model, the SNMP Protocol - Brief examples of Internet Protocol - IP, HTTP, TCP
Unit-V	**LAN – Local Area Network, Internet and Intranet**

	- What are LANs?
	- Characteristics of LAN
	- Difference between multiuser system and LAN
	- Terminology used in Networking
	  - Nodes, Media, Server, Protocols, Throughput, Database,
	  Bottlenecks, Host, Workstations
	- LAN topologies
	  - Bus, Star, Tree, Complete, Intersecting, Regular
	- The Internet
	  - History of Internet
	  - Why use Internet?
	  - Internet Connection Option
	  - Internet Security
	  Brief Introduction to WWW – World Wide Web, Mosaic and Gopher
	- E-mail

Unit-VI	**MARKUP LANGUAGE** - Introduction to various Markup Languages - Introduction to HTML - Structure : Head & Body Sections - Text Formations - Ordered and Unordered Trees - Table Handling - Images - Forms - Frames

Text Books
1. A. S. Tanenbaum : Computer Networks,
   3rd Edition Practice – Hall India
2. S.K. Basandra & S. Jaiswal: Local Area Network
   Galgotia

Reference Books
1. Satish Jain : "O" – Level Made Simple
   BPB Publication

SARDAR PATEL UNIVERSITY
Course: T. Y. B. Sc Computer Science
CS-306– Relational Database Management System and Visual Programming
Effective from :June 2005

No. of Lectures per week: 3
External Marks: 80
Internal Marks : 40
Total Marks   :120

University exam duration 3 hours.

Unit-I	**Introduction to Visual Programming** - Introduction to Visual Programming & its features, Introduction to Project Types - Development Environment : Menu bar, Tool bar, Project Explorer, Toolbox, Properties, Window, Form Designer, Form Layout, Immediate Window - Data type variable : Declaration conversion, foreign declaration, scope life time - Control Structure :If & select case structure - Looping structure: While, Do While, For….Next, Do…Loop Unitl Displaying Message, Messagebox and Inputbox, Subroutines and functions with examples - Forms and MIDI Forms - Arrays – Declaration and use of one, two, three Dimensional arrays, Dynamic arrays
Unit-II	**Designing User Interface** - Intrinsic Controls: Pointers, Picture box, Imagebox, Textbox, Label, frame, Command, Button , Radio Button, Checkbox, Combobox, Listbox, Horizontal and Vertical Scrollbars, Timer, Shape, Line, DriveList, Directorylist, Filelist, Basic properties, events and methods - Sample application based on intrinsic controls - Aligning and sizing controls, Menu Editor - Functions: - String : len, mid, ucase, lcase, str, val, strconv, isnull, isempty - Numeric : cstr, isnumeric - Date & Time : date, time, now, cdate - Handling text files: Opening, Closing, Reading, Writing in Random mode - Advance Controls : Toolbar, Imagelist, Status bar, Progressbar, Dialogbox, Tab, Treeview, Listview, Slider, Datepicker, richtextbox, Monthview, Maskedit - Sample application based on advancecontrols
Unit-III	**Connecting to Databases**

	- Introduction to DAO & RDO - Data Control :Properties & Methods - The ADO Control - Programming Active Data Objects, Establishing Connections, Executing SQL Statements, Manipulating recordset objects - Data bound controls : Datagrid, Flexgrid, data bound Listbox and Combobox - Error Handling and debugging: Types of Errors, Error Debugging, Debug Object & The Err Object - Sample application based on database connections - Data Reports : Setting up data environment, connection, command Building reports in designer building interface to reports, Grouping & Passing parameters, Testing & running reports
Unit-IV	**Structured Query Language – I** - Fundamentals of RDBMS, CODDs Priciples - Introduction to SQL Syntax - Creation Updation and access of relation tables using SQL - Commands : Create, Insert, Update, Delete, Select, Alter, Drop - Data constraints : Column Level, Table Level, Null Value, Primary Key, Unique key, foreign key - Check integrity constraints - Range searching patter matching - ORACLE Functions : AVG, MIN, COUNT, MAX, SUM, ABS, POWER, ROUND, SQRT, LOWER, INITCAP, UPPER, SUBSTR, RPAD, LENGTH, LPAD, LTRIM, RTIM, LENGTH, TO_NUMBER, TO_DATE, TO_CHAR
Unit-V	**Structured Query Language – II** - Grouping of data, data manipulation, joining multiple table, joining a table to itself - Subqueries : Union, Intersect, Minus Clause - Indexes : Create , Dropping - Views: Create, Update, Destroy - Sequences : Create, Alter, Drop - Granting and Revoking Permissions - Iterative Controls : WHILE,FOR,GOTO - ORACLE transactions, LOCKS - CURSORS :Opening, Closing, % NOTFOUND, %FOUND, %ISOPEN, %ROWCOUNT - STORED Procedure, STORED Function - Database Triggers : Creating, Deleting
Unit-VI	**TOOL** - Creating, Generating, Running Forms - Forms Hierarchy Like : PROPERTY CLASS, VISUAL ATTRIBUTES, BLOCK CANVAS, & Multiple LOVs, Parameters passing in Forms, Master detail Form. - Triggers : WHEN_BUTTON_PRESSED, WHEN_VALIDATE_ITEM, WHEN_MOUSE_CLICK, WHEN_MOUSE_DOUBLECLICK, WHEN_MOUSE_ENTER, WHEN_MOUSE_LEAVE, KEY_NEXT_ITEM, KEY_PREV_ITEM, KEY_NXTBLK, KEY_PRVBLK] - Creating, Generating, Running Reports

	- Data Model : Queries, Groups, Columns, Parameters, Data links, Layout - Report Style - Tabular, Master / Detail Form, Form Latter, Mailing Label, Matrix - Creating a control break report

Text Books
1. Desai Bipin C. : Introduction to database System, West Publishing co.1999
2. Ivan Bayrozz : Oracle Developer2000 BPB Publications
3. Hughes John G. : Database Technology a software Engineering Approach, Practice Hall International Ltd. 1988
4. Mastering Visual Basic 6- Evangelos Petroutsos BPB Publication.
5. The Complete Reference Visual Basic 6 – Noel Jerke Tata McGraw Hill

Reference Books
1. Elnagri R. & Nvahe S. B. : Fundamentals of Database Systems
   The Bengamin / Cummings Pub. Co. Inc. 1989.
2. Visual Basic 6 Programming Black Book – Steven Holzner Dreamtech press
3. How to program Visual Basoc 6 – Deitel & Deital Pearson Education

No. of Lectures per week: 6
External Marks: 80
Internal Marks : 40
Total Marks   :120

University exam duration 2 practicals of 3 hours.

Part – I Develop the program in Foxpro (50%)

Sample Example:
Payroll, Inventory Control;, Examination Results, Objective Type Examination, Library, Trading System, Accounting Reservations etc.

Part – II Develop & Process the programs for data structures using C++ Language (50%)
Stack Operations (Push, Pull, Peep, Change), Application of Stacks (Recursion, Polish expressions and their Compilation), Insert and Delete programs using simple queue, Circular Queue, Dqueue, Programs on Singly Linked list (Insert and Delete), Programs on Binary tree traversal, Insert, Delete

SARDAR PATEL UNIVERSITY
Course: T. Y. B. Sc Computer Science
CS-308 – Practicals Based in CS-303, CS-304 & CS-305
Effective from :June 2005

No. of Lectures per week: 6

External Marks: 80
Internal Marks : 40
Total Marks   :120

University exam duration 2 practicals of 3 hours.

Part – I (50%)

COBOL

Programming using COBOL may be given for the file processing applications like
Payroll, Inventory, transportation system, Examination System, Monitoring Systems etc.

Part – II (50%)

I)   **HTML (30%)**
        Practicals based on creating simple web pages from unit 6 of CS 305

II)   **SAD (20%)**
        Simple case study to be given to design Data Flow Diagram (DFDs)

No. of Lectures per week: 6
External Marks: 80
Internal Marks : 40
Total Marks   :120

University exam duration 2 practicals of 3 hours.

A)   Part – I (50%)

      I)   Programs using PL / SQL (25%)

          Creation & maintenance of tables
          Control break
          Sales Analysis Reports

          Using Tools:
          Creation of different forms
          Creation of reports like tabular, master / detail, form letter, mailing label, matrix

      II)   Visual Programming using VB (25%)

          Practical base on any Visual Programming Language like Visual Basic 6. Basic level Programming based on the topics covered in CS-306 may be asked

B)   Part – II (50%)

   In-House Project based on CS-301 to CS- 306

SAMPLE PROJECTS:

1. Payroll System for College
2. Library Management System
3. On-Line Shopping
4. Billing System for Grocery shop, book stall
5. Attendance System for the college
6. Student Information System for the College
7. Insurance System
8. Hotel Management System
9. On-Line Quiz System
10. System for private clinic
11. WAP Site for College
12. Billing System for Electricity Board
13. Billing System for Telephone Exchange
14. Students Admission System for SCA
15. Admission System for College
16. Hostel Management System

17. MP3 to wave convertor
18. Text to voice convertor
19. Voice chatting
20. Voice to text convertor
21. Chart Maker (Generate different types of charts according to given data)
22. Installation or Copying utility
23. Subject tutor
24. Grapher (Generate from a given equation)
25. Mail Server System
26. Time Schedulling System
27. Bank A/C Allocation and Customer Information System
28. Railway Inquiry System
29. Library Management / Information System
30. Stores Sales Management System
31. Faculty and Students Attendance System

CS-309 TYBSc Project
Guidelines

a) Project work would be done in College only.
b) The project can be scientific, commercial, meeting needs of big organizations or college or it can be of system side. It can be case study of big organization. However topics related to college automation may be given higher priority. The students are supposed to visit the organization only after regular teaching hours of the college for the project work.
c) The problem definition can be form outside also and in this case the work is to be done in college. Preference is give to the project definition having utility. Problem definition must be within Indian Geographical Boundary.
d) One to two students may be allotted per project.
e) Duplication of projects should be avoided in the same year.
f) Minimum 100 hour machine time must be provided to each student and additional 100 hours are to be used for analysis, design, documentation and for preparation of data / entry. Test records are to be entered by the students. The cost of collecting information from outside and preparing input records is to be borne by the students.
g) Regular BACKUP of project work is to be taken
h) Each Student should be assigned to one computer science teacher, who would be known as his supervisor of the project. Preferably all teachers should be associated to act as supervisors to avoid overburdening on one individual.
i) The project work is to be done by the student regularly. The student should prepare timesheet for the time devoted in different activities of projects like analysis, design, coding, testing. Supervisors should monitor the progress of each student periodically, preferably weekly or fortnightly.
j) One of the lecturers should be appointed as Project Coordinator.
k) Two meetings (one per term) should be arranged to evaluate the students for project work through presentation and award the internal marks. For this board of examiners (for internals) should be formed.
l) The college is recommended to have the following hardware and software, specially earmarked for use of students for the smooth functioning of project work.

HARDWARE

1. Scanner
2. Laser Printer (to be used to print one copy of the project at the end)
3. Digital Camera
4. Multimedia System
5. Backup Systems
6. UNIX System
7. IIS Server
8. Mail Server
9. Internet
10. VCP / VCR
11. Audio cassette player
12. Channel Cabelling
13. Pocket Computer
14. Encarta 2000 on CD
15. Encyclopedia on CD

SOFTWARE

1. Compilers (C, C++, Java, C#, etc)
2. Packages: HTML, DHTML, Dream Weaver, Macro media Flash, Front Page, Free Hand, Coral Draw, Software and hardware for mobile, computing etc.
3. database : Access, Foxpro, Oracle, SQL Server, My SQL etc.
4. Front End : Visual basic, D2K etc
5. Any other latest software students are supposed to learn the new tools, which are not in course themselves , if they are using it.

LIBRARY

The College is supposed to have the latest books on new tools in the colleges.
- The students are require to submit 2 copies of the project report before one week of the commencement of university theory exams.
- The University Exam for the project work would be conducted after the completion of the University Theory Exams.
- The student is required to give a presentation of 15 to 20 minutes duration about their project work using multimedia projector, OHP or blackboard depending upon the facility available at he college where the exam is taking place, before the panel of examiners. However, it is expected each college would be having these facilities.
- DISTRIBUTION OF MARKS

   40% on Presentation & Demo of the application developed.
   60% on Project Report.

- Software developed as part of project will be college property
- To maintain uniformity, the following specification should be adhered for preparing the project report.
   Arial Font, Size 12 for running matter. However, for title etc bigger size say 16 font may be used.
   A4 Size paper, quality of paper may be selected by college of its choice.
- The total number of pages in a report should be around 100. Spiral Binding should be used.

First Page

TITLE of the Project

Name of the Student

Submitted as
Partial fulfillment of
BSc degree
YEAR

Name of the College
Sardar Patel University

(College Name)
Certificate

Second Page

Date :

This   is   to   certify that Mr./Ms. _____of
TYBSc. (Seat No. _____) has worked on project entitled
_____
from (Date) to (Date) _____. This (BSc-309) is in-
house project course of three credits.

He/She was regular in his/her work and devoted around 200
hours for the project including analysis and design. He/She
has completed the project satisfactorily.

Head/Coordinator   Supervisor

Third page   **Acknowledgement**

Fourth Page   CONTENT
                   Chapter name & Page Numbers

- Report must include Problem definition, Description, DFD, Tables/Files, Logical
  Design, Sample Input, Output Reports and main screens. Validation module must
  be there.
- In the last, USER MANUAL and references, if any should be provided.