Gujarat University

Bachelor of Computer Applications

Semester IV (CBCS)

Syllabus

(Effective from June 2018)

COURSE TITLE	Database Management System - II
COURSE CODE	CC-208
COURSE CREDIT	3
Session Per Week	4
Total Teaching Hours	40 HOURS

AIM

The aim of the course is to make student how to use these concepts in database applications.

LEARNING OUTCOMES

Students would be able to:

1) Decide where and how to store and retrieve the information effectively using advanced concept of database
2) Recognize the elements of Database for real life applications.
3) Familiar with the advanced database concepts such as distributed database, business intelligence and data warehouse etc.

DETAIL SYLLABUS

UNIT	TOPIC / SUB TOPIC	TEACHING HOURS
	Introduction to SQL	10

1	●Introduction to SQL
	●Data Definition Commands
	  o Data Types
	  o Creating Table Structures
	  o SQL Constraints
	●Data Manipulation Commands
	  o Adding Table Rows
	  o Saving Table Changes
	  o Listing Table Rows
	  o Updating Table Rows
	  o Restoring Table Contents
	  o Deleting Table Row
		5

	●Select Query
	  o With Conditional Restrictions
	  o Arithmetic Operators
	  o Logical Operators
	  o Special Operators
	●Advanced Data Definition Commands
	  o Changing a Column's Data Type
	  o Changing a Column's Data Characteristic
	  o Adding a column
	  o Dropping a column
	  o Advanced Data Update
	  o Copying Parts of Table
	  o Adding Primary and Foreign Key Designations
	  o Deleting Table From The Database
		5

	Transaction Management and Concurrency Control	10
2	● What is a Transaction? ● Concurrency Control ● Concurrency Control with Locking Methods ● Concurrency Control with Stamping Methods ● Concurrency Control with Optimistic Methods ● Database Recovery Management	
	Distributed Database Management System	10
3	o Evolution of DDBMS o Distributed Processing and Distributed Database	2

	● Levels of Data and Process Distribution
	  o Single-Site Processing, Single-Site Data(SPSD)
	  o Multiple-Site Processing, Single-Site Data(MPSD)
	  o Multiple-Site Processing, Multiple-Site Data(MPSD)
		3

	● Distributed Database Transparency Features
	● Distributed Transparency
	● Transaction Transparency
	  o Distributed Requests and Distributed Transactions
	  o Distributed Concurrency Control
	  o Two-Phase Commit Protocol
	● Performance Transparency and Query Optimization
		5

	Advanced SQL	10

4	● Set Operators
	  o Union
	  o Union All
	  o Intersect
	  o Minus
		2

	● SQL Join
	  o Cross Join
	  o Natural Join
	  o Join Using Clause
	  o Join On Clause
	  o Outer Join
	● SQL Functions
	  o Date and Time
	  o Numeric
	  o String
	  o Conversion
		5

	● Sub Queries
	  o Where Sub Queries
	  o In Sub Queries
	  o Multirow Sub Query Operators: Any and All
	  o From Sub queries
	  o Attribute list Sub queries
	  o Correlated Sub queries
	● Sequence
		3

TEXT BOOK/S:

Database System Concepts (First Edition: 2008)
Publisher: Cengage Learning
By Peter Rob and Carlos Coronel

Chapter-10 (10.1, 10.2, 10.3, 10.4, 10.5, 10.6)
Chapter-12 (12.1, 12.3, 12.6, 12.7, 12.8, 12.9, and 12.10)
Chapter-7 (7.1, 7.2 (7.2.4, 7.2.5, 7.2.6, 7.2.7) 7.3, 7.4, 7.5, 7.6.3) Excluding (7.1.1, 7.1.2, 7.2.3)
Chapter-8 (8.1, 8.2, 8.3, 8.4, 8.5)

REFERENCE BOOKS:

1. Introduction to Database Management Systems (First Edition 2006)
   Publisher: Tata McGraw-Hill
   By ISRD Group

2. An Introduction to Database Systems (Eighth Edition 2006)
   Publisher : Pearson
   By C. J. Date, A. Kannan & S. Swamynathan

3. An Introduction to Database Systems
   Publisher: Pearson
   By ITL Education Solutions Limited

WEB RESOURCES:

https://www.techonthenet.com/oracle/
http://www.way2tutorial.com/sql/oracle_sql_introduction_type_of_sql_statement.php
https://docs.oracle.com/cd/B19306_01/server.102/b14200/

COURSE TITLE	System Analysis, QA and Testing
COURSE CODE	CC-209
COURSE CREDIT	3
Session Per Week	3
Total Teaching Hours	40 HOURS

AIM

To develop the skill about System Analysis, Quality Assurance and types of Testing Methods
To make the students able to design CD,DFD, UML Diagrams and test the existing systems.

LEARNING OUTCOMES

On the completion of the course students will:
1.Understand different models and draw data flow diagrams
3.Understand the basic android terminology and technology
4.Learn how to draw uml diagrams
5.To understand the basic terminologies and types of testing

DETAIL SYLLABUS

UNIT	TOPIC / SUB TOPIC	TEACHING HOURS
	SYSTEM ANALYSIS AND DESIGN	10
1	Software Development Models o Waterfall Model o The Incremental Model o The Spiral Model	4
	Requirement Modeling / Fact-finding techniques Interview Document review Observation Questionnaires and surveys Overview Feasibility Study Operational , Technical , Economic , Schedule Feasibility Data Flow Diagram: Concepts, Symbols, Rules, Construction of CD and DFD	6

2	**Object Oriented Analysis**		**10**
	The Constituents of OOAD: o Objects and Classes o Links and Association o Generalization and Specialization o Aggregation and Composition o Coupling and Cohesion o Components o Interfaces		4
	UML DIAGRAMS Use-Case Diagram: Benefits of Use-Case Diagram o Actors, Use-Cases , Relationship between Actor and Use Case Sequence Diagram: Elements of Sequence Diagram: Life Lines, Messages, Activation, Guards, Combined Fragments, Objects		6
3	**UML DIAGRAMS**		**10**
	Activity Diagram: Elements of Activity Diagram: Initial State, Final State Action / Activity Transitions , Decision Synchronization, Fork and Join Swim lanes, Object and Object Flow Class Diagram: o Elements of Class Diagram:		6

	User Interfaces and Layouts
	     o Viewgroups
	     o Built-in Layout classes
	     o FrameLayout, LinearLayout, RelativeLayout,TableLayout, GridLayout
	     o Multiple Layouts on a screen
			4

4	**QA and TESTING**		**10**
	Quality, Quality Assurance and Quality Control White Box Testing Black Box Testing Integration Testing		6
	QA and TESTING System and Acceptance Testing Performance Testing Regression Testing Test Metrics and Measurements		4

TEXT BOOK/S:

UNIT 1 :
System Analysis and Design Methods
Publisher: Cengage Learling
By: Gary B. Shelly, Thomas J. Cashman, Harry J. Rosenblatt

UNIT 2, 3
Magnifying Object-Oriented Analysis and Design
Publisher: PHI
Author: Arpita Gopal and Netra Patil

UNIT 3, 4
Software Testing: Principles and Practices
Pearson Education
Srinivasan Desikan Gopalaswamy Ramesh

REFERENCE BOOKS:

WEB RESOURCES:

REQUIRED SOFTWARE/S

COURSE TITLE	CORE JAVA
COURSE CODE	CC-210
COURSE CREDIT	3
Session Per Week	4
Total Teaching Hours	40 HOURS

AIM

To develop the skill about the basic knowledge of java programming language with oop concepts and provide knowledge about platform independent concept.

To provide knowledge of interface exception handling,threading, package and applet details through java.

LEARNING OUTCOMES

On the completion of the course students will:

1.Understand the java programming and oop concepts.

2.Understand the concepts of Inteface, exception handling, threading, and package.

3.Understand the basic concepts of applet.

DETAIL SYLLABUS

UNIT	TOPIC / SUB TOPIC	TEACHING HOURS
	Java Introduction	10
1	• Principles of Object oriented language • Java Essentials • Java Virtual Machine • Java Features • Program Structure • Java Improvements • Difference between Java and C++ • Installation of JDK 1.7 • Integrated Development Ebvironment	3

	• Java Programming constructs
	  o Variables
	  o Primitive Data Types
	  o Identifier
	  o Literals
	  o Operators
	  o Expressions
	  o Precedence Rules and Associativity
	  o Primitive type conversion and casting
	  o Flow of Control
		4

	• Classes and Objects
	  o Class, Objects, Class declaration in java, Creating Objects
	  o Methods, Constructors, Cleaning Up Unused Objects
		3

2	**Array, Inheritance and Interface**	**10**
	o Class Variable and Methods - Static Keyword o this keyword • Arrays o One dimensional, Two dimensional o Using For..each with array o Passing arrays to methods and returning arrays from method • command line arguments	4
	• **Inheritance** o Deriving classes using extends keyword o Overriding Method o super keyword, final keyword o Abstract class	4
	• **Interface** o Variables in Interface o Extending Interfaces o Interface vs Abstract class	2
3	**Package, String and Exception Handling**	**10**
	• Packages o Creating Packages o Using Packages o Access Protection • java .lang Package • java.lang.Objects class • java.wrapper classses • String class • String Buffer Class	5

	• Exception
	  o Introduction
	  o Exception Handling Techniques
	  o User Defined Exception
		5

	Multithreading and Applet	**10**
	• Introduction • Multithreading in java • java.lang.Thread • Main Thread • Creation of new Threads • Thread State in java • Thread Priority • Multithreading using isAlive() and join( )	5

4	• **Applet** • Introduction • Applet class • Applet Structure • Example Applet Program • Applet Life Cycle • Common methods used in displaying the output • paint(), update() and repaint() methods • More about applet tag • Methods of Graphics class o drawLine(), drawArc(), fillArc(), drawOval(), fillOval(), drawPolygon(), fillPolygon(), drawRect(), fillRect(), drawRoundRect(), fillRoundRect()	5

TEXT BOOK/S:

Programming in Java
Oxford Publication
By Sachin Malhotra and Saurabh Choudhary

REFERENCE BOOKS:

1. Programming in Java 2
   Jaico publishing house
    By Dr. K. Somasundaram

2.The Complete Reference Java2
   TMH Publication
    By Herbert Schildt

WEB RESOURCES:

1. docs.oracle.com/javaee/6/tutorial/doc/girgm.html
2. docs.oracle.com/javaee/6/tutorial/doc/bnagi.htm
3.www.javatpoint.com
4.www.tutorialspoint.com

REQUIRED SOFTWARE/S

1. Any editor of Windows or Linux/UNIX.
2. JVM version 1.8

COURSE TITLE	E-COMMERCE
COURSE CODE	CC-211
COURSE CREDIT	3
Session Per Week	4
Total Teaching Hours	40 HOURS

AIM

To develop the skill about the basic and important terminology of Internet.
To make the students able for web site design fundamentals using HTML scripting.

LEARNING OUTCOMES

On the completion of the course students will:

1. Understand the meaning and syntax of different tags of HTML5
2. Learn the basic differences between HTML and HTML5
3. Understand the basic internet terminology and technology
4. To design web pages using simple and advanced tags of HTML5.
5. To understand the fundamental concept of Google AdSense and Analytics.

DETAIL SYLLABUS

UNIT	TOPIC / SUB TOPIC	TEACHING HOURS
1	Introduction to E-Commerce	10
	• E-Commerce: The revolution is just beginning o What is E-Commerce? o The difference between E- Commerce and E-Business o Eight Unique Features of E-Commerce Technology o Introduction to Web 2.0 o Types of E-Commerce	3
	The Internet and World Wide Web : E-Commerce Infrastructure	

	• **The Internet: Technology Background** o The Evolution of the Internet 1961 – the Present o The Internet : Key Technology Concepts o Other Internet Protocols and Utility Programs • **The Internet Today** o The Internet Backbone o Internet Exchange Points o Campus Area Networks (CANs) o Internet Service Providers o Internets and Extranets • **Introduction to Internet 2** • **The Internet and the Web: Features** o E-mail o Instant Messaging o Search Engines o Intelligent Agents (Bots) o Online Forums and Chat o Streaming Media o Cookies		**7**
2	**Online Security and Payment System**		**10**
	• **The E-Commerce Security Environment** o Scope of the problem o What is good E-commerce security? o Dimensions of E-commerce security o The tensions between security and other values • **Security Threats in the E-Commerce Environment** o Malicious code o Unwanted programs o Phishing and Identity theft o Hacking and Cyber vandalism o Credit Card Fraud/Theft o Spoofing and Spam Web Sites o Sniffing o Insider attacks o Poorly designed server and client software • **Technology solution** o Protecting Internet communications o Encryption (excluding: limitation of encryption solutions)		**10**

3	Payment Systems, Social Networks and Online Auctions	10
	• **Types of Payment systems** o Cash o Checking transfer o Credit card o Accumulating balance • **E-Commerce payment systems** o Online credit card transaction o Digital wallets o Digital cash o Online stored value systems o Digital accumulating balance payment systems o Digital checking payment systems o Wireless payment systems	5
	Social Networks, Auctions and Portals	
	• **Social Networks and Online Communities** o What is online social network? o Difference between Social networks and Portals o Social network features and technologies o The future of social networks • **Online Auctions** o Defining and measuring the growth of auctions and dynamic pricing o Why are Auctions so popular? Benefits and costs of o Auctions(excluding: market-maker benefit) o Types and examples of Auctions	5
4	**Ethical, Social and Political issues in E-commerce**	10
	• **Understanding Ethical, Social and Political Issues in ECommerce** o A model for organizing the issues o Basic ethical concepts: responsibility, accountability and liability o Analyzing ethical dilemmas o Candidate ethical principles • **Intellectual property rights** o Types of Intellectual property protections o Copyrights: the problem of perfect copies and encryption o Patents: business methods and processes o Trademark: online infringement and dilution • **Governance** o Public government and law o Introduction to Taxation	

TEXT BOOK/S:

E-Commerce – Business, Technologies, Society (2008), 4th Edition
Publication: Pearson
Kenneth C. Laudon, Carol Guercio Traver

REFERENCE BOOKS:

1. E-Commerce Strategy, Technology and Implementation
Publication: Cengage Learning
By Gary P. Schneider
2. Electronic commerce
Publication: TATA Mc Graw Hill
By Bharat Bhasker
3. Electronic Commerce A Managers' Guide
Publication: Pearson
By Ravi Kalakota, Andrew B. Whinston
4. Electronic Commerce A simplified Approach
Publication: JAICO
By Munesh Chandra Trivedi
5. e-Business 2.0
Publication: Pearson
By Ravi Kalakota, Marcia Robinson

WEB RESOURCES:

REQUIRED SOFTWARE/S

COURSE TITLE	DATABASE MANAGEMENT SYSTEM-II PRACTICAL
COURSE CODE	CC-212
COURSE CREDIT	3
SESSIONS PER WEEK	3
TOTAL TEACHING HOURS	40 HOURS

AIM

To develop the skill about the basic knowledge of SQL.

LEARNING OUTCOMES

On the completion of the course students will:
1.Understand the SQL concepts.

DETAIL SYLLABUS

UNIT	TOPIC / SUB TOPIC	TEACHING HOURS
1	**SQL**	**10**
	Create table structures. o With Different data types of SQL o with use of necessary constraints _ Primary Key _ Foreign Key _ Not Null _ Unique _ Default _ Check	5 hours
	Perform following data manipulation commands on table For Example: o Adding Table Rows o Saving Table Changes o Listing Table Rows o Updating Table Rows o Restoring Table Contents o Deleting Table Row	5 hours
2	**SQL**	**10**
	Perform select queries on different tables. with arithmetic operators o with conditional restrictions o with logical operators o with special operators	8 hours
	Apply advanced data definition commands on table For Example: o Changing a Column's Data Type o Changing a Column's Data Characteristic o Adding a column o Dropping a column o Advanced Data Update o Copying Parts of Table o Adding Primary and Foreign Key Designations o Deleting Table From The Database	2 hours

		Advanced SQL	10 hours
3		Perform select query with aggregate functions o Min o Max o Count o Sum o Avg	2 hours
		Apply set operators on any given two tables. o Union o Union All o Intersect o minus	2 hours
		Perform join on given two or more than two tables. o Cross Join o Natural Join o Join Using Clause o Join On Clause o Outer Join	6 hours
		Advanced SQL	**10 hours**
4		Demonstrate the use of SQL functions using SQL query on different tables. o Date and Time o Numeric o String o Conversion	3 hours
		Demonstrate the use of sub queries on different tables. o Where o In o Having o Multi rows (Any/ All) o From sub query o Attribute list o correlated	6 hours
		Create sequences and demonstrate the use of sequence.(Create, Use and Delete)	1 hours

Following type of sample questions can be asked in the final examination

1. CUST(CID,CNAME,CCITY,DOB)
PROD(PID,PNAME,PCOST,PPROFIT)
SALE_DETAIL(CID,PID,SALE,SALE_DATE)
1) Write a query that display purchase detail of all customers based on sale date.
2) Display the Name of customers who are born in 1985.
3) Display the name of product starts with "s".
4) Display details of product having maximum sales.

2. BRANCH_MASTER(B_NO,B_NAME,LOCATION)
CUSTOMER_MASTER(C_NO,C_NAME,GENDER,DOB,CITY,CONTACT_NO)
ACCOUNT_MASTER(ACC_NO,ACC_TYPE,B_NO,C_NO,OPEN_DATE,CURR_ BALANCE)
1) Display details of male customers only.
2) Display the details of account opened in 1999.
3) List all records where current balance not less than 4000.
4) List all branch names where branch number is 1 or 3.

3. EMP(EMP_NO,EMP_NAME,DESIGNATION,MGR_NO,HIREDATE,SALARY,
COMMISSION,DEPT_NO)
DEPT(DEPT_NO,DEPT_NAME,LOCATION)
1) List DEPTNO as DEPARTMENT NUMBER, Count of Employees as "Number of Employees"
FROM Employee table.
2) List all employees who earn more than the average salary of their departments.
3) List DEPTNO, sum of salary department wise of employees who earn more than 2000.
4) Create a view on all the employee details of deptno=10.

4. PERSON (P_ID, LASTNAME, FIRSTNAME, ADDRESS, CITY)
ORDER (O_ID, ORDERNO, P_ID,ORDER_PRICE)
1) List all persons in Norway and USA:
2) Select only the records with NULL values in the "Address" column
3) List firstname,lastname with an Order month "November".
4) Count the no of persons having average order price=20;

5. PROGRAMMER(NAME,DOB,DOJ,PROF1,PROF2,SALARY)
SOFTWARE(NAME,TITLE,DEV_IN,SCOST,DCOST,SOLD)
STUDIES (NAME,SPLACE,COURSE,CCOST)
1) How many programmers have done the PGDCA course.
2) Display the institute names from the Studies table without Duplicates.
3) Display details of software having maximum scost.
4) Display the names of the programmers whose names contain 2 Occurrences of the letter
'A':

TEXTBOOKS:

Database System Concepts (First Edition: 2008)
Publisher: Cengage Learning
By Peter Rob and Carlos Coronel

REFERENCE BOOKS

1. SQL, PL/SQL: The Programming Language Of Oracle (4th Revised Edition) by Ivan Bayross
Publisher: BPB Publications
2. An Introduction to Database Systems (Eighth Edition 2006)
Publisher : Pearson
By C. J. Date, A. Kannan & S. Swamynathan

REQUIRED SOFTWARE:

COURSE TITLE	WINDOWS PROGRAMMING PRACTICAL USING C#
COURSE CODE	CC-213
COURSE CREDIT	3
Session Per Week	4
Total Teaching Hours	40 HOURS

LEARNING OUTCOMES

On the completion of the course students will:
1.Understand the language Visual Basic .NET
2.Learn the basic Visual and Windows Components / Controls.
3.Understand Object Oriented Programming with VB.NET.
4.Connectivity with Database.
5.Generting Reports with crystal reports.

DETAIL SYLLABUS

UNIT		TOPIC / SUB TOPIC	TEACHING HOURS
			10
	1	Design interface and implement functionalities for Arithmetic calculator with power, square, log, factorial, square root and clear functionalities.	
	2	Design interface and implement functionalities for Loan calculator. Take Amount, No of installments and Rate of interest from the user. Also user can choose Early Pay option through a checkbox. Calculate installment amount using pmt() function. Do proper validation for inputs taken by the user.	
	3	Design an application which will have 2 radio buttons. One will convert the Celsius to Fahrenheit and another will convert Fahrenheit to Celsius. Show the appropriate output depends on the user's selection. (Use radio button to take user choice and use textbox to enter value).	
1	4	Design a form having two text boxes, combo box and a label. Make the validation so that user can enter only numbers in both texboxes, if user has entered both numerical values then make the combo box visible. The combo box has options like 'ADD', 'SUB', 'MUL' and 'DIV'. According to user's choice from from combo, result will display in label.	
	5	Create an application with a textbox in which user can enter a sentence then displays 1) Number of vowels 2) Number of spaces 3) Number of digits 4) Number of special symbols When user press "analysis" button.	
	6	Design and implement a Tic Tack Toe game (Two Player).	
	7	Write a program to transfer an item from First Listbox to Second Listbox and from Second Listbox to First.	
	8	Print multiplication table into Listbox. For multiplication take value using Numeric up down.	
	9	Take 3 Radio buttons showing the name of 3 Countries. Load the image of the Flag of the country selected by the user from the given Radio buttons in the Picture box.	

	10	Take a Timer control which will delay to load MainForm by 10 seconds. Show the progress bar in the wait time. Also use Time control to scroll a label having text "Gujarat University", also take two more labels to show date and time on the tick event of the timer.	
2			10
	1	Take 3 Scrollbars indicating values of Red, Green and Blue colors from 0 to 255. Take 3 labels to show the values of the scroll bars. Depending upon values selected by the user with the help of scrollbars make a color and shows it in the picture box. Place a button having text 'Apply Color', and on the click event of the button apply that color to the form.	
	2	Implement Textpad application using Rich textbox. Make menus like File (New, Open Save, SaveAs and Exit), Edit (Cut, Copy, Paste, Undo, Redo), Format (Bold, Italic, Underline, Font, Color) etc. Use all common dialog controls and implement functionalities.	
	3	Take a Rich Textbox and implement Find, FindNext, Replace and ReplaceAll functionalities.	
	4	Write a program to Read and Write Text file.	
	5	Write a program to Read and Write Binary file.	
	6	Accept no from user and perform following operations using user defined sub routines or functions: 1) Factorial of number 2) Odd/even	
	7	Create MDI form. It must have File menu with option open, Close and Exit. It should also have window menu to arrange the child forms like Tile Horizontal, Tile Vertical, Cascade and Arrange Icons.	
	8	Create MDI form. It must have File menu with option Open, Close and Exit and one picture box. Allow users to open any picture using open dialog box, that picture should be displayed in the picture box.	
	9	Write function or subroutine to Find maximize, minimize value from an array and also to sort an array.	
3			10
	1	Create shape class as abstract class having area as must override function. Derive rectangle, triangle, square class based from this class.	
	2	Write a program to create class Person. Make at least three properties and one method "show detail" of this class. Now inherit class Student and Faculty from class Person and override method "show detail". Create objects of Student and Faculty class and call show detail function for both objects to show details in appropriate text boxes.	
	3	Write a program to implement the class Employee. Show Constructor Overloading.	
	4	Write a program to implement the class Book. Show Method Overloading.	
	5	Create an Invoice application in which user enters the customer name, description, unit price and quantity for the item ordered, then clicks the add item button. The application calculates the order total by multiplying the unit price by the quantity. And calculates a discount based on the order total. The user can then add another item to the order by using all information.	
	6	Create a user control called myTextBx, having all the properties of the TextBox. Add Four Properties to it called EnterClr as Color, LeaveClr as Color and MandatoryClr as Color and Mandatory as boolean. Use this control on Windows Application. Object of this control will show EnterClr when it is being focused. On Leave if Mandatory property is TRUE and Textbox is Empty then MandatoryClr has to be applied otherwise LeaveClr is applied to the Textbox.	
	7	Write an application, which works like a window's explorer, using combo box and list box. 1. The combo box should display the list of drives. 2. The list box should display the list of files and directories.	
			10
	1	Write a Program to develop a Database Application with ADO.NET with Record Navigation and Add, Delete, Save and Update Facility for Books table (BookID,BookName, Qty, UnitPrice,TotalPrice).	
	2	Create a login form which will validate user name and password from the database. On validation show MDI form. Show appropriate message if user name and password is incorrect.	

	3	Create two tables State(StateCode, StateName) and City(CityCode, CityName, StateCode). Design a form which will list all the state in the ComboBox. After selection of the StateName, another ComboBox should display all the Cities which belong to the state selected by the user in the first ComboBox.	
4	4	Write a program to create a table Emp with the following fields: **Field Name** **Datatype** Eno Integer Ename Varchar(20) Salary Single Birthdate Date Designation Varchar(20) Design a form which perform Select, Insert, Update and Delete operations on the table Emp. On Insert Eno has been generated automatically.	
	5	Create below mentioned Crystal Reports for the above application. • List all the Employees having salary more than 25000 • List all the Employees who are above the age 35. • List all the Employees designation wise.	
	6	Design a following table in Access. Table name = Book (Bookcode, Booktype, Bookpublisher, Bookauther, Bookpage, Bprice). Design Form that Display Above detail. Provide Add, Update, Delete, Next, first, last, pervious functionalities. Create Crystal Report for above application.	
	7	Design a crystal report for the table given in the Q:6. Report should be Author wise and summarize it with Book count and Total of the price (Author wise).	

TEXT BOOK/S:

REFERENCE BOOKS:

WEB RESOURCES:

REQUIRED SOFTWARE/S

1. Visual Studio 2008

COURSE TITLE	CORE JAVA PRACTICAL
COURSE CODE	**CC-214**
COURSE CREDIT	**3**
Session Per Week	**3**
Total Teaching Hours	**40 HOURS**

AIM

To develop practical skill about the basic java programming language with OOP concepts.
To provide development skill of interface, exception handling, threading and applet.

LEARNING OUTCOMES

On the completion of the course practically students will:
1. Understand the java programming and Object Oriented Programing concepts.
2. Understand the concepts of Interface, Exception handling, Threading, and Package.
3. Understand the basic concepts of Applet.

DETAIL SYLLABUS

UNIT	TOPIC / SUB TOPIC	TEACHING HOURS
1	**Java Introduction**	**10**
1	Write a program to evaluate simple interest of a given principle, rate and time.	
2	A motor cycle dealer sells two-wheelers to his customer on loan, which is to be repaid in 5 years. The dealer charges simple interest for the whole term on the day of giving the loan itself. The total amount is then divided by 60(months) and is collected as equated monthly instalment (EMI). Write a program to calculate the EMI for a loan of Rs. X, where X is given from command line argument. Print the EMI value in rupees.	

3	A car accessories shop assigns code 1 to seat covers, 2 to steering wheel covers , 3 to car lighting and 4 for air purifiers. All other items have code 5 or more. While selling the goods, a sales tax of 2% to seat covers ,3% to steering wheel covers, 4% to car lighting, 2.5% to air purifiers and 1.2% for all other items is charged. A list containing the product code and price is given for making a bill. Write a java program using switch statements to prepare a bill.	
4	Write a java program to scan 3 integer values from the command line argument and display the maximum number using conditional operator.	
5	Write a program to calculate the hypotenuse of right angled triangle when other sides of the triangle are given. (Hypotenuse = square root (x*x + Y *Y))	
6	Write a program to calculate the area of square and rectangle by overloading the area method.	
7	Create a complex number class. The class should have a constructor and methods to add, subtract and multiply two complex numbers and to return the real and imaginary parts.	
8	A shop during festival season offers a discount 10% for purchase made up to Rs.1,000, 12% for purchase value of Rs.1,000 or more up to Rs 1,500 and 15% for purchase value of Rs.1,500 or more. Write a program to implement the above scheme for a given sales and print out the sales and print out the sales value, discount and net amount payable by a customer. Create necessary methods and constructors.	
9	A bank gives 6.5% per annum interest on deposits made in that bank. Write a program to calculate the total amount that a person will receive after the end of 5 years for a deposit of Rs.5000 for compound interest. Create necessary methods and constructors too.	
10	Write a java program to display powers of 2 i.e. 2,4,8,16 etc up to 1024 using bitwise operators.	
2	**Array, Inheritance and Interface**	**10**
1	Write a program to sort the elements of one dimensional array. Read value of array elements through command line argument.	
2	Write a program to create an array to store 5 integer values. Also initialize the array with 5 numbers and display the array Elements in reverse order.	
3	Write a program to find sum of two matrices of 3 x3.	
4	Write program to create an array of company name and another array of price quoted by the company. Fetch the company name who has quoted the lowest amount.	
5	Write an interface called numbers, with a method in Process(int x, int y). Write a class called Sum, in which the method Process finds the sum of two numbers and returns an int value. Write another class called Average, in which the Process method finds the average of the two numbers and returns an int.	

6	Create a class called NumberData that accept any array of the five numbers. Create a sub class called Numplay which provides methods for followings: 1. Display numbers entered. 2. Sum of the number. 3. Average of the numbers. 4. Maximum of the numbers. 5. Minimum of the numbers. Create a class that provides menu for above methods. Give choice from the command-line argument.	
7	Declare an abstract class Vehicle with an abstract method named numWheels( ).provide subclasses Car and Truck that each implements this method. Create instance of these subclasses and demonstrate the use of this method	
8	Write an interface called Exam with a method Pass(int mark) that returns a Boolean. Write another interface called Classify with a method Division(int average) which returns a string. Write a class called Result which implements both Exam and Classify. The pass method should return true if the marks is greater than or equal to 35 else false. The division method must return "First" when the parameter average is 60 or more, "second" when average is 50 or more but below 60, "no division" when average is less than 50.	
9	Create class calculation with an abstract method area( ). Create Rectangle and Triangle subclasses of calculation and find area of rectangle and triangle.	
10	The abstract Vegetable class has four subclasses named cabbage, carrot and potato. Write an application that demonstrates how to establish this class hierarchy. Declare one instance variable of type string that indicates the color of a vegetable. Create and display instances of these object. Override the toString() method of object to return a string with the name of the vegetable and its color.	
3	**Package, String and Exception Handling**	**10**
1	Create a package P and within that package create class PackClass which have method called findmax( ) which find maximum value from three numbers. Now import the package within another class DemoClass and now display the maximum number.	
2	Write a program that creates three different classes in three different packages and access them from default package. All the three packages should be at the same level.	
3	Create package pack1 within this package create class A which contains one instance variable and one instance method. Create another package pack2 within this package create class B. where class B is calling the method and variable of class A	
4	Write a program that accepts a string from command line and perform following operations: 1. Display each character on separate line in reverse order. 2. Count total number of chracters and display each character's position too. 3. Identify that whether the string is palindrom or not. 4. Count total number of uppercase and lowercase characters in it.	

5	Write a Java program to input n integer numbers and display lowest and second lowest number. Also handle the different exceptions possible to be thrown during execution.	
6	Write a program that takes a string from the user and validate it. The string should be at least 5 characters and should contain at least one digit. Display an appropriate valid message.	
7	Write an application that accepts marks of three different subject from user. Marks should be between 0 to 100, if marks of any of the subject is not belong to this range, generate custom exception out of RangeException. If marks of each subjects are greater than or equal to 40 then display message "PASS" along with percentage, otherwise display message "FAIL". Also write exception handling code to catch all the possible runtime exceptions likely to be generated in the program.	
8	Write a program which takes the age of 5 persons from command line and find the average age of all persons. The program should handle exception if the argument is not correctly formatted and custom exception if the age is not between 1 to 100.	
9	Write an application that converts between meters and feet. Its first command-line argument is a number and second command line argument is either "centimeter" or "meter". If the argument equals "centimeter" displays a string reporting the equivalent number of meters. If this argument equals "meters", display a string reporting the equivalent number of centimeter. If unit is not given properly then generate custom exception Unitformatexception. If first argument is not proper format then generate numberformatexception. Generate other exception as per requirements. (1 meter=100 centimeter)	
10	Write a program that accepts 5 even numbers from command line , if any of the numbers is odd then throw custom exception OddException and count such invalid numbers.	
4	**Multithreading and Applet**	**10**
1	Write an application that starts two thread. First thread displays even numbers in the range specified from the command line and second thread displays odd numbers in the same range. Each thread waits for 300 milliseconds before displaying the next numbers. The application waits for both the thread to finish and then displays the message "Both threads completed".	
2	Write a program that create and starts five threads. Each thread is instantiated from the same class. It executes a loop with ten iterations. Each iteration displays the character 'x' and sleep for 500 milliseconds. The application waits for all threads to complete and then display a message 'hello'.	
3	Write a java program to create 2 threads each thread calculates the sum and average of 1 to 10 and 11 to 20 respectively. After all thread finish, main thread should print message " Task Completed". Write this program with use of runnable interface.	
4	Create two thread. One thread print 'fybca' 4 times and another thread print 'sybca' 6 times. Set priority for both thread and when thread finished print 'tybca' from main.	

5	Create an applet which draws a line, rectangle and filled circle in applet display area.
6	Write applets to draw the following shapes. a. cone b. cylinder c. cube
7	Write an applet that take 2 numbers as parameter and display their average and sum.
8	Write a Java applet that draws a circle centred in the centre of the applet. The radius of the circle should be passed as a parameter.
9	Write an applet that draw a circle divided in 6 equal parts.
10	Write an applet that draw a rectangle divided in 5 equal parts.

TEXT BOOK/S:

Programming in Java
Oxford Publication
By Sachin Malhotra and Saurabh Choudhary

REFERENCE BOOKS:

1. Programming in Java 2
   Jaico publishing house
   By Dr. K. Somasundaram
2.The Complete Reference Java2
   TMH Publication
   By Herbert Schildt

WEB RESOURCES:

1. docs.oracle.com/javaee/6/tutorial/doc/girgm.html
2. docs.oracle.com/javaee/6/tutorial/doc/bnagi.htm
3.www.javatpoint.com
4.www.tutorialspoint.com

REQUIRED SOFTWARE/S

1. Any editor of Windows or Linux/UNIX.
2. JVM version 1.8

Foundation Course
FC – 202(1) Scientific Computing

Course Introduction:

The course introduces the Computer Science student to the numerical methods necessary for scientific computing such as Error, propagation, solutions of Non linear and Transcendental Equations, interpolation and Curve Fitting.

Objectives:
1.) To understand the concepts, techniques & applications of scientific computing.
2.) To develop the skills of solving real life problems by using computer programming.
3.) To make students to understand the art of applying Mathematical techniques to solve some real life problems.
4.) To gain knowledge of scientific computing.

No. of Credits: 2
Theory Sessions per week: 3
Teaching Hours: 40 hours

UNIT	TOPICS / SUBTOPICS	TEACHING HOURS
	Errors in Computation	**10 hours**
1	- Introduction - Significant Digits and Floating-Point Representation **Floating point Arithmetic** - Addition Operation - Subtraction Operation - Multiplication Operation - Division Operation	5 hrs
	- Errors in Computation - Absolute and Relative Errors - Calculation of Absolute and Relative Errors - Error Propagation	5 hrs
	Practical Demo should be given for Floating point Arithmetic and Error in C/C++	
	Numerical Methods for Nonlinear and Transcendental Equations	**10 hours**
2	- Introduction - Graphical Method - Tabulation Method	2 hrs
	Iteration Methods - Bisection Method - False Position Method - Newton–Raphson Method	4 hrs
	Numerical Integration	4 hrs
	- Introduction - General Quadrature Formula (GQF) - Trapezodial Rule - Simpson's 1/3 rule	

	Practical Demo should be given for Iteration Method in C/C++		
3	**Interpolation**		**10 hours**
	• Introduction • Lagrange Interpolation Method • Methods Based on Finite Differences • Forward Differences and the Forward Difference Table • Newton's Forward Interpolation Formula		5 hrs
	• Backward Differences and the Backward Difference Table • Newton's Backward Interpolation Formula • Divided Differences and the Divided Difference Table for Unequally Spaced Points • Newton's Divided Difference Interpolation Formula		5 hrs
	Practical Demo should be given for Interpolation Method in C/C++		
4	**Curve Fitting**		**10 hours**
	• Introduction • Straight Line Fit Using the LSF Method • Reverse Straight Line Fit • Polynomial Fit by the LSF Method • Power Function Fit Using the LSF Method		5 hrs
	• Exponential Function Fit by the LSF Method • Error Estimation in LSF Method • Weighted Least Square Approximation • Straight Line Fit Using the WLSF Method Polynomial Curve Fit Using the WLSF Method		5 hrs
	Practical Demo should be given for different Methods of Curve Fitting in C/C++		

Note: - C/C++ Programs and Algorithms should not be asked in theory examination.
Textbook:

Numerical Analysis with Algorithms and Computer Programs in C++
Publication : PHI Learning Private Limited
By   Ajay Wadhwa
Chapter-1, 2, 4, 8

Reference Book:

1. Computer Oriented Numerical Methods
   Publication: Khanna Book Publishing Co. Ltd.
   By R.S.Salaria

2. Numerical Methods for Scientists and Engineers (Third Edition)
   Publication: PHI Learning Private Limited
   By K. Sankara Rao

Foundation Course
FC-202(2) eGovernance

Course Introduction:

Students will be provided with basic awareness of 'what', 'why' and 'how' of e-governance as well as impact of e-government on different stake holders. E-government implementation requires multi-disciplinary approach. Discussion of Case Studies of successful e-governance projects in developing countries will increase understanding of the technical, public administration, economic, managerial perspective of e-government to the students.

Objectives:

Students would be able to

1.) Comprehend the Need and Scope of E-governance.
2.) Understand how projects affecting mass and different stakeholders are planned and implemented.

No. of Credits: 2
Theory Sessions per week: 3
Teaching Hours: 40 hours

UNIT	TOPICS / SUBTOPICS	TEACHING HOURS
	Introduction	**10 hours**
1	• **E-Government: Definition and Scope** o Nature of Clients Served and the Service Delivery Process o E-Government: Different Stages of Evolution o E-Government verses E-Governance.	3 hrs
	• **E-Government in the Context of Developing Countries** o Nature of Applications for Different Types of Clients o Challenges in Design and Implementation o Investments in E-Government o Reasons for Implementing E-Government o E-Government Readiness of Countries o Status of E-Government in India o Key Challenges in Further Development of E-Government	5 hrs
	• **Making E-Government Work for Rural Citizens** o How can ICT Use and E-Government Help the Poor o Challenges in Building Pro-poor E-Government	2 hrs
2	**Benefits and Impact of e-Government**	**10 hours**
	• **Potential Benefits of E-Government for Key Stakeholders** o Benefits for Citizens : Results from an Impact Assessment Study o Benefits for Businesses: Results from an Impact Assessment Study	5 hrs

		o Benefits for Agencies Implementing E-Government Applications	
		• **Impact of E-Government on Transparency and Corruption** o Results from a Study of Impact on Corruption o Improvement in Transparency through E-Government o Dealing with Corruption through E-Government	5 hrs
3	**E-Governance Projects and its Success**		**10 hours**
		• **Guidelines for Implementing Projects Successfully** o Life Cycle of an E-Government Project o Conceptualizing Project Definition and Scope: Starting Small o Process RE-engineering o Designing a Citizen-centric Service Delivery mechanism o Communicating with Users o Seeking Partnerships: Avoiding Reinvention of the wheels o Phasing Implementation o Capacity to manage change o Strong Internal leadership and Project Management o Risk Factors in Implementing E-Government Projects	10 hrs
4	**Case Studies and the road ahead**		**10 hours**
		• **Government of Citizen (G2C) Applications** o Online Delivery of Municipal Services: Ahmedabad Municipal Corporation, Vijaywada, Kalyan-Dombiwali • **Government to Business (G2B) Applications** o Online Tax Filing Systems in Different Countries o Computerization of Interstate Border Check posts in Gujarat • **Government to Government (G2G) Applications** o Computerization of the Treasuries in Karnataka (Khajane)	8 hrs
		• **E-Government : The Way Ahead**	2 hrs

Textbook:

Unlocking E-Government Potential: Concepts, Cases and Practical Insights
Publication: Sage Publications
by Subhash Bhatnagar

Reference Books:

1. E-Governance Today
   Publication: ICFAI University Press
   by Sowmyanarayan Sadagopan

2. Government Online: Opportunities and Challenges
   Publication: Tata McGaw Hill
   by M P Gupta, Prabhat Kumar, Jaijit Bhattacharya

Foundation Course
FC-202(3) Interpersonal Skills

Course Introduction:
A study related with the interpersonal skill and behavior patterns. The topics include interpersonal communication to problem solving and management with good leadership skills.

Objectives:
The student would be able to:

1.) Manage their interpersonal skills and conflicts in an efficient way.
2.) Understand leadership skills and maintain team building.
3.) Practice time management and solve problem related with it.
4.) Solve problems of any issue by resolving conflicts and negotiating.
5.) Structure their ethical decision making.
6.) Appreciate and respect the culture difference and manage cross cultural differences.

No. of Credits: 2
Theory Sessions per week: 3
Teaching Hours: 40 hours

UNIT	TOPICS / SUBTOPICS	TEACHING HOURS
	Skill: An Introduction	**10 hours**
1	• **Interpersonal skills and effective management behavior** o Behavior o Motivation o Skill and the need for skills training	4 hrs
	• **Self Management** o Clarifying Values o Setting Goals and Planning o Group Exercise-The Alligator Rives	3 hrs
	• **Applying Emotional Intelligence** o Group Exercise-Head versus Heart	3 hrs
	Problem Solving	**10 hours**
2	• **Ethical Decision Making** o Group Exercise-Mini Cases o Group Exercise-Anticipating Ethical Conflict	3 hrs
	• **Creative Problem Solving**	2 hrs
	• **Resolving Conflict**	2 hrs
	• **Negotiating** o Group Exercise-The used car Negotiations	3 hrs

3	**Leadership and Team Building**	**10 hours**
	• **Leadership Qualities and Team Building**	3 hrs
	• **Team Building**	3 hrs

	• **Team Motivation**
	   o Goal Setting
	   o Case Study-Setting Goals at State Bank of Vermont
		4 hrs

4	**Communication of Management**	**10 hours**
	• **Time Management**	3 hrs
	• **Stress Management**	2 hrs
	• **Communicating across cultures** o Group Exercise-What just happened?	3 hrs
	• **Cross Cultural Etiquette**	2 hrs

Textbook:

Training in Interpersonal Skill
Publication: PHI
By Stephen P. Robbins and Phillip L. Hunsaker

Elective Course
EC-202(1) History of Gandhian Movement

Course Introduction:

Mahatma Gandhi is the father of the modern India. According to him Truth is God and God is Truth. His life was an experiment with truth and he had strong faith in peace, truth and non-violence. Basic education was his brainchild and its principles were based on his philosophy of life. The course focuses on Gandhiji's childhood, youth and the movement started by him at South Africa and India.

Objectives:

The Students would be able to:

1.) To know the principles followed by Gandhiji.

2.) To understand how he involved in Satyagraha movement.

3.) To also know how he dealt with injustice done by the British Government before Independence.

4.) To understand the life and works of Gandhiji.

No. of Credits: 2
Theory Sessions per week: 2
Teaching Hours: 20

UNIT	TOPICS / SUBTOPICS
	Gandhiji's Childhood and Youth
1	• Birth and parentage • At school • Marriage • Stealing and Atonement • Glimpses of religion • In England as student • In India as Barrister
	Gandhiji in South Africa
2	• Arrival in South Africa • Getting acquainted with the Indian Problem • Civil rights movement in South Africa • 'Indian Opinion' • The Phoenix settlement • The Zulu 'Rebellion' • Domestic Satyagraha • The advent of Satyagraha • Tolstoy Farm

3	**Gandhiji in India**	
	• Founding of the Ashram • Champaran and Kheda Satyagraha • Non- Cooperation Movement • Salt Satyagraha (Salt March) • World War II and Quit India Movement • The Rowlatt Act • 'Navajivan' and 'Young India' • The Birth of Khadi	
4	**World Leaders Inspired by Gandhiji**	
	• Nelson Mandela : The South African leader • Martin Luther King Jr • Aung San Suu Kyi: The Burmese leader • Barack Obama	

Textbook:

Gandhi the Man
Publication: Jaico
By Eknath Easwaran

Reference Book :

1. Gandhi and the Mass Movements
   Publication: Atlantic Publishers
   By S.R.Bakshi

2. Gandhian Non-Violence And India's Freedom Struggle
   Publication: Mahesh Jain
   By Asha Rani

3. Gandhiji's Autobiography
   Publication: Navjivan Publishing House

4. Gandhi and South Africa
   Publication: Navjivan Publishing House

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ELECTIVE COURSE
EC-202(2) Introduction to Science and Technology

Course Introduction

This course offers an introduction of Science and Technology to students from non-science background. The course will deliver positive and informed values and attitudes towards themselves, others and science and technology.

Objectives

The student would be able:

1.) To develop their knowledge and understanding of the role of science in creating/ changing: the environment, information & communication, life-styles products and services, agriculture, health and nutrition.
2.) To understand the impact of technologies people select and use; how these technologies affect other people, the environment and the future
3.) To introduce students to the some aspects of science of the future times and how it will affect human kind.

No. of Credits: 2
Theory Sessions per week: 2
Teaching Hours: 20 hours

UNIT	TOPICS / SUBTOPICS
1	**Introduction to Science and technology and its role**

	• **Introduction to Science**
	  o History of science
	  o Major Historical Scientific and technological achievements in India
	• **Role of science and technology in today's world**
	  o Science and technology and the developing countries
	  o Science Policy in India
	  o Role of science in India
	  o Societal aspects of science and technology in India

	• **Emergence of modern Science in India**
	  o Science & technology in the 20th century
	  o Science and technology infrastructure in India Today
	  o Overview of India's achievements in Science & tech. sphere
	  o Variety of Science Communication Media

2	**Nuclear Technology & Material Technology**

	• **Nuclear Technology**
	  o Nuclear Energy
	    ▪ Introduction and Scientific basis of nuclear energy

	- Advantages and Disadvantages of nuclear Fission Energy - Reactor Safety systems - Radioisotopes & its applications - Medical Diagnosis using nuclear medicine - Radiotherapy - Radiation and Environment - Radiation damage and its study - Research and development in nuclear technology in India
	Material Technology - Nanoscience and nanotechnologies - Basics of Nanoscience - Introduction to Nanomaterials - Applications of Nanotechnology - Cryogenics - Laser and Photonics - Photonics and its applications - Lasers and its applications
3	**Space Technology & Earth Sciences in India** Space Technology - Launch Vehicle Technology - Propulsion method for launch vehicles - Satellites and their orbits(GTO orbits) - Global Positioning System - Scientific Experiments on the space station - Remote Sensing - Some Important Indian satellites - Brief about PSLV & GSLV **Earth Sciences in India** - Introduction to earth science **Meteorological science** - Meterology - Weather Prediction - Weather Modification and cloud seeding
4	**Defence and Biotechnology** - The effects of weapons of Mass destruction - Nuclear Weapons - Effects of Nuclear weapons - Biological and toxin weapons - Missile Technologies - Defence in India - Defence Research and development organization - BRAHMOS cruise missiles - Stealth technology and aircraft

- **Biotechnology**
    - What is Biotechnology?
    - Important techniques used in Biotechnology
    - Nanobiotechnology
    - Cloning
    - Bioinformatics technology
    - Major Application Areas of Biotechnology

Text Book:

Science and technology
Publisher: Tata McGraw Hill
Author: Ashok Kumar Singh
Chapters 1 to 13, 26 to 30 and 33 to 39 (to be covered)

Reference Books:

1. CONCEPTS OF NUCLEAR PHYSICS
   Publisher: Tata McGraw Hill
   By Bernard Cohen

2. The Good Earth: Introduction to Earth Science
   Publisher: Tata McGraw Hill
   By David McConnell, David Steer,
        Katharine Owens, Catherine Knight

3. Understanding Space: An Introduction to Astronautics + Website
   Publisher: Tata Mc Graw Hill
   By Jerry Sellers, William Astore,
        Robert Giffen, Wiley Larson

Elective Course
EC-202(3) Introduction to Humanities

Course Introduction:
This elective course in humanities aims at introducing to the subject of social science, with special emphasis on the issues pertaining to evolution of human society, emergence and various aspects of society in modern India. It also covers issues pertaining to social, political and administrative systems existing in India. The course is framed to familiarize students with the developments in economics, arts and aesthetics and the present day challenges experienced by India and the World societies.

No. of Credits: 2
Theory Sessions per week: 2
Teaching Hours: 20 hours

UNIT	TOPICS / SUBTOPICS
	Human Society And Its Evolution

1	• **World Perspective**
	  o Introduction: Meaning of Society, relevance of human beings in relation to the study of social sciences, Evolution in tools/technology in various ages(Stone Age, Bronze Age and Iron Age), Rise of religions of the world.
	  o Role of nature and its adaptation by human beings through different ages, Evolution of human beings as thinking individuals, Evolution of Knowledge(magical form, Scietific and Religious form), Geographical discoveries and Colonisation.
	  o Emergence of the modern world: Fuedalism, Capitalism, Humanism, Secularism.
	  o Post Renaissance influences-on literature, Architecture,Art, Philosophy and Science.
	  o Industrial Revolution and its influence on the society
	
	• **Indian Perspective**
	  o Pre-colonial economy: characteristics pertaining to agriculture, trade and handicrafts industry.
	  o Evolution of colonial rule and its impact on India (Drain theory, De-industrialization), impact on the indian agrararian economy.
	  o Important movements in the Indian History before and after Gandhian Era, Economic developments in the pre and post independence period.
	  o Concepts of secularism, nationalism, internationalism, communalism, regionalism.
	  o Major Challenges: Education, Upholding Democracy, Bueracracy etc.

2	**Social, Politica And Administrative Systems**	
	• **Social Structure**	
		o Meaning of social structure; concept of ROLE and STATUS, Components of Social structure- Social stratification and Division of labour.
		o Social Institutions: Family, Marriage.
		o Economic Institutions: Types of economic systems(Hunting and gathering, pastoral and horticultural economy, agrarian economy and industrial economy. Political systems and types of authority which impact the social structure.
		o Religion: Positive and Negative aspects of Religion on society.
		o Marginalized groups in a society: meaning, Types: orphaned, delinquent, destitute children, Disabled, Women in distress, Commercial sex workers, Scheduled castes, Scheduled tribes, OBCs, Denotified tribes, Minorities. Social Changes and the factors causing them(Biological, geographical, technological,socio-cultural)
	• **Political systems:** (with reference to India)	
		o History, composition and basic features of the Indian Constitution.
		o Democracy: meaning, state institutions and the democratic process, role of non-state institutions/groups in the democratic process.
	• **Administrative Systems**	
		o Administrative Structure: Role of The Chief Executives at Union level, state level and district level.
		o Composition of line agencies: departments, public corporations and public enterprises, boards and commissions
		o Composition of staff agencies: General agencies, technical agencies and auxilliary agencies.
		o Important Administrative Processes: Planning, Decision-making, Communication, Control and co-ordination.
		o Governance issues and strategies: Characteristics, functions and difference between state and Government.
		o Governance: its concept, significance and characteristics, relevance of good governance.
3	**Economic Development, Development of Arts and Aesthetics**	
	• **Indian Economy**	
		o Features, Development and Growth strategies through planning in the post independence period. Performance of the Indian Economy post 1990(economic reforms era) yanmurthi
	• **Arts and Aesthetics: (with reference to India)**	
		o Literature: Introduction to Poetry, fiction, drama, novels, short stories.

		o Fine Arts: Introduction to Paintings(pre and post medieval ages, modern era) o Dance: History and Types of Indian Classical Dances o Music: History and Types of Indian Music and major indiginous musical instruments. o Theatre and Indian Cinema: Forms of Theatre in Modern Era, Cinema in modern era and Its impact on the society.

4		**Contemporary Concerns and Challanges: (with reference to India for sub points**
		 • **Human Security**
		   o Valuing human beings as assets/resources, concept of human rights, concept of human security including health, food
		 • **Educaton and Awareness**
		   o Aims and importance of education, challenges to education in the modern era.
		 • **Informaiton and Communication Technology**
		   o Role of ICT, Socio- economic implications of ICT
		 • **Peace and**. **Conflict**
		   o Challenges to World Peace, Role, functioning and obstacles to Efforts of the UNITED NATION, SAARC,EU,APEF.
		 • **Globilisation**
		   o Pros and cons.
		 • **Environment**
		   o Environmental initiatives in India and challenges.

Elective Course
EC-202(4) Disaster Management

Course Introduction:
This course aims to provide an insight into immensely significant area of common welfare. The course will enable a student to understand the major types of natural and man-made disasters and also methods of mitigating their ill-effects on the human race. The course also covers a few modern disasters which are hitherto not experienced by humankind across the globe.

Course Objective:
The student would be able
1) To understand the concept of managing the Disasters when it occurs.
2) To apply their technical knowledge to manage the Disasters.
3) To identify the key points and area where and how to use the Information Technology to manage the damage in disasters.
4) To get detailed knowledge of various Government agencies and NGOs dealing for disaster management.

No. of Credits: 2
Theory Sessions per week: 2
Teaching Hours: 20 hours

UNIT	TOPICS / SUBTOPICS
	Introduction to Disasters / Hazards
1	- Definition of disaster: - General Effects of disasters - Causal Factors - Disasters and development (cause and effect) - Meaning of Disaster Management - Types of Disaster/Hazards: - Natural - Anthropogenic - Sociological - Technological - Transport - Climate change - Social and Psychological dimensions of disasters - Coping with stress, anxiety and fears - Technology and disaster management - Latest Technological equipment - Disaster Response: - Reasons for concern - Objectives - Study of responses in Kutch Earth-quake, 2001

2	**Disaster Management**
	• Definition • Need • Obstacles • Disaster Relief and Factors • International approach to integrated disaster risk management • Risk Mitigation Strategies • Participatory assessment of disaster risk • Disaster Reduction • Communicable diseases occurring after natural disasters • Their prevention • Mass casually management • Technology and disaster management and latest technological equipment to combat disasters
3	**Relief, Rehabilitation, Recovery and Role of NGO and Government**

	• Relief
	• Rehabilitation
	• Displacement and Development
	• Priorities and opportunities in Rehabilitation and reconstruction
	• Relevance of Mitigation and its techniques
	• Mitigation measures
	• People's Participation
	• Disaster Recovery
	    o Business continuity planning
	• Role of NGO in Managing disasters
	• India's natural disaster's proneness:
	    o Management of disasters in India
	    o Institutional and policy framework
	    o Government Policies for Disaster Planning

4	**Use of IT in Disaster Management, Applications and Future of Disaster Management**

	• **Use of IT in Disaster Management:**
	    o Computer Attack
	    o Other latest technological Equipments:
	        ▪ TSUNAMI WARNING SYSTEM
	        ▪ CENS (Community Emergency Notification System)
	        ▪ CREST (Consolidated Reporting of Earthquakes and Tsunamis)
	        ▪ CUBE (Caltech USGS Broadcast of Earthquakes)
	        ▪ DART (Deep Ocean Assessment and Reporting of Tsunamis)
	        ▪ EAS (Emergency Alert System)
	        ▪ EMWIN (Emergency Managers Weather information Network)
	        ▪ GPS (Global Positioning System)

| | | ITIC (International Tsunami Information Center) NOAA (National Oceanic and Atmospheric Administration) NWS (National Weather Service) PTWS (Pacific Tsunami Warning Center) RACE (Rapid Alert Cascadia Earthquake) REDI (Rapid Earthquake Data Integration) SAWS (Simultaneous Announcement Wireless System) THRUST (Tsunami hazard Reduction Using System Tech.) WC/ATWC (West Coast/Alaska Tsunami Warning Center) Audio Evacuation System Laser Scanning Remote Sensing-GIS Integration Atmospheric Water Generator The AIRCRAFT GATEWAY PROCESSOR (AGP) Mobile Electronic Warfare Platform **Applications in Disaster Management:** Bio-terrorism Framing the Problem Threat assessment Statistical Seismology and its application |

Textbook: Disaster Management
             Publisher: Himalaya Publishing House
             By M. Saravana Kumar

Reference Books:

1.Introduction to Disaster Management
     Publisher: Macmillan
     By Satish Modh

2.The Disaster Recovery Handbook
     Publisher: PHI
     By Michael Wallace and Lawrence Webber

3.Citizen's Guide to Disaster Management
     Publisher: Macmillan
     By Satish Modh

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Elective Course
EC-202(5) History of Gujarat and its Culture

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No. of Credits: 2
Theory Sessions per week: 2
Teaching Hours: 20 hours

Syllabus and text book as per B.B.A Syllabus Semester III Elective Course.