Amrita University's Amrita Values Programme (AVP) is a new initiative to give exposure to students about richness and beauty of Indian way of life. India is a country where history, culture, art, aesthetics, cuisine and nature exhibit more diversity than nearly anywhere else in the world.

Amrita Values Programmes emphasize on making students familiar with the rich tapestry of Indian life, culture, arts, science and heritage which has historically drawn people from all over the world.

Students shall have to register for any two of the following courses, one each in the third and the fourth semesters, which may be offered by the respective school during the concerned semester.

**Courses offered under the framework of Amrita Values Programmes I and II**

**Message from Amma’s Life for the Modern World**
Amma’s messages can be put to action in our life through pragmatism and attuning of our thought process in a positive and creative manner. Every single word Amma speaks and the guidance received in on matters which we consider as trivial are rich in content and touches the very inner being of our personality. Life gets enriched by Amma’s guidance and She teaches us the art of exemplary life skills where we become witness to all the happenings around us still keeping the balance of the mind.

**Lessons from the Ramayana**
Introduction to Ramayana, the first Epic in the world – Influence of Ramayana on Indian values and culture – Storyline of Ramayana – Study of leading characters in Ramayana – Influence of Ramayana outside India – Relevance of Ramayana for modern times.

**Lessons from the Mahabharata**
Introduction to Mahabharata, the largest Epic in the world – Influence of Mahabharata on Indian values and culture – Storyline of Mahabharata – Study of leading characters in Mahabharata – Kurukshetra War and its significance - Relevance of Mahabharata for modern times.

**Lessons from the Upanishads**
Introduction to the Upanishads: Sruti versus Smrti - Overview of the four Vedas and the ten Principal Upanishads - The central problems of the Upanishads – The Upanishads and Indian Culture – Relevance of Upanishads for modern times – A few Upanishad Personalities: Nachiketas, Satyakama Jabala, Aruni, Shvetaketu.

**Message of the Bhagavad Gita**

**Life and Message of Swami Vivekananda**
Brief Sketch of Swami Vivekananda’s Life – Meeting with Guru – Disciplining of Narendra - Travel across India - Inspiring Life incidents – Address at the Parliament of Religions – Travel in United States and Europe – Return and reception India – Message from Swamiji’s life.

**Life and Teachings of Spiritual Masters India**
Sri Rama, Sri Krishna, Sri Buddha, Adi Shankaracharya, Sri Ramakrishna Paramahamsa, Swami Vivekananda, Sri Ramana Maharshi, Mata Amritanandamayi Devi.

**Insights into Indian Arts and Literature**
The aim of this course is to present the rich literature and culture of Ancient India and help students appreciate their deep influence on Indian Life - Vedic culture, primary source of Indian Culture – Brief introduction and appreciation of a few of the art forms of India - Arts, Music, Dance, Theatre.

**Yoga and Meditation**
The objective of the course is to provide practical training in YOGA ASANAS with a sound theoretical base and theory classes on selected verses of Patanjali’s Yoga Sutra and Ashtanga Yoga. The coverage also includes the effect of yoga on integrated personality development.

**Kerala Mural Art and Painting**
Mural painting is an offshoot of the devotional tradition of Kerala. A mural is any piece of artwork painted or applied directly on a wall, ceiling or other large permanent surface. In the contemporary scenario Mural painting is not restricted to the permanent structures and are being done even on canvas. Kerala mural paintings are the frescos depicting mythology and legends, which are drawn on the walls of temples and churches in South India, principally in Kerala. Ancient temples, churches and places in Kerala, South India, display an abounding tradition of mural paintings mostly dating back between the 9th to 12th centuries when this form of art enjoyed Royal patronage. Learning Mural painting through the theory and practice workshop is the objective of this course.

**Course on Organic Farming and Sustainability**
Organic farming is emerging as an important segment of human sustainability and
healthy life. 'Haritamritam' is an attempt to empower the youth with basic skills in tradition of organic farming and to revive the culture of growing vegetables that one consumes, without using chemicals and pesticides. Growth of Agriculture through such positive initiatives will go a long way in nation development. In Amma’s words “it is a big step in restoring the lost harmony of nature”.

Benefits of Indian Medicinal Systems
Indian medicinal systems are one of the most ancient in the world. Even today society continues to derive enormous benefits from the wealth of knowledge in Ayurveda of which is recognised as a viable and sustainable medicinal tradition. This course will expose students to the fundamental principles and philosophy of Ayurveda and other Indian medicinal traditions.

Traditional Fine Arts of India
India is home to one of the most diverse Art forms world over. The underlying philosophy of Indian life is “Unity in Diversity” and it has led to the most diverse expressions of culture in India. Most art forms of India are an expression of devotion by the devotee towards the Lord and its influence in Indian life is very pervasive. This course will introduce students to the deeper philosophical basis of Indian Art forms and attempt to provide a practical demonstration of the continuing relevance of the Art.

Science of Worship in India
Indian mode of worship is unique among the world civilisations. Nowhere in the world has the philosophical idea of reverence and worshipfulness for everything in this universe found universal acceptance as it in India. Indian religious life even today is a practical demonstration of the potential for realisation of this profound truth. To see the all-pervading consciousness in everything, including animate and inanimate, and constituting society to realise this truth can be seen as the epitome of civilizational excellence. This course will discuss the principles and rationale behind different modes of worship prevalent in India.

15BUS102 INTRODUCTION TO MANAGEMENT

Objectives: The objective of this course to enable the students to have a basic knowledge of principles of management.

Unit 1
Management: meaning and definition.

Unit 2
Importance of management, administration and management.

15COM216 PRINCIPLES OF ACCOUNTING

Objectives: The objective of this course to enable the students to have a basic knowledge of theoretical and practical aspects of various systems of accounting.

Unit 1
Financial Accounting: Meaning and important terms, accounting concepts, double entry book keeping, types of accounts, journal, ledger, trial balance.

Unit 2
Final Accounts: Preparation of Trading and Profit and Loss Accounts and Balance Sheet, adjustments relating to outstanding expenses, prepaid expenses, accrued income unearned income, depreciation and bad and doubtful debts.

Unit 3
Cost Accounting: Meaning and Definition, elements of cost, Cost sheet, Materials, purchase of materials, stores and stock control.

Unit 4

Unit 5
Some exercises and case studies.

TEXTBOOKS:
2. S.P. Jain, K.L. Narang – Cost Accounting, Kalyani Publishers
3. Tally Manual
S Y L L A B I

B C A

2 0 0 2

15CSA101 BASICS OF PROGRAMMING

Objectives: Describe the main principles of procedure oriented programming languages, programming language history and the central formalisms used in the description of programming languages.

Unit 1
Introduction to programming - problem solving techniques, algorithms, flowcharts. Introduction to C language – History of C, features, C as a structured language, C as a middle level language, applications, advantages.

Unit 2
Structure of 'C' program, preprocessor directives, Execution phases, C conventions, character set, Programming elements (tokens) Classes of data types, Declaration of variables, escape sequences (backslash character constants), Operators, operator precedence and associativity.

Unit 3
Expressions – arithmetic, relational and logical, Evaluation of expressions, type conversions (type casting), mathematical library functions. Input and Output operations – Conversion specifiers, Control statements.

Unit 4
Arrays – single dimensional arrays (linear arrays), Two-dimensional arrays – declaration, initialization, accessing elements in 2D array and memory representation, Multidimensional arrays.

Unit 5
Strings – defining strings, initializing, accessing, character handling functions, arithmetic operations on characters, character by character input and output, string handling functions, array of strings and its features.

T E X T B O O K S:

R E F E R E N C E S:

15CSA102 FUNDAMENTALS OF DBMS

Objectives: The course helps in understanding the basic concepts and needs for and uses of database management systems. Also gives a good formal foundation on the relational model of data and provides a base in SQL.

Unit 1
Introduction to DBMS - Basic Concepts.

Unit 2
Data Independence - The Three Levels of Architecture Constraints.

Unit 3
Keys - Data Models - ER – Model - Relational Model.

Unit 4
Structure of Relational Databases Normalization - Functional Dependency – Boyce One NF-2 NF, 3 NF.

Unit 5
Transaction Processing: ACID properties - Indexes SQL Basics - Classification of SQL – DDL – DML – TCL - DCL.

T E X T B O O K S:

R E F E R E N C E:
C.J. Date: An Introduction to Database Systems - Eighth Edition - Pearson Education Asia

15CSA103 FUNDAMENTALS OF WEB TECHNOLOGY

Objectives: This course provides the student with experience in the design and implementation of Internet Web sites for business applications. Defines and discuss major concepts, tool, techniques, and methods of web application development.

Unit 1
History of SGML - Introduction to Internet – Resources of Internet - Hardware and Software requirements for Internet - Internet Service Providers (ISP).

Unit 2
Unit 3 
Web Browser - Web Development Languages – HTML - tags as content containers

Unit 4
HTML5 – HTML5 elements - Building a form and form elements - Introduction to CSS
- Style Sheets Formatting - Advanced Layouts and Positioning with style Sheets.

Unit 5

TEXTBOOKS:

15CSA111 ADVANCED C 3 0 0 3
(Prerequisite: 15CSA101 Basics of Programming)

Objectives: This course is intended to introduce the advanced concepts in C and shows how these concepts are useful in programming.

Unit 1
Functions – defining function, accessing a function, need for functions, function declaration and prototypes, function call, return statement, actual and formal arguments, passing arguments to functions, passing arrays to functions, other types of functions – functions with no arguments and no return values, function with arguments but no return values, function with arguments and return values, function with no arguments and return values, recursive functions, Nesting of functions, Passing structures to functions, call by value and call by reference, storage class specifiers – automatic, register, static and external.

Unit 2
Structures – defining a structure, declaring structure variables, accessing structure elements, initializing structures, array of structures, array within structures, structures within structures, self-referential structures, uses of structures, Unions – defining unions, union of structures, uses of unions, Enumerated data types, uses of enumerated data type, typedef.

Unit 3
C - Preprocessor Macros - Macro substitution, simple, macros with arguments arguments, nesting of macros, File inclusion, Command line arguments.

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Unit 4
Pointers - Fundamentals of pointers, usage, pointer declaration and accessing the address of the variable. Initialization of pointer variables, accessing a variable through its pointer, Operations - Pointer increments, decrements, comparison and scale factor. Pointers as function arguments. Passing one dimensional array, two dimensional array to functions and array pointers. Pointers to structures and troubles with pointers.

Unit 5
Input Output in C - File modes, opening and closing of files, reading and writing of files. Introduction to binary files, difference between text and binary files. Insertion, modifying, deletion and searching records in a file.

TEXTBOOKS:

REFERENCES:
“Test your C skills”, Yashavant Kanetkar,
“Exploring C”, Yashavant Kanetkar,

15CSA112 ADVANCED DBMS 2 0 0 2
(Prerequisite: 15CSA102 Fundamentals of DBMS)

Objectives: Understanding of the components of a database system, experience with the programming version of SQL i, PL/SQL and an introduction of some advanced topics in database management, e.g., object-relational databases and design, distributed databases, database administration and data warehousing.

Unit 1

Unit 2
Data Models - ER – Model - Weak Entity Sets - Extended ER Features - Relational Model - Structure of Relational Databases - CODD’s Rule - The Relational Algebra.

Unit 3
Unit 4

Unit 5

TEXTBOOKS:

REFERENCES:
1. C.J. Date: An Introduction to Database Systems - Eighth Edition - Pearson Education Asia

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Unit 4

Unit 5

TEXTBOOKS:

REFERENCES:
1. C.J. Date: An Introduction to Database Systems - Eighth Edition - Pearson Education Asia

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sequential searching – Indexed Sequential Search – Binary Search - Analysis of searching algorithms.

TEXTBOOK:
Algorithm in C++ (Third Edition) – Robert Sedgewick (Pearson Education Asia)

REFERENCES:

15CSA114 COMPUTER ORGANIZATION AND SYSTEM ARCHITECTURE

Objectives: This course is intended to give an idea about digital circuits, basic organization and internal architecture of a computer system.

Unit 1

Unit 2

Unit 3
Central Processing Unit: Introduction - General Register Organization - Stack Organization - Instruction Formats - Addressing Modes - Data Transfer and Manipulation - Conditional Branch Instructions - RISC and CISC.

Unit 4
Parallel Processing - Pipelining - Arithmetic Pipeline - Instruction Pipeline - RISC pipeline - Vector Processing.

Unit 5
Computer Arithmetic – Introduction - Floating point representation - Multiplication Algorithm - Booth's Algorithm - Memory Organization - Memory Hierarchy - Types of Memory - Main Memory - Auxiliary Memory - Associative Memory - Cache Memory.

TEXTBOOKS:
REFERENCES:

15CSA115  OBJECT ORIENTED PROGRAMMING USING C++  2002

Objectives: This course is intended to introduce the advanced concepts of object oriented programming and shows how these concepts are useful in problem solving.

Unit 1
Introduction to Object Oriented Programming, C++ Environment: Manipulators - Classes and Objects, Making sense of core object concepts (Encapsulation, Abstraction, Polymorphism, Classes, Messages Association, Interfaces) Implementation of class in C++, C++ Objects as physical object, Object as function arguments, returning object from function, Structures and classes. Classes objects and memory static class data. Const and classes.

Unit 2
Data Members, Access Specifiers, Array within a Class, Array of Objects - Scope Resolution Operators, Inline Functions, Constructors, Default Constructors, Destructors, Static Members, This Pointer.

Unit 3
Compile Time Polymorphism: Overloading Operators, Function Overloading, Overloading Constructors, Friend Functions, Friend Classes, Inheritance Types, Function Overriding, Virtual Base Class, Constructors in Base Derived Classes, Class Containership,

Unit 4
Run time Polymorphism: Virtual Functions, Pure Virtual Functions, Abstract Class, Class Templates, Function Templates, Exception Handling.

Unit 5
Data files - C++ stream classes, unformatted and formatted I/O operations, Opening and closing of files, File modes, File pointers and manipulation, Sequential input and output operations , Updating a file, Error handling during file operations

TEXT/REFERENCES:

15CSA181  BASICS OF PROGRAMMING LAB.  0031

1. Program to accept two numbers and find their sum, difference, product, quotient and remainder
2. Program to accept three numbers and find their average
3. Program to swap two numbers with and without using a temporary variable
4. Program to find whether the given number is even or odd
5. Program to check whether a number is positive or negative
6. Program to find area and circumference of the circle given its radius
7. Program to find radius of the circle given its area
8. Program to find radius of the circle given its circumference
9. Program to find the area of a triangle given three sides
10. Program to find area of a triangle given two sides and an included angle.
11. Program to accept height in feet and display the height in inches and centimeters
12. Program to find the biggest of two numbers using ternary operator
13. Program to find the biggest of three numbers using ternary operator
14. Program to find the largest of three numbers using nested if statement
15. Program to find the largest, second largest and smallest of three numbers
16. Program to find the highest of four marks of a student using else-if ladder
17. Program to find the roots of a quadratic equation using else-if ladder
18. Program to find the reverse of a given number and check if the number is palindrome or not
19. Program to find the GCD of given two numbers and hence compute LCD
20. Program to generate the multiplication table for a number in a proper format
21. Program to find whether a given number is an Armstrong number
22. Program to find the factorial of a given number
23. Program to display all numbers from 1 to n which are not divisible by 5
24. Program to generate Fibonacci series
25. Program to generate Pascal triangle
26. Program to accept day number of the week and display the corresponding week day using switch statement
27. Program to convert binary number to decimal
28. Program to find the frequency of a given digit in a number
29. Program to check whether the given date is valid or not
30. Program to find the difference between two dates
31. Program to search an element in a given array
32. Program to find the sum of elements of an array
33. Program to print odd numbers first and then even in an array
34. Program to insert an element at position k in an array of size n where k≤n
35. Program to delete an element from position k in an array of size n where k≤n
36. Program to generate first n Fibonacci terms using an array
37. Program to find the sum of even and odd numbers between 1 and n where n is an integer using array
38. Program to find the sum and difference on two matrices
39. Program to identify the matrix as square or rectangular or scalar matrix given order m x n
40. Program to find the sum of all elements in upper triangular and lower triangular elements
41. Program to check if a given matrix is symmetric or not
42. Program to find the row and column sum for each row and column of a given matrix
43. Program to find trace and norm of a square matrix
44. Program to print the sum of diagonal elements of a matrix
45. Program to determine whether the given matrix is an upper triangular matrix
46. Program to find the largest and smallest in each row of a given matrix
47. Program to find the largest and smallest in each column of a given matrix
48. Program to print ASCII code for a given character
49. Program to check if a given character is a letter or a digit or a special character using ASCII value
50. Program to check if a given character is a letter or a digit or a special character without using ASCII value
51. Program to check if the given character is a vowel or consonant
52. Program to accept a string and count the number of vowels and consonants in it
53. Program to input a line of text and remove all blanks and punctuations
54. Program to search for a given name in a list of names

15CSA182  FUNDAMENTALS OF DBMS LAB.  0 0 3 1

1. Create the following tables and perform the query below.

<table>
<thead>
<tr>
<th>SUPPLIER</th>
<th>FIELD NAME</th>
<th>TYPE</th>
<th>CONSTRAINT</th>
</tr>
</thead>
<tbody>
<tr>
<td>SNO</td>
<td>VARCHAR2(5)</td>
<td></td>
<td>PRIMARY KEY</td>
</tr>
<tr>
<td>SNAME</td>
<td>VARCHAR2(30)</td>
<td></td>
<td>NOT NULL</td>
</tr>
<tr>
<td>CITY</td>
<td>VARCHAR2(30)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STATUS</td>
<td>NUMBER(5)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PARTS</th>
<th>FIELD NAME</th>
<th>TYPE</th>
<th>CONSTRAINT</th>
</tr>
</thead>
<tbody>
<tr>
<td>PNO</td>
<td>VARCHAR2(5)</td>
<td></td>
<td>PRIMARY KEY</td>
</tr>
<tr>
<td>PNAME</td>
<td>VARCHAR2(30)</td>
<td></td>
<td>NOT NULL</td>
</tr>
<tr>
<td>COLOR</td>
<td>VARCHAR2(30)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WEIGHT</td>
<td>NUMBER(5)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SUPPLIER_PARTS</th>
<th>FIELD NAME</th>
<th>TYPE</th>
<th>CONSTRAINT</th>
</tr>
</thead>
<tbody>
<tr>
<td>SNO</td>
<td>VARCHAR2(5)</td>
<td></td>
<td>FOREIGN KEY</td>
</tr>
<tr>
<td>PNO</td>
<td>VARCHAR2(30)</td>
<td></td>
<td>FOREIGN KEY</td>
</tr>
<tr>
<td>SDATE</td>
<td>DATE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>QTY</td>
<td>NUMBER(10,2)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Insert 10 records inside three tables.
b. Get the details of all Parts.
c. Get the details of all Suppliers.
d. Get the details of Suppliers in the city ‘Paris’.
e. Count the number of Suppliers
f. Get the maximum status in the Supplier Table
g. Get the name of the suppliers in the city of London
h. Get the details of Suppliers whose status is between 10 and 20
i. Get the name of the Parts in the colours (Red, Blue, Green) (using ‘IN’ and ‘OR’).
j. Get the name of the Supplier who lives in the same city of Supplier ‘James’.
k. Get the details of Suppliers currently not supplying any product.
l. Get the Sname and total qty of Parts supplied by each Supplier.
m. Get the date on with product ‘Nut’ was last supplied.
n. Get the third highest weight in the Parts table.
o. Get the name of the Part having the second highest weight.
p. Get the name of the Parts in the colours (Red, Blue, Green) (using ‘IN’ and ‘OR’).
q. Update the weight of the least weight ‘Nut’ with the same weight of least weight ‘Bolt’.
r. Delete the Supplier not supplying any products.
s. Get the name of the Supplier supplying all the Parts.
t. Get the names of the suppliers the products supplying by supplier ‘Harry’
u. Get the Pname and total qty of Parts supplied by each Supplier.
w. Add a new field ‘State’ inside Supplier Table.
x. Drop the foreign key constraint from Supplier Parts Table.
y. Add a constraint inside Parts Table that Pno must start with letter ‘P’.
z. Drop the Table Supplier.

15CSA183  FUNDAMENTALS OF WEB TECHNOLOGY LAB.  0 0 3 1

1. Create a personal Blog. Add personal information.
2. Create a simple web page, which reveals the personal information of yours.
3. Design a web page with an interface for creating an e-mail Id.
4. Develop a web site for a University, which offers different UG and PG Courses.
   (Hint: Using Frames, Framesets, Images Menus and Hyperlinks)
5. Create a web page with advanced layouts and positioning with CSS and HTML.
6. Design a website with different methods of embedding CSS in a web page.
7. Create a static web page which displays your personal details. (Hint: CSS3 and HTML5)
8. Create a web page through which the user can enter his / her details to become an authenticated user of that page.
9. Create a web site for a Computer Hardware shop. (Hint: CSS3 and HTML5)
10. Create a web site for Amrita School of Arts and Sciences. (Hint: CSS3 and HTML5)

15CSA184 INFORMATION TECHNOLOGY BASICS LAB. 0 1 3 2

PC assembly using Simulation tools
Office Automation Tools: Word processors, spreadsheet, presentations
Internet applications (eg: Google Docs, Google Forms etc.)

15CSA188 ADVANCED C LAB. 0 0 3 1

1. Program to find the length of a given string with and without using string function
2. Program to copy source string into destination string with and without using string function
3. Program to compare two given strings with and without using string function
4. Program to concatenate two strings with and without using string function
5. Program to reverse a given string with and without using string function
6. Program to convert a given string to lowercase with and without using string function
7. Program to convert a given string to uppercase with and without using string function
8. Program to search for a substring in a given string with and without using string function
9. Program that counts the number of lines, words, and characters in its input
10. Program to convert the characters in a string from lowercase to uppercase and vice versa
11. Program to find whether a given string is palindrome or not
12. Program to find whether a given number is prime or not using function
13. Program to find \(x^n\) where \(x\) is real and \(n\) is integer using function
14. Program to find factorial of a given number using recursion
15. Program to find the sum of \(n\) natural numbers using recursion
16. Program to find \(n\)th Fibonacci number using recursion
17. Program to generate Fibonacci series using recursion
18. Program to compute \(x^n\) where \(x\) is real and \(n\) is integer using recursion
19. Program to calculate GCD of two integers using recursion
20. Program to print a line of text in reverse order using recursion
21. Program to find the employees who is getting salary between Rs 10000 to 20000 using structures
22. Program to find the student record whose age is between 18 to 25
23. Program to find the employee record who is working in a research department
24. Program to find the employee records having the same name
25. Program for matching the names of countries with their corresponding capitals using structures
26. Program that creates a structure for a product which includes product number, product name and cost.

15CSA189 ADVANCED DBMS LAB. 0 0 3 1

1. Create a program to print the squares of a number at To Limit.
2. Using reverse for Loop Finds the Reverse of a string.
3. Consider the following tables:

<table>
<thead>
<tr>
<th>FIELD NAME</th>
<th>TYPE</th>
<th>CONSTRAINT</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCNO</td>
<td>VARCHAR2(5)</td>
<td>PRIMARY KEY</td>
</tr>
<tr>
<td>NAME</td>
<td>VARCHAR2(30)</td>
<td></td>
</tr>
<tr>
<td>BALANCE</td>
<td>NUMBER(10,2)</td>
<td></td>
</tr>
</tbody>
</table>

B A C

SYLLABI

2015 admissions onwards
Create a PL/SQL to insert into Transaction Table. No transactions are possible on Sundays. While inserting Accno check it exists or not. Update the Master Table according to the Type of Transaction. A balance of Rs.1000 should be always maintained. Tno must be automatically generated. Tdate is Sysdate. (Use exceptions in your program)

4. Create a program to print the details of first five highest paid employees from the Emp Table.

5. Count the number of employees in each department in the Employee Table. If the number of employees is more than two put those employees in a separate table maintained for that Dept. (Use parameterized cursor).

6. Create a program to split Emp Table into two. After splitting merge the Splitted tables inside a third table.

7. Create a function to find the factorial of a number (using recursive function)

8. Create a function to find the Fibonacci Series (using recursive function)

9. Create a function to check whether a table exists in your User Area.

10. Consider the Inventory Tables Item Master and Sales. Create a procedure to delete the items having no sales.

11. Create a Library Information System using PL/SQL.

12. Create a package having two procedures, one to check whether the inputted number is Positive or Negative, other to check whether the inputted date is greater than or less than Sysdate.

13. Create a trigger to insert into RET_EMP when a record is deleted from EMP.

14. Create a trigger to prevent insertions on Product Table on Sundays

15. Create a trigger to update the stock of an item when a sale is made for the item.

16. Using dynamic SQL create a Table at Run Time.

17. Create a procedure to drop a Table passed as parameter.

18. Create a procedure for the automatic generation of primary key

19. Create user defined type person having attributes Prno, Name, Dob and Member Function Derive Age to calculate age. Define a column Person_Det of type person.

20. Create a PL/SQL to insert into object tables.

21. Create a V array ‘Hobby’ of array size 5 and define Column Hobbies in Emp_Table of type hobby. Generate an OID for above created object types.

Objectives: This course presents an in-depth discussion of the most important networking protocols comprising the TCP/IP protocol suite. Students will be able to understand state of the art in network protocols, architectures, and applications.

Unit 1

Unit 2
Physical Layer: transmission media - Analog Transmission - Digital transmission - Data Link Layer Design Issues - Services provided to the Network Layer - Framing - Design methods - Error Control - Flow Control - Error Detection – Parity – Checksum
SYLLABI

UNIT 1


UNIT 2


UNIT 3

Principles of Network Applications - Web and HTTP - Electronic mail – DNS - DNS Name space – Resource Records – Name Servers – FTP.

TEXTBOOK:
Computer Networks (Fifth Edition) – Andrew S. Tanenbaum (Prentice Hall of India)
REFERENCES:

15CSA202 DATA STRUCTURES 3 0 0 3

Objectives: This course is intended to introduce abstract concepts and shows how those concepts are useful in problem solving, and then shows how the abstractions can be made concrete by using a programming language. Equal emphasis is placed on both the abstract and the concrete versions of a concept.

UNIT 1

Information and meaning – Binary and Decimal Integers - Real numbers – Character Strings – Abstract Data Types – ADT for varying length character strings. Elementary Data Structures – Arrays – The arrays as an ADT – Using One Dimensional Arrays - implementing one dimensional arrays – Arrays as Parameters – Two Dimensional Arrays - Multidimensional Arrays.

UNIT 2

The Stack – Definition – Primitive operations – Stack as an abstract Data Type – Stack in C++ using Templates. Example: Infix, Postfix and Prefix Basic definitions and examples – Evaluating a Postfix Expression – Converting an Expression from infix to postfix.


UNIT 3

Queues and lists – The queue and its Sequential Representation – The Queue as an Abstract Data Type – Insert operation – Priority Queue.

UNIT 4

Linked lists – Inserting and Removing nodes from a list – Linked list implementation of Stack – getnode and freenode operations – Linked implementation of Queues – Linked List as a Data Structure – Nodes.


UNIT 5


TEXTBOOK:
REFERENCE:

15CSA203 JAVA PROGRAMMING 3 0 0 3

Objectives: The main objective of this course is to understand the basic concepts and techniques which form the object oriented programming paradigm using Java Language.
SYLLABI

**Unit 1**
Introduction and Features of Java - Byte Code, Multithreading, Program Translation, JVM.

**Unit 2**
Program Structure, Data types, Java Statements, Type casting in Java programs - Types of Operators.

**Unit 3**
Decision Making statements, Looping statements - Arrays, Strings, Vectors, Wrapper classes - Class, methods, Inheritance, Visibility control, Final Classes, methods and Variables.

**Unit 4**
Interfaces - Interfaces in Java Library - Packages - System Packages, User defined packages - Multithreading - Threads, Runnable Interface, Thread Priorities - Exception Handling - try, catch, throw, throws, finally.

**Unit 5**

**TEXTBOOK:**

**REFERENCE:**

**15CSA204 OPERATING SYSTEM 3 0 0 3**

**Objectives:** Fundamental concepts and algorithms will be covered along with the practical aspects that pertain to the most popular operating systems such as Unix/Linux and Windows, and some instructional operating systems will be studied as well.

**Unit 1**
Introduction to Operating Systems: Mainframe systems - Desktop systems - Multiprocessor systems - Distributed systems - Clustered systems - Real-time systems - Handheld systems.


Unit 2

**SYLLABI**

**Unit 3**
CPU Scheduling: Basic concepts - Scheduling criteria - Scheduling Algorithms - First Come First served Scheduling, Shortest job First Scheduling, Round Robin Scheduling, Multilevel Queue Scheduling, Multilevel Feedback Queue Scheduling.

**Unit 4**

**Unit 5**

**TEXTBOOK:**

**REFERENCES:**

**15CSA211 ADVANCED JAVA PROGRAMMING 3 0 0 3**

(Prerequisite: 15CSA203 Java Programming)

**Objectives:** The main objective of the course is to enable students to understand the concepts underlying technologies in JAVA Enterprise edition with Swings and multithreading, configuring Apache tomcat server, Java beans and Enterprise Java Beans.

**Unit 1**
Networking: Classes to be covered Socket, ServerSocket, IPAddress, URL connections – Swing controls – JDBC - Writing JDBC applications using select, insert, delete, update.

**Unit 2**
Unit 3

Unit 4
Package Handling HTTP Request and Response (GET / POST Request), Using Cookies, Session Tracking, Exception Handling.

Unit 5
Introduction to Beans and Bean Development Kit (BDK). Advantages of Java Beans (Bean concepts - Events in bean box - Bean customization - Persistence – Application) Using the Java Beans API Session beans - Entity beans - Programming and deploying enterprise Java Beans.

TEXTBOOKS:

15CSA212 INTRODUCTION TO NETWORK SECURITY 2002
Objectives: This course covers the fundamentals of network security and covers topics such as active and passive attacks on networks, encryption, symmetric and asymmetric key systems, authentication using certification authorities, and access control using passwords and firewalls.

Unit 1

Unit 2

Unit 3
Need of cryptography – introduction to symmetric and public key crypto systems.

Unit 4
Non malicious program errors - Viruses and malicious code - Targeted malicious code - Controls against program threats and controls.
SYLLABI

B C A 2015 admissions onwards

Unit 1
Introduction to .NET framework: Managed Code and the CLR - Intermediate Language, Metadata and JIT Compilation - Automatic Memory Management.

Unit 2

Unit 3

Unit 4
Various features of IDE, Different type of applications. Metadata – Interoperability.

Unit 5
Assemblies - The Framework Class Library: .NET objects.

TEXTBOOK:
Robert Powel, Richard Weeks, C# and the .NET Framework, Techmedia

15CSA215  SOFTWARE ENGINEERING  3 0 0 3

Objectives: Software Engineering presents a broad perspective on software systems engineering, concentrating on widely used techniques for developing large-scale software systems. This course covers a wide spectrum of software processes from initial requirements elicitation through design and development to system evolution.

Unit 1

Unit 2
Software requirements specification - System modeling - Software prototyping - Developing simple formal specification - error specification - model based specification - object oriented design.

Unit 3
Design process considerations - Transform analysis - design heuristics – Design optimization - Data structure versus data flow techniques - Jackson system development - Warnier – orr diagrams - Data structures system development.

Unit 4
Real Time system - data flow oriented design method - programming function

reliability - software reuse – CASE - software development environments. Software quality assurance - quality metrics - software testing - path testing - control structure testing - black box testing - integration - validation and system testing.

Unit 5
Software maintenance - reverse engineering and reengineering – Information System Auditing.

TEXTBOOK:

REFERENCE:

15CSA216  WEB PROGRAMMING  3 0 0 3
(Prerequisite: 15CSA103 Fundamentals of Web Technology)

Objectives: This course allows the students to create web sites with client side scripting and dynamic content that interacts with databases. Also discuss major tools, techniques, and methods of dynamic web application development.

Unit 1
Scripting Basics - Introduction to JavaScript - Creating Simple JavaScript - using and Storing Values - Strings and Arrays.

Unit 2

Unit 3
PHP basics, string processing & regular expressions, Components of strings, Form processing and Business Logic, Creating sessions, Using Cookies, dynamic contents.

Unit 4
Introduction to MySql, Creating connection with MySql, Connecting to database, Insert, Update, delete records from database using PHP interface.

Unit 5
1. Write and test a Boolean function that determines whether a given positive integer is prime.

2. Write function prototypes for the following:
   (i) a function which receives an int and a float and returns a double.
   (ii) a function that receives an int pointer and float reference and returns an int pointer
   (iii) a function which doesn’t receive anything and doesn’t return anything.

3. Write and test a function that reverse the digits of a positive integer (for eg: reverse (5026) would return 6205).

4. Write and test a program that develops a matrix class which can handle integer matrices of different dimensions. Within matrix class overload operators to carry out the
   (i) addition
   (ii) multiplication and
   (iii) mcomparation of two matrices.

5. Write a program that prints Pascal’s triangle of binomial coefficient like this

```
   1
   1 1
   1 2 1
   1 3 3 1
   1 4 6 4 1
```

6. Write and test a function that transposes a square matrix.

7. Write and test a recursive function that prints all the permutations of the first n characters of a string.

8. Write and test a recursive function that returns the power $x^n$

9. Write a program to implement a stack of strings (illustrate the operations push(), pop(), size(), empty() and top()).

10. Write a program to show the linked implementation of the Stack class.

11. Write a program to covert infix to postfix.

12. Write a program to implement Towers of Hanoi using Stack.

13. Write a program to implement a queue by adding the functions such as
    (i) Determine the size
    (ii) input queue

14. Write a program to implement Bubble Sort.

15. Write a program to implement Quick Sort.

16. Write a program to implement Heap Sort.

17. Write a program to implement Binary Search.

18. Write a program to search a circular linked list with a header node.

19. Write a program to implement Bubble Sort.

20. Write a program to implement Quick Sort.

21. Write a program to implement Heap Sort.

22. Write a program to implement Radix Sort.

23. Write a program to implement Binary Search.

24. Write a program to implement Binary Search Tree.
b. To accept a number and find whether the number is Prime or not
11. Write a Java program to create a Student class with the following attributes:
   Enrolment No., Name, Mark of sub1, Mark of sub2, mark of sub3, Total Marks.
   Total of the three marks must be calculated only when the student passes in all
   three subjects. The pass mark for each subject is 50. If a candidate fails in any
   one of the subjects his total mark must be declared as zero. Using this condition
   write a constructor for this class. Write separate functions for accepting and
   displaying student details. In the main method create an array of three student
   objects and display the details.
12. In a college first year class are having the following attributes
   Name of the class (BCA, BCom, MHA), Name of the staff
   No of the students in the class, Array of students in the class
   Define a class called first year with above attributes and define a suitable
   constructor. Also write a method called best Student() which process a first
   year object and return the student with the highest total mark. In the main
   method define a first year object and find the best student of this class
13. Write a Java program to define a class called employee with the name and date
    of appointment. Create ten employee objects as an array and sort them as per
    their date of appointment. i.e., print them as per their seniority.
14. Create a package ‘student.fulltime.BCA’ in your current working directory
   a. Create a default class student in the above package with the following
      attributes: Name, age, sex.
   b. Have methods for storing as well as displaying
15. Write a program to demonstrate a division by zero exception
16. Write a program to create an user defined exception say Pay Out Of Bounds.
17. Write a small program to catch Negative Array Size Exception. This exception
    is caused when the array is initialized to negative values.
18. Write a program to handle Null Pointer Exception and use the “finally” method
    to display a message to the user.
19. Write a program which create and displays a message on the window
20. Write a program to draw several shapes in the created window
21. Write a program to create an applet and draw grid lines
22. Write a Java program which create a frame with two buttons father and
    mother. When we click the father button the name of the father, his age and
    designation must appear. When we click mother similar details of mother also appear.
23. Create a frame which displays your personal details with respect to a button click
24. Create a simple applet which reveals the personal information of yours.
25. Write a program to move different shapes according to the arrow key pressed.
26. Write a java Program to create a window when we press
    M or m the window displays Good Morning
    A or a the window displays Good After Noon
    E or e the window displays Good Evening
    N or n the window displays Good Night
27. Demonstrate the various mouse handling events using suitable example.
9. Create a web site for a Computer Hardware shop.
10. Create a web site for Amrita School of Arts and Sciences.
11. Create a web page that shows different methods of embedding JavaScript.
12. Create a web page with rollover menus. Rollover menus should be created using JavaScript.
13. Create a simple calculator, which can perform the basic arithmetic operations.
14. Validate the registration form with the following criteria:
   15. Name and Age should be Mandatory Fields.
   16. Password and Re-enter Password fields should contain same value.
   17. Name field should accept only character values.
18. Create a student registration form using PHP and store data in database.

15CSA287 ADVANCED JAVA PROGRAMMING LAB. 0 0 3 1

1. Program to demonstrate Swing components.
2. Program to implement Address Book using Swing components.
3. Program to demonstrate loading of file in a Swing Component.
4. Multithreading program, one of the threads print a ....z and other thread print 1....26.
   5. Example: 1a2b3c..... 26z.
5. Multithreading program to schedule two jobs.
7. Server Socket which receives data from a java client program.
8. Program to fetch a particular Website tags when an URL is specified.
9. Implement stack, queue, hashmap, hashtable, enumeration, ArrayList.
10. Create a table from a java program.
11. Update a table from a java program.
12. Load a table data in Swing components.
13. Delete a record from a table, drop table from a java file.
15. Configure Apache Tomcat and write a hello world jsp page.
16. Configure Apache Tomcat server to deploy Servlets.
17. Exceptional handling in a JSP page.
18. Create a login page and authenticate a user in a JSP page using database.
19. Write a program to implement a simple servlet which writes a Welcome HTML page in the web browser.
20. A servlet should receive a parameter from JSP page and process it.
21. Servlet program to implement parameter handling.
22. Servlet program to handle GET and POST request.
23. A website hit counter data which has to be saved in a cookie.
24. Implement a Java Beans to set and get values.
25. Program to illustrate the procedure of handling session and print a Hello world using Java Bean.

15CSA301 FUNDAMENTALS OF CRYPTOGRAPHY 3 0 0 3

Objectives: The main objective of this course is to introduce the working of various cryptographic methods and how to apply this knowledge to real-world applications.

Unit 1
   Classical encryption techniques substitution ciphers and transposition ciphers, cryptanalysis, steganography, Stream and block ciphers - Modern Block Ciphers: Block ciphers principles, Shannon's theory of confusion and diffusion.

Unit 2
   Data encryption standard (DES), Strength of DES, Idea of differential cryptanalysis, block cipher modes of operations, Principals of public key crypto systems, RSA algorithm, security of RSA.

Unit 3
   Message Authentication Codes: Authentication requirements, authentication functions, message authentication code, hash functions, birthday attacks, security of hash functions.

Unit 4

Unit 5
   Key Management and distribution: Symmetric key distribution, Diffie-Hellman Key Exchange, Public key distribution, X.509 Certificates.

TEXTBOOK:

REFERENCE:
   Dr T R Padmanabhan N Harini, “Cryptography And Security Paperback”, Wiley India
15CSA302  C# PROGRAMMING  3 0 0 3

Objectives: Upon the completion of this course you will be able to: Understand object-oriented programming concepts and apply them in C# programs. Create C++ console applications, Create C++ Windows Forms applications, understand the Microsoft .NET platform. Utilize .NET components in your C++ programs.

Unit 1
C++ Fundamentals: Basic classes, declarations, conditionals, loops, arrays, strings, enumerations, structures.

Unit 2
OOP in C++: Encapsulation, inheritance, polymorphism. Exceptions and Object Lifetime: exceptions and the garbage collector. Interfaces, generics and collections - Callback Interfaces, Delegates, and Events.

Unit 3
Advanced C++ Type Construction: Indexers, operator overload, conversions - Windows Forms and WPF: Basic windows programming: forms, component class, control class, control events, menus, status bars, tool bars, interacting with the registry.

Unit 4
Drawing in Windows (GDI+): Paint sessions, the Graphics class, coordinate systems, color, fonts, hit testing.

Unit 5
Input, Output, and Serialization: System.IO, Directory and File Types, StreamReader and StreamWriter, working with binary data, configuring objects for serialization.

TEXTBOOK:
Latest version or two of Andrew Troelsen's C# text from Apress (Pro C# 5.0 and the .NET Framework 4.5)

15CSA303  MOBILE TECHNOLOGIES AND APPLICATION DEVELOPMENT  2 0 3 3

Objectives: The purpose of this course is to provide an introduction to modern mobile and wireless communication systems. It also provides a comprehensive introduction to the design and implementation of Android applications for handheld systems, such as smart phones and tablets.

Unit 1
GSM – Mobile services, system architecture, Radio interface, protocols, Localization and calling, Handover, security - 27–31 GPRS, HSCDC.

UNIT 2
Wireless LAN: IEEE 802.11, system architecture - IEEE-802.11

Unit 3
Protocol architecture, physical layers, medium access control layers, MAC management 802.11b, 802.11 a, Hiper LAN.

Unit 4
Bluetooth, Adhoc network, sensor network - Mobile IP, DHCP.

Unit 5

LAB:
Setting up your Android Development Environment
Working with screen configurations and multiple screen sizes
Working with the all-important Activity Class and its lifecycle - being able implement intents and permissions
Running multiple activities with the Fragment Class
Creating user interfaces to make your apps run smoothly for your users
Notifying users about important events

TEXTBOOKS:
1. Mobile Communications by Jochen Schiller, Pearson Education 2nd Edition
2. Wireless communications & Networks by William stallings.
5. Android Programming: Pushing the Limits, Wiley By Erik Hellman
6. Android Application Development Black Book, Dreamtech Press, Pradeep Kothari, KLSI

15CSA304  OBJECT-ORIENTED ANALYSIS AND DESIGN  2 0 0 2

Objectives: This course teaches proven real world techniques to meet the biggest challenge in the software development community – building quality systems which fulfill your requirements, and delivering them on time. The focus of the course is to give you the practical skills that are most critical in building well designed software systems.

Unit 1
SYLLABI

B C A

2015 admissions onwards

Unit 2
Attributes: Object state and properties - Object Behavior and Methods - Object Respond to Messages - Encapsulation and Information Hiding - Class Hierarchy - Classes and Object - Object Oriented Systems Development Lifecycle.

Unit 3

Unit 4

Unit 5

TEXTBOOK:

REFERENCES:
1. James Rumbaugh Michael Blaha – Object Oriented Modeling and Design PHI
2. E Balaguruswamy – Object Oriented Technology - Tata Mc Graw Hill

15CSA311 COMPUTER GRAPHICS 3 0 0 3

Objectives: The primary objective of this course is to give the basic principles of 2D and 3D computer graphics, to study the elementary mathematical techniques that allow us to position objects in three dimensional spaces and techniques necessary to produce basic 2D/3D dimensional illustrations.

Unit 1

Unit 2

SYLLABI

B C A

2015 admissions onwards

Unit 3

Unit 4
Two Dimensional Geometric Transformations; Translation, Rotation, Scaling, Reflection, Shear; Two Dimensional Viewing: Cohen Sutherland Line Clipping Three Dimensional Geometric Transformations; Translation, Rotation, Scaling, Reflection, Shear; Three Dimensional Viewing: Projections, Parallel Projections, Perspective Projections, View Volumes and General Projection Transformations.

Unit 5

TEXTBOOKS:

15CSA331 ARTIFICIAL INTELLIGENCE 3 0 0 3

Unit 1


Unit 2
**SYLLABI**

**B C A**

2015 admissions onwards

**Unit 3**


Statistical Reasoning – Probability and Baye’s Theorem – Bayesian Networks – Fuzzy Logic.

**Unit 4**

Game Playing - The Minimax Search Procedure – Adding Alpha-Beta Cutoffs.

Understanding – What is Understanding? What makes Understanding hard?

**Unit 5**


**TEXTBOOKS:**

**REFERENCES:**
2. Introduction to Artificial Intelligence – Eugene Charnaik, Drew McDermott (Pearson Education Asia)

**15CSA332 ARCHITECTURE AND DEPLOYMENT OF SECURE AND SCALABLE WAN**

**Unit 1**

Introduction to Scaling Networks, Implementing a Network Design, LAN Redundancy, Spanning Tree Concepts and protocols.

**Unit 2**


**Unit 3**


**Unit 4**

PPP Operation and Configuration, HDLC protocol, Troubleshoot WAN Connectivity.

**Frame Relay concepts and Configurations, NAT Operation & Configuration, Troubleshooting NAT**

**Unit 5**

Tele working, Broadband Solutions, Configuring xDSL Connectivity, Securing Site-to-Site Connectivity, VPNs, Site-to-Site GRE Tunnels, IPsec, Monitoring the Network – Syslog, SNMP, Netflow, Network Troubleshooting with a Systematic Approach.

**TEXTBOOKS:**
1. Youlu Zheng and Shakil Akhtar, "Networks for Computer Scientists and Engineers".

**REFERENCES:**

**15CSA333 INTRODUCTION TO BIOINFORMATICS**

**Unit 1**

Introduction to Genes and Proteins, The Organization of DNA and RNA, The Organization of Proteins, Genes, In Tones, Exons, Secondary Structure, Tripplet Coding, Protein Sequences, Genome Sequences, ORFs.

Hashes Data Structures and Algorithms for Biology, The Genetic Code, Concatenating DNA Fragments, Transcription: DNA to RNA, Calculating the Reverse Complement. Translating DNA into Proteins, Reading DNA from Files in FASTA Format, Reading Frames.

**Unit 2**

Introduction to Sequence Analysis, Sequence Analysis of Biological Data, Finding Motifs, Tools for Sequence Analysis: BLAST, FASTA, GenBank, PDB, Reading Proteins in Files.

Multiple Alignment Tools and its Applications, Introduction to Phylogenetics Tree Analysis, Genomic Analysis for DNA sequence, Genomic Analysis for Proteins Sequence.

Restriction Maps and Regular Expressions, Regular Expressions Restriction Maps and Restriction Enzymes.

**Unit 3**

Introduction to ASN1 and NCBI Data model: Why Data model specialized is required for Biological Sequences, Different Data Types supported by ASN1 and how they are used for storage of different types of information, Reading of NCBI data using freely available NCBI tool box.
SYLLABI

B C A

2015 admissions onwards

Unit 4

Unit 5
Searching Scientific information using Search Engines: Google, PUBMED, NCBI EMBL, GENBANK, Entrez, Unigene, PDB, SwissProt, and TrEMBL, Retrieval of data.

TEXTBOOKS:

REFERENCES:
1. Arthur M Lesk, Introduction to Bioinformatics, Oxford University
2. James Tisdall, Beginning Perl for Bioinformatics, O'Reilly and Associates.
3. Learning Perl 3rd Edition

SYLLABI

B C A

2015 admissions onwards

Unit 5
Clustering: Overview of Clustering – Types of Data in Cluster Analysis – Major Clustering Methods.

TEXTBOOKS/ REFERENCES:
1. Jiawei Han, Micheline Kamber and Jian Pei, “Data mining concepts and Techniques”, Third Edition, Elsevier Publisher, 2006.

15CSA335 INTRODUCTION TO DISTRIBUTED COMPUTING 3 0 0 3

Objectives: Client Server Computing Model defines the way successful organizations will use technology during the next decade. As a result knowledge of client server architecture has become an essential part of computer science. The main objective is to provide the basic concepts of client server computing and the new technologies involved in it.

Unit 1

Unit 2

Unit 3

Unit 4
SYLLABI

B C A 2015 admissions onwards


Unit 5

TEXTBOOK:

REFERENCES:
1. Alex Berson: Client Server Architecture

15CSA336 EMBEDDED SYSTEMS 3 0 0 3

Unit 1

Unit 2

Unit 3

Unit 4

Unit 5

TEXTBOOKS:
2. David E. Simon – An Embedded Software Primer- Pearson Education Asia – 1999

REFERENCES:
1. Caroline Yao & Quing Li – Real Time Concepts for Embedded Systems
2. Kirk Zureil - C Programming for Embedded Systems

15CSA337 ENTERPRISE RESOURCE PLANNING MANAGEMENT 3 0 0 3

Unit 1
Introduction to ERP

Business Engineering and ERP

Unit 2
Business Modelling for ERP
Building the Business Model.

ERP Implementation

Unit 3
ERP and the Competitive Advantage
ERP and the Competitive Strategy.

The ERP Domain
Unit 4
Marketing of ERP
Market Dynamics and Competitive Strategy.

Sample Case Studies

Unit 5
Client Server and ERP Architecture
http://ebuild.imtindia.com/erp_software_architecture.html

Open Technology
Background of Open Technology – Introduction – Proprietary v/s Open source – Need for Open Source Solutions – Open Source ERP.
http://elearning.nic.in/mdp/2-open-technology/opentechnology-mdp.pdf

Commercial ERP
Commercial ERP – Open Source ERP v/s Commercial ERP.

TEXTBOOK:

15CSA338 KNOWLEDGE MANAGEMENT 3 0 0 3

Unit 1

Unit 2

Unit 3

Unit 4
Knowledge Management Principles – Knowledge Management at work in Organization.

SYLLABI

Unit 5
Technology Foundations – The Internet and Internet Services – Web Components and Communications.

TEXTBOOKS:
Web Warehousing and Knowledge Management: Mattison 1999, Tata McGraw-Hill

REFERENCE:
Knowledge Management: Ganesh Natarajan, President & CEO Aptech

15CSA339 LAN SWITCHING AND ADVANCED ROUTING 3 0 0 3

Unit 1

Unit 2
Basic Switching Concepts and Configuration, Switch Security: Management and Implementation, VLANs.

Unit 3
Routing Concepts & operations, Configuration of a Router, Media Access Control, Inter-VLAN Routing, Layer 3 Switching, Static Routing Implementation, Configure Static and Default Routes, CIDR and VLSM.

Unit 4

Unit 5
Access Control Lists and operations, Configuring and Troubleshooting Standard & extended IPv4 ACLs, IPv6 ACLs, DHCPv4 (IPv4) DHCPv6 (IPv6).

TEXTBOOKS:

REFERENCES:
1. Introduction to Networks - Course Booklet “Cisco Press
2. Routing and Switching Essentials – Course Booklet”, Cisco Press
15CSA340  MICROPROCESSOR SYSTEM  

Unit 1  

Unit 2  

Unit 3  

Unit 4  

Unit 5  

TEXTBOOK:  

REFERENCE BOOKS:  
3. The 8086/88 family – John Uffenbeck – PHI

15CSA341  MULTIMEDIA AND GRAPHICS  

Unit 1  

TEXTBOOK:  

REFERENCES:  

15CSA342  PROJECT MANAGEMENT AND TECHNICAL DOCUMENTATION  

Unit 1  
Introduction – What is a project? - Software Project versus other types of project - Activities covered by Software Project Management - The project as a system - What is management - Problem with Software projects - Management Control – Stakeholders - Requirement Specification - Information and Control in Organizations - Introduction to Step Wise Project Planning - Select Project - Identify Project scope and objectives, Infrastructure - Analyze project characteristics - Identify project products and activities - Estimate effort for each activity - Allocate resources – Review/ publicize plan.

Unit 2  

Unit 3  
Activity Planning – Introduction - The objectives of activity planning - When to plan - Project schedules - Projects and activities - Network planning model - Formulating a network model - The forward pass - The backward pass - Identifying the critical paths.
Unit 4

Unit 5
Writing task oriented information - Elements of procedure - Introducing the procedure - Breaking down a task into steps - Displaying information from your computer screen - Mac Screen shots - Windows Screen shots.

TEXTBOOK:

REFERENCE:
Alan S. Pringle; Technical Writing 101: A Real World Guide To planning and Writing Technical Documentation, Amazon Books

15CSA343 SOCIAL AND PROFESSIONAL ISSUES 3 0 0 3 IN COMPUTING

Unit 1
Social Context: Introduction to the social implications of computing, Social implications of networked communication, Growth of, Control of, and access to the Internet, Gender – Related issues, Cultural issues, International Issues, Accessibility Issues (e.g. underrepresentation of minorities, Women and disabled in the computing profession), Public policy issues (e.g. electronic voting).

Unit 2
Analytical Tools: Making and evaluating ethical arguments, Identifying and evaluating ethical choices, Understanding the social context of design, Identifying assumptions and values.

Professional Ethics: Community values and the laws by which we live, The nature of professionalism (Including care, attention and discipline, fiduciary responsibility, and mentoring).

Keeping up-to-date as a professional (in terms of knowledge, tools, skills, legal and professional framework as well as the ability to self-assess and computer fluency), Various forms of professional credentialing and the advantages and disadvantages, The role of the professional in public policy, Maintaining awareness of consequences, Ethical dissent and whistle-blowing.

Codes of ethics, conduct, and practice (IEEE, ACM, SE, AITP, and so forth), Dealing with harassment and discrimination, “Acceptable use” policies for computing in the work place.

Healthy Computing environment (ergonomics)

Unit 3
Risks: Historical examples of software risks (such as the Therac-25 case), Implications of software complexity, Risk assessment and Risk Management; Risk removal, risk reduction and risk control.


Unit 4

Privacy and Civil Liberties: Ethical and legal basis for privacy protection, Ethical and legal framework for freedom of information, Privacy implications of database systems (e.g. Data gathering, storage and sharing, massive data collecting, computer surveillance systems)

Technological strategies for privacy protection, Freedom of expression in cyberspace, International and intercultural implications.

Unit 5

TEXTBOOK:
Ethics for Information Age, 3rd Edition, Michael J. Quinn, Pearson/Addison Wesley, 2009

15CSA344 SOFT COMPUTING 3 0 0 3

Unit 1
Unit 2
FUZZY sets, properties, Membership functions Fuzzy operations, Applications.

Unit 3
Classification and Regression Trees - Data Clustering Algorithms - Rule based Structure identification.

Unit 4
Neuro-Fuzzy Systems.

Unit 5

TEXTBOOK/ REFERENCES:

15CSA345 SOFTWARE QUALITY ASSURANCE AND TESTING 3 0 0 3

Unit 1

Unit 2
Software Reliability: Reliability Measures, Reliability models, Verification & Validation, Verification & Validation Planning, Software inspections, automated static Analysis, Clean room Software Development.

Unit 3

Unit 4

Unit 5
Black Box & White Box Testing: (Test Case Design Techniques), Functional Testing (Black Box), Equivalence partitioning, BVA, Cause-Effect graphing, Syntax testing (Concept & Test case generation only), Structural Testing (White Box), Coverage testing, Statement coverage, Branch & decision coverage, Path coverage, Domain Testing, Non functional testing techniques, Validation testing Activities, Low level testing, High level testing, Black box vs. White Box.

TEXTBOOKS/ REFERENCES:
Software Engineering, R. Pressmen – 6th Ed
Software Engineering, Sommerville
Introducing Software Testing, Louise Tamres
Effective Methods for software Testing, William Perry
Software Testing in Real World, Edward Kit
Software Testing Techniques, Boris Beizer
Software quality assurance: Principles and Practices by Nina Godbole, Narosa Publishing
ISO 9001 and software quality assurance, MGH, 1994
Unit 4

Unit 5

Network Administration Lab.

TEXTBOOKS:
1. Red Hat Linux - System Administration

REFERENCE:

15CSA381 C# PROGRAMMING LAB.
0 0 2 1
1. Create an Animation using Timer Control
2. Create a Windows calculator
3. Create a Menu driven Notepad application
4. Create a Web browser with all menu options
5. Create a menu driven application to accept the details of employees, with fields
6. EmpID, Name, Address, Department, Joining Date, and to display them. Give option for edition and deletion of employees and there must be option to navigate through the records. Give required validations.
7. Create a menu driven application for a super stores. Design two forms – Product Master and Purchase. Product master should have fields Product No., Name, Dealer Name, Expiry Date, Min reorder level, Stock. Purchase can be made for as many products u want and display the total amount. Give required validations.
8. Each module written should be tested validated and working on test cases. The students are required to submit the program, the report and the working in a disk.
9. Create a menu driven application for School Management System using connected approach frame a form to accept, edit, delete and search data. Give option to display details in given criteria:
   i. Students of a given class with a given grade.
   ii. Students who are interested in a given hobby.
10. Create a Web site using ASP.NET for a student community. Provide provision for registering the student details

12. Rewrite the above site in XML web service. Provide different client programs for the same

15CSA385 COMPUTER GRAPHICS LAB.
0 0 2 1
1. Write a program for 2D line drawing as Raster Graphics Display.
2. Write a program for circle drawing as Raster Graphics Display.
3. Write a program to draw an ellipse using Mid Point Algorithm.
4. Write a program to draw a circle using Midpoint algorithm. Modify the same for drawing an arc and sector.
5. Write a program to rotate a point about origin.
6. Write a program to rotate a triangle about origin.
7. Write a program to scale the triangle.
8. Write a program to translate a triangle.
9. Write a program to reflect a triangle.
10. Write a program for polygon filling as Raster Graphics Display
11. Write a program for line clipping.
12. Write a program for polygon clipping.
13. Write a program for displaying 3D objects as 2D display using perspective transformation.
14. Write a program for rotation of a 3D object about arbitrary axis.
15. Write a program for Hidden surface removal from a 3D object.

15CSA390 LIVE-IN-LAB.
2 cr
This initiative is to provide opportunities for students to get involved in coming up with solutions for societal problems. The students shall visit villages or rural sites during the vacations (after second semester or fourth semester) and if they identify a worthwhile project, they shall register for a 3-credit Live-in-Lab project, in the fifth semester. The objectives and projected outcome of the project should be reviewed and approved by the Dept. Chairperson and a faculty assigned as the project guide. On completion of the project, the student shall submit a detailed project report. The report shall be evaluated and the students shall appear for a viva-voce test on the project.

15CSA391 MINOR PROJECT
3 cr
To expose the student to the industry-standard project practices, under time and deliverable constraints, applying the knowledge acquired through various courses done in the programme.

15CSA397 COMPREHENSIVE TECHNICAL VIVA-VOCE
2 cr
The viva may be done based on every course covered till the sixth semester. The
objective of this is to enable the students to attend placements and be better performers in their future.

**15CSA399 PROJECT 6 cr**

To allow students to develop their own ideas and get experienced in industrial and research projects. It provides an opportunity in solving a real life problem by applying the knowledge gained through various courses of study and an exposure on different phases of software/system development life cycle.

**15CUL101 CULTURAL EDUCATION I 2002**

Unit 1
Introduction to Indian Culture - Introduction to Amma’s life and Teachings - Symbols of Indian Culture.

Unit 2
Science and Technology in Ancient India - Education in Ancient India - Goals of Life – Purusharthas - Introduction to Vedanta and Bhagavad Gita.

Unit 3
Introduction to Yoga - Nature and Indian Culture - Values from Indian History - Life and work of Great Seers of India.

**TEXTBOOKS:**
1. The Glory of India (in-house publication)
2. The Mother of Sweet Bliss, (Amma’s Life & Teachings)

**15CUL111 CULTURAL EDUCATION II 2002**

Unit 1
1. Relevance of Sri Rama and Sri Krishna in this Scientific Age
2. Lessons from the Epics of India
3. Ramayana & Mahabharata

Unit 2
4. Who is a Wise Man?
5. A Ruler’s Dharma
6. The Story of King Shibi

Unit 3
7. Introduction to the Bhagavad Gita
8. Bhagavad Gita – Action without Desire

**15ENG101 COMMUNICATIVE ENGLISH 2023**

Objectives: To help the student to obtain ability to communicate in English; to impart an aesthetic sense and enhance creativity.

Unit 1
Parts of Speech, Tenses, Prepositions, Determiners - Agreement (Subject – Verb, Pronoun - Antecedent), Phrasal Verbs, Modifiers, Linkers/ Discourse Markers, Question Tags.

Unit 2
Paragraph writing – Cohesion - Development: definition, comparison, classification, contrast, cause and effect - Essay writing: Descriptive and Narrative.

Unit 3
Letter Writing - Personal (congratulation, invitation, felicitation, gratitude, condolence etc.) Official (Principal/ Head of the department/ College authorities, Bank Manager, Editors of newspapers and magazines).

Unit 4

Unit 5

Short Stories: Katherine Mansfield’s A Cup of Tea – Kishori Charan Das’s Death of an Indian,
Poems: Maya Angelou’s I Know Why the Caged Bird Sings - Sri Aurobindo’s The Tiger and the Deer

REFERENCES:
5. Murphy, Raymond, Murphy’s English Grammar, CUP, 2004
7. Seely, John, Writing and Speaking, OUP, 1998

15ENGL121 PROFESSIONAL COMMUNICATION 1 0 2 2

Objectives: To convey and document information in a formal environment; to acquire the skill of self projection in professional circles; to inculcate critical thinking and to improve aesthetic sense.

Unit 1

Unit 2
Instruction, Suggestion & Recommendation - Graphical Interpretation: Extracting data from charts and graphs - Essay writing: Analytical and Argumentative.

Unit 3
Circulars, Memos – Business Letters - e-mails.

Unit 4

Unit 5
Listening and Reading Practice - Book Review.

REFERENCES:
1. Felix Eskey Tech Talk, University of Michigan, 2005

15ENV300 ENVIRONMENTAL SCIENCE AND SUSTAINABILITY 3 0 0 3

Unit 1
State of Environment and Unsustainability, Need for Sustainable Development, Traditional conservation systems in India, People in Environment, Need for an attitudinal change and ethics, Need for Environmental Education, Overview of International Treaties and Conventions, Overview of Legal and Regulatory Frameworks.

Environment: Abiotic and biotic factors, Segments of the Environment, Biogeochemical Cycles, Ecosystems (associations, community adaptations, ecological succession, Food webs, Food chain, ecological pyramids), Types of Ecosystems – Terrestrial ecosystems, Ecosystem Services, Economic value of ecosystem services, Threats to ecosystems and conservation strategies.

Biodiversity: Species, Genetic & Ecosystem Diversity, Origin of life and significance of biodiversity, Value of Biodiversity, Biodiversity at Global, National and Local Levels, India as a Mega-Diversity Nation (Hotspots) & Protected Area Network. Community Biodiversity Registers. Threats to Biodiversity, Red Data book, Rare, Endangered and Endemic Species of India. Conservation of Biodiversity, People’s action.

Impacts, causes, effects, control measures, international, legal and regulatory frameworks of: Climate Change, Ozone depletion, Air pollution, Water pollution, Noise pollution, Soil/ land degradation/ pollution

Unit 2
Linear vs. cyclical resource management systems, need for systems thinking and design of cyclical systems, circular economy, industrial ecology, green technology. Specifically apply these concepts to: Water Resources, Energy Resources, Food Resources, Land & Forests, Waste management.

Discuss the interrelation of environmental issues with social issues such as: Population, Illiteracy, Poverty, Gender equality, Class discrimination, Social impacts of development on the poor and tribal communities, Conservation movements: people’s movements and activism, Indigenous knowledge systems and traditions of conservation.

Unit 3
Global and national state of housing and shelter, Urbanization, Effects of unplanned development case studies, Impacts of the building and road construction industry on the environment, Eco-homes/ Green buildings, Sustainable communities, Sustainable Cities.

Ethical issues related to resource consumption, Intergenerational ethics, Need for investigation and resolution of the root cause of unsustainability, Traditional value systems of India, Significance of holistic value-based education for true sustainability.

**TEXTBOOKS/ REFERENCES:**

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**SYLLABI**

**15HIN101**  
**HINDI I**  
**OBJECTIVES:** To teach Hindi for effective communication in different spheres of life: Social context, Education, governance, Media, Business, Profession and Mass communication.

**UNIT 1**  
Introduction to Hindi Language - National Language, Official Language, link Language etc. Introduction to Hindi language, Devanagari script and Hindi alphabet.

Shabda Bhed, Roopanthar ki Drishti se - Bhasha – Paribhasha aur Bhed - Sangya - Paribhasha Aur Bhed - Sangya ke Roopanthar - kriya.

**UNIT 2**  
Common errors and error corrections in Parts of Speech with emphasis on use of pronouns, Adjective and verb in different tenses – Special usage of adverbs, changing voice and conjuctions in sentences, gender & number - General vocabulary for conversations in given context – understanding proper pronunciation – Conversations, Interviews, Short speeches.

**UNIT 3**  
Poems – Kabir Ist 8 Dohas, Surdas 1st 1 Pada; Tulsidas 1st 1 Pada; Meera 1st 1 Pada.

**UNIT 4**  

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**SYLLABI**  

**15KAN101**  
**KANNADA I**  
**OBJECTIVES:** To enable the students to acquire basic skills in functional language; to develop independent reading skills and reading for appreciating literary works; to analyse language in context to gain an understanding of vocabulary, spelling, punctuation and speech.

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**SYLLABI**  

**15KAN101**  
**KANNADA I**  
**OBJECTIVES:** To enable the students to acquire basic skills in functional language; to develop independent reading skills and reading for appreciating literary works; to analyse language in context to gain an understanding of vocabulary, spelling, punctuation and speech.

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**SYLLABI**  

**15HIN111**  
**HINDI II**  
**OBJECTIVES:** Appreciation and assimilation of Hindi Literature both drisya & shravya using the best specimens provided as anthology.

**UNIT 1**  

**UNIT 2**  
Communicative Hindi - Moukhik Abhivyakthi.

**UNIT 3**  
Audio-Visual – Media in Hindi – Movies like Tare Zameen par, Paa, Black etc., appreciation and evaluation. News reading and presentations in Radio and TV channels in Hindi.

**UNIT 4**  
Gadya Manjusha – Budhap, Kheesa, Sadachar ka Thavis.

**UNIT 5**  

**TEXTBOOKS:**
Kavya Tarang: Dr. Niranjan, Jawahar Pusthakalay, Mathura.
Gadya Manjusha: Editor: Govind, Jawahar Pusthakalay, Mathura
SYLLABI

Unit 1
Adalitha Kannada: bhashe, swaroopa, belavangayya kiruparichaya
Paaribhaashika padagalu
Vocabulary Building

Unit 2
Prabhandha – Vyaagha Geethe - A. N. Murthy Rao
Prabhandha – Baredidi...baredidi, Baduku mugiyuvudilla allige... - Nemi Chandra
Paragraph writing – Development: comparison, definition, cause & effect
Essay – Descriptive & Narrative

Unit 3
Mochi – Bharateepriya
Mosarina Mangamma – Maasti Venkatesh Iyengar
Kamalaaparada Hotelnalli – Panje Mangesh Rao
Kaakik – B. M. Shree
Geleyanobbanige bareda Kaagada – Dr. G. S. Shivarudrappa
Moodala Mane – Da. Ra. Bendre
Swathanrtyada Hanate – K. S. Nissar Ahmed

Unit 4
Letter Writing - Personal: Congratulation, thanks giving, invitation, condolence

Unit 5
Reading Comprehension; nudigattu, gaadegalu
Speaking Skills: Prepared speech, pick and speak

REFERENCES:
1. H. S. Krishna Swami Iyangar – Adalitha Kannada – Chetana Publication, Mysuru
2. A. N. Murthy Rao – Aleyuva Mana – Kuvempu Kannada Adyayana Samste
3. Nemi Chandra – Badhuku Badalisabahu – Navakarnataka Publication
4. Sanna Kathegalu - Prasaranga, Mysuru University, Mysuru
5. B. M. Shree – Kannada Bavauta – Kannada Sahitya Parishanatu
6. K. S. Nissar Ahmed – 75 Bhaavageetegalu – Sapna Book House (P) Ltd.
7. Dr. G. S. Shivarudrappa – Samagra Kavya – Kamadhenu Pustaka Bhavana

SYLLABI

Unit 1
Official Correspondence: Adhikrutha patra, prakatane, manavi patra, vanijya patra

Unit 2
Nanna Hanate - Dr. G. S. Shivarudrappa
Ella Marethiruvaga. - K. S. Nissar Ahmed
Saviraru Nadigalu – S Siddalingayya

Unit 3

Unit 4
Sarva Sollegala turtu Maha Samelana - Beechi
Swarthakkaagi Tyaga - Beechi

Unit 5
Essay writing: Argumentative & Analytical
Precis writing

REFERENCES:
1. H. S. Krishnaswami Iyangar – Adalitha Kannada – Chetana Publication, Mysuru
2. Dr. G. S. Shivarudrappa – Samagra Kavya. - Kamadhenu Pustaka Bhavana
4. K. S. Nissar Ahmed – 75 Bhaavageetegalu – Sapna book house
5. Dr. Da. Ra. Bendre – Saayo Aata – Shri Maata Publication

15KAN111

KANNADA II

Objectives: To enable the students to acquire basic skills in functional language; to develop independent reading skills and reading for appreciating literary works; to develop functional and creative skills in language; to enable the students to plan, draft, edit & present a piece of writing.

SYLLABI

Unit 1

Unit 2

OBJECTIVES:
15MAL101

MALAYALAM I

1 0 2  2

OBJECTIVES:
To appreciate the aesthetics & cultural implications; to enhance creative thinking in mother-tongue; to learn our culture & values; to equip students read & write correct Malayalam; to correct the mistakes in pronunciation; to create awareness that good language is the sign of complete personality.

Unit 1

Unit 2
SYLLABI  B C A  2015 admissions onwards

Unit 3
Short stories from period 1/2/3, Poovanpazham - Vaikaom Muhammed Basheer - Literary & Cultural figures of Kerala and about their literary contributions.

Unit 4
Literary Criticism: Ithihasa studies - Bharatha Paryadanam - Vyasante Chiri - Kuttipravakshana - Outline of literary Criticism in Malayalam Literature - Introduction to Kutti Krishna Mararu & his outlook towards literature & life.

Unit 5
Error-free Malayalam: 1. Language; 2. Clarity of expression; 3. Punctuation.

Thettillatha Malayalam – Writing - a. Expansion of ideas; b. Precis Writing; c. Essay Writing; d. Letter writing; e. Radio Speech; f. Script/ Feature/ Script Writing; g. News Editing; h. Advertising; i. Editing; j. Editorial Writing; k. Critical appreciation of literary works (Any one or two as an assignment).

REFERENCES:

SYLLABI  B C A  2015 admissions onwards

Unit 3

Unit 4
Part of an autobiography/ travelogue: Kannerum Kinavum, V. T. Bhattathirippadu - Socio-cultural literature - historical importance.

Unit 5
Error-free Malayalam: 1. Language; 2. Clarity of expression; 3. Punctuation.

Thettillatha Malayalam – Writing - a. Expansion of ideas; b. Precis Writing; c. Essay Writing; d. Letter writing; e. Radio Speech; f. Script/ Feature/ Script Writing; g. News Editing; h. Advertising; i. Editing; j. Editorial Writing; k. Critical appreciation of literary works (Any one or two as an assignment).

REFERENCES:

15MAT103  MATHEMATICAL FOUNDATIONS  2 1 0 3

Unit 1

Unit 2

Unit 3

Unit 4
**SYLLABI**

**B.C.A. 2015 Admissions onwards**

**Unit 5**


**TEXTBOOK:**

P. R. Vittal - *Business Mathematics and Statistics*, Margham Publications, Chennai,

S. P. Gupta – *Statistical Methods*, Sultan Chand and Sons, Educational Publishers, New Delhi

**15MAT115 STATISTICAL AND NUMERICAL METHODS** 3 1 0 4

Statistical Methods

Unit 1
Correlation - karl pearson’s and Spearman’s rank correlation, Regression - regression equations, regression coefficients,

Unit 2
Interpolation - Newton’s forward & backward method - Lagrange’s Method, Curve fitting - fitting a straight line.

Unit 3
Permutations – combinations – Probability - addition theorem, multiplication theorem, independent events, conditional probability, Baye’s theorem, Probability distribution - Binomial, Poisson, normal.

Numerical methods

Unit 4

Unit 5

**TEXTBOOK:**

H. S. Hall and S. R. Knight - *Higher Algebra*, AITBS Publishers India


**REFERENCES**


**15OEL231 - 2xx OPEN ELECTIVES 3 0 0 3**

Open electives syllabi - see at the end of the booklet.

**15SAN101 SANSKRITI 1 0 2 2**

Objectives: To familiarize students with Sanskrit language and literature; to enable them to read and understand Sanskrit verses and sentences; to help them acquire expertise for self-study of Sanskrit texts and communication in Sanskrit; to help the students imbibe values of life and Indian culture as propounded in scriptures.

Unit 1
Introduction to Sanskrit language, Devanagari script - Vowels and consonants, pronunciation, classification of consonants, conjunct consonants, words – nouns and verbs, cases – introduction, numbers, Pronouns, communicating time in Sanskrit.

Practical classes in spoken Sanskrit.
## Unit 2
Verbs - Singular, Dual and plural – First person, Second person, Third person.
Tenses – Past, Present and Future – Atmanepadi and Parasmaipadi - karthariprayoga.

## Unit 3
Words for communication, slokas, moral stories, subhashithas, riddles (from the books prescribed).

## Unit 4
Selected slokas from Valmiki Ramayana, Kalidasa’s works and Bhagavad Gita.
Ramayana – chapter VIII - verse 5; Mahabharata - chapter 174, verse 16; Bhagavad Gita – chapter IV - verse 8; Kalidasa’s Sakuntalam - Act IV – verse 4.

## Unit 5
Translation of simple sentences from Sanskrit to English and vice-versa.

### ESSENTIAL READINGS:
1. Praveshaha; Publisher: Samskrita bharati, Aksharam, 8th cross, 2nd phase, girinagar, Bangalore-560 085
2. Sanskrit Reader I, II and III, R. S. Vadhyar and Sons, Kalpathi, Palakkad
3. Prakriya Bhashyam written and published by Fr. John Kunnappally
4. Sanskrit Primer by Edward Delavan Perry, published by Ginn and Company Boston
5. Sabdamanjari, R. S. Vadyar and Sons, Kalpathi, Palakkad
6. Namalinganusasanam by Amarasimha published by Travancore Sanskrit series

### 15SAN111 SANSKRIT II 1 0 2 2

#### Objectives:
To familiarize students with Sanskrit language and literature; to enable them to read and understand Sanskrit verses and sentences; to help them acquire expertise for self-study of Sanskrit texts and communication in Sanskrit; to help the students imbibe values of life and Indian culture as propounded in scriptures.

#### Unit 1
Seven cases, indeclinables, sentence making with indeclinables, Saptha karakas.

#### Unit 2
Ktvatu Pratyaya, Upasargas, Ktvanta, Tumunnanta, Lyabanta.
Three Lakaras – brief introduction, Lot lakara.
Listening Skills: The importance of listening in communication and how to listen actively.

Prepositions and Articles: An experiential method of learning the uses of articles and prepositions in sentences is provided.

Problem solving; Number System; LCM & HCF; Divisibility Test; Surds and Indices; Logarithms; Ratio, Proportions and Variations; Partnership; Time speed and distance; work time problems;

Data Interpretation: Numerical Data Tables; Line Graphs; Bar Charts and Pie charts; Caselet Forms; Mix Diagrams; Geometrical Diagrams and other forms of Data Representation.

Logical Reasoning: Family Tree; Linear Arrangements; Circular and Complex Arrangement; Conditionalities and Grouping; Sequencing and Scheduling; Selections; Networks; Codes; Cubes; Venn Diagram in Logical Reasoning.

TEXTBOOKS:
4. The Hard Truth about Soft Skills, by Amazon Publication.

REFERENCES:
1. Quantitative Aptitude, by R S Aggarwal, S Chand Publ.
3. Data Interpretation, R S Aggarwal, S Chand Publ.
4. Nova GRE, KAPAL GRE, Barrons GRE books;
5. Quantitative Aptitude, The Institute of Chartered Accountants of India.
7. The BBC and British Council online resources
8. Owl Purdue University online teaching resources
9. www.thegrammarbook.com online teaching resources
10. www.englishpage.com online teaching resources and other useful websites.


TEXTBOOKS:
4. The Hard Truth about Soft Skills, by Amazon Publication.

REFERENCES:
1. Quantitative Aptitude, by R S Aggarwal, S Chand Publ.
5. The BBC and British Council online resources
6. Owl Purdue University online teaching resources
7. www.thegrammarbook.com online teaching resources
8. www.englishpage.com online teaching resources and other useful websites.

Team Work: Value of Team work in organisations, Definition of a Team, Why Team, Elements of leadership, Disadvantages of a team, Stages of Team formation. Group

Facing an Interview: Foundation in core subject, Industry Orientation/ Knowledge about the company, Professional Personality, Communication Skills, activities before interview, upon entering interview room, during the interview and at the end. Mock interviews.

Advanced Grammar: Topics like parallel construction, dangling modifiers, active and passive voices, etc.

Syllogisms, Critical reasoning: A course on verbal reasoning, Listening Comprehension advanced: An exercise on improving listening skills.

Reading Comprehension advanced: A course on how to approach advanced level of reading, comprehension passages. Exercises on competitive exam questions.

Specific Training: Solving campus recruitment papers, National level and state level competitive examination papers; Speed mathematics; Tackling aptitude problems asked in interview; Techniques to remember (In Mathematics), Lateral Thinking problems. Quick checking of answers techniques; Techniques on elimination of options, Estimating and predicting correct answer; Time management in aptitude tests; Test taking strategies.

TEXTBOOKS:
4. The Hard Truth about Soft Skills, by Amazon Publication.

REFERENCES:
1. Speed Mathematics, Secrets of Lightning Mental Calculations, by Bill Handley, Master Mind books;
2. The Trachtenberg Speed System of Basic Mathematics, Rupa & Co., Publishers;
5. Quick Arithmetics, by Ashish Agarwal, S Chand Publ.,
7. The BBC and British Council online resources
8. OwP Purdue University online teaching resources
9. www.thegrammarbook.com online teaching resources
10. www.englishpage.com online teaching resources and other useful websites.

TEXTBOOKS:

REFERENCES:
Speed Mathematics, Secrets of Lightning Mental Calculations, by Bill Handley, Master Mind books;
The Trachtenberg Speed System of Basic Mathematics, Rupa & Co., Publishers;
Vedic Mathematics, by Jagadguru Swami Sri Bharati Krsna Tirthayi Maharaja, Motilal Banarsidass Publ.,
Quick Arithmetics, by Ashish Agarwal, S Chand Publ.,
Quicker Maths, by M Tyra & K Kundan, BSC Publishing Co. Pvt. Ltd., Delhi;
The BBC and British Council online resources
OwP Purdue University online teaching resources
www.thegrammarbook.com online teaching resources
www.englishpage.com online teaching resources and other useful websites.

OBJECTIVES:
To introduce the students to different literature - Sangam literature, Epics, Bhakti literature and modern literature, to improve their ability to communicate with creative concepts, and also to introduce them to the usefulness of basic grammatical components in Tamil.

UNIT 1
Sangam literature: Kuruntokai; (2, 6, 8, 40 pāṭallikai) – puranāṇūṟu (74, 112, 184, 192 pāṭallikai) – tirukkural (iṟaimāṭṭi, amaiccu).

UNIT 2
Epic literature: ciḻappakaiṟam maturai kāṇṭam (valakkuraiṟkai ṭāyai tairaiṟu).

Syllabi
1. Ministers:“Sittai Tamilan”
   Essay: Ashta “ē tāḻta tamilakāmē”

UNIT 4
Tirunāṉga campentar – tirunāṉukkaracar – cunterar – māṇika vācakar – āṇṭal – tirunāṉar lucrāsikaiṟai ḍvār oḍṭalai oṭṭarapai ḍuṟṟaṟṟaṇai ṭoṭṟṟaṟṟai oṭṭikoḷai, mōṭikoḷai marum orṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟṟ帰り

UNIT 5
Tamil Grammar: Col vakaikal - vēṟṟumai urupukai - valliṟṟam mukimaiṟṟam mukkaiṟṟam - canti(puranci) - lakkaiṟṟṟṟṟṟṟṟṟṟṟราว.TODO
SYLLABI  B.C.A  2015 admissions onwards

1STAM111  TAMIL II  1022

Objectives: to learn the history of Tamil literature; to analyze different styles, language training, to strengthen the creativity in communication, Tamil basic grammar, Computer and its use in Tamil language.

Unit 1
The history of Tamil literature: Nettupürgap pāṭākai; kataikkal, pāḻamojjikal - cirukataikal tōṟamam valarciyum, cirilakkaiyikal; Kalinikkattup parāṇi (pōṟpāṭiyatu) - mukkōṭar pāḻu 35.
Kappiyikal: Cilappatikāram - manimēkalai nāṭaiyiyal āyvu māṟrum aimperum - āṁcuṟṟu kappiyikal toṭarpārça cēyikal.

Unit 2
tīnai ilakkiyamum nīṭyilakkiyamum - pēṭiṇṭiḷkānai akku nūlkal toṭarpārça pīpe cēyikal - tirukkuraj (appu, pasup, kalvi, cēkkam, nāṭpu, vāymai, kēḻvi, ceyngi, peniyaraiṭturakkaiṭai, vilippurarpu pēṇa atikāratiḻ uḷḷa cēyikal.

Aṟuṟṟilai, Ulaṅkai(li 1-5) - elai (1,3,6) - Cilurakai. Kōḻveṭtai cīttar pāṭākai (āṟurarā kalippu - 1,4,6,7,8), māṟrum akappē cīttar pāṭākai (1-5).

Unit 3
tamīḷ laikkānaḷam: Vaṅkkiya vakaṅkal - taṭįṅai pįraṇįṅai - ērkkurru ayaṭkuru.

Unit 4

Unit 5
tamīḷ maḷḷ āyvıl kaniṭṭi poṭainṭu - Karutu paṭimāṟram - vilampara mūḷḷamaippu - pāṭcchu - nāṭaṅkam poṭaippu - cirukatai, kēṭai, poṭiṇṭam poṭaippu.