

School of Computer Science
Bachelor of Science (Hons.) – Cyber Security
Syllabus for three/four years Honours Programme
with Multiple Entry and Exit Options

Sr. No.	Subject Code	Subject Name	Paper Type	Credit	
				Theory	Practical
Semester-1					
1	BSCCS-101	Introduction to Programming using C	Major (Core)	4	
2	BSCCS-102	Fundamental of Operating System and Security	Major (Core)	4	
3	BSCCS-103	Computer Fundamentals and Security	Minor	4	
4	BSCCS-104	Fundamental of Mathematics	Multi/Inter-disciplinary	4	
5	BSCCS-105	Communication Skills-I	AEC	2	
6	BSCCS-106	Software Lab Based on BSCCS-101,BSCCS-102	SEC/Internship		2
7	BSCCS-107	Environmental Studies-I	VAC/IKS	2	
				20	2
Semester-2					
1	BSCCS-201	Database Management System and Security	Major (Core)	4	
2	BSCCS-202	Data Structures	Major (Core)	4	
3	BSCCS-203	Object Oriented Programming using C++	Minor	4	
4	BSCCS-204	Introduction to Statistics	Multi/Inter-disciplinary	4	
5	BSCCS-205	Communication Skills-II	AEC	2	
6	BSCCS-206	Software Lab Based on BSCCS-201, BSCCS-202 and BSCCS-203	SEC/Internship		2
7	BSCCS-207	Environmental Studies-II	VAC/IKS	2	
				20	2
Semester-3					
1	BSCCS-301	Relational Database Management System and Security	Major (Core)	4	
2	BSCCS-302	Software Engineering	Major (Core)	4	
3	BSCCS-303	Data Communications and Networks	Major (Core)	4	
4	BSCCS-304	Principles of Cyber Security	Multi/Inter-disciplinary	4	
5	BSCCS-305	Privacy and Security in Social Media - I	AEC	2	
6	BSCCS-306	Software Lab Based on BSCCS-301	SEC/Internship		2
7	BSCCS-307	Yoga Science and Life Philosophy-I	VAC/IKS	2	
				20	2

Semester-4					
1	BSCCS-401	Object Oriented Programming using Java	Major (Core)	4	
2	BSCCS-402	Client Server Architecture and Interface	Major (Core)	4	
3	BSCCS-403	Digital Electronics	Major (Core)	4	
4	BSCCS-404	Introduction to Web Designing	Minor	4	
5	BSCCS-405	Privacy and Security in Social Media - II	AEC	2	
6	BSCCS-406	Software Lab Based on BSCCS-401 and BSCCS-404	SEC/Internship		2
7	BSCCS-407	Yoga Science and Life Philosophy-II	VAC/IKS	2	
				20	2
Semester-5					
1	BSCCS-501	Introduction to Python Programming	Major (Core)	4	
2	BSCCS-502	Computer Oriented Numerical Method	Major (Core)	4	
3	BSCCS-503	Introduction to Algorithms	Major (Core)	4	
4	BSCCS-504	Web Development Technology using Java	Minor	4	
5	BSCCS-505	Mobile Operating Systems and Security	Minor	4	
6	BSCCS-506	Practical Based on BSCCS-501, BSCCS-504 and BSCCS-505	SEC/Internship		2
				20	2
Semester-6					
1	BSCCS-601	Internet of Things and Security	Major (Core)	4	
2	BSCCS-602	Cloud Computing	Major (Core)	4	
3	BSCCS-603	Introduction to Block Chain	Major (Core)	4	
4	BSCCS-604	Windows System Security	Minor	4	
5	BSCCS-605	Data Warehousing and Data Mining	Minor	4	
6	BSCCS-606	Modern Indian Language	AEC	2	
7	BSCCS-607	Project Cum Internship	SEC/Internship		2
				22	2
Semester-7					
1	BSCCS-701	Open Source Technology	Major (Core)	4	
2	BSCCS-702	Digital / Computer Forensics	Major (Core)	4	
3	BSCCS-703	Cyber Security Techniques	Major (Core)	4	
4	BSCCS-704	Course based on SWAYAM-I	Minor	4	
5	BSCCS-705	Internship cum On-the-job Training	OJT		6
				16	6
Semester-8					
1	BSCCS-801	Big Data Analytics	Major (Core)	4	
2	BSCCS-802	Security Analysis and Reporting	Major (Core)	4	
3	BSCCS-803	Cloud Infrastructure Services and Security	Major (Core)	4	
4	BSCCS-804	Course based on SWAYAM-II	Minor	4	
5	BSCCS-805	Internship cum On-the-job Training	OJT		6
				16	6

Subject: BSCCS-101 Introduction to Programming using C

Block	Detail syllabus
Block-1	<ul style="list-style-type: none">• Information to C Language• Keyword• Variable and Constants• Data Type• Operators
Block-2	<ul style="list-style-type: none">• Output, Input• Control statement• Loop• Nested control• Nested Loop
Block-3	<ul style="list-style-type: none">• Array• String• Multidimensional Array• Functions
Block-4	<ul style="list-style-type: none">• Structure• Pointer• File Management

Subject: BSCCS-102 Fundamental of Operating System and Security

Block	Detail syllabus
Block-1	<ul style="list-style-type: none">• Introduction to Operating System• Operating System Structure
Block-2	<ul style="list-style-type: none">• Processes• Threads• Process Scheduling• Process Synchronization and Deadlocks
Block-3	<ul style="list-style-type: none">• Memory Management• Page Replacement Algorithms• File Systems Interface• File System Implementation• Mass Storage Structure• I/O Systems
Block-4	<ul style="list-style-type: none">• Protection• Security

Subject: BSCCS-103 Computer Fundamentals and Security

Block	Detail syllabus
Block-1	<ul style="list-style-type: none"> • Overview of computers, Operating Systems, and Applications. • Overview of Windows 10 Operating System, File System, and Snipping Tool.
Block-2	<ul style="list-style-type: none"> • Overview of Computer Networks, Internet, Browsers, and Cloud Computing. • Overview of Google Gmail, Contacts, Calendar, Google Drive, and OneDrive.
Block-3	<ul style="list-style-type: none"> • Overview of Computer Security and Key System Utilities (Defender, Disk Cleanup, Defrag, Task Manager & Backup).
Block-4	<ul style="list-style-type: none"> • Intro to Google Docs & OneDrive Word (Including File Format Converting). • Intro to Google Sheets and OneDrive Excel (Including File Format Converting). • Intro to Google Slides and OneDrive PowerPoint.

Subject: BSCCS-104 Fundamental of Mathematics

Block	Detail syllabus
Block-1	<ul style="list-style-type: none"> • Set Theory • Logic and Propositional Calculus • Functions and Relations
Block-2	<ul style="list-style-type: none"> • Calculus • Limits and Continuity • Differentiation & Integration
Block-3	<ul style="list-style-type: none"> • Algebra • Matrix Algebra • Linear Algebra
Block-4	<ul style="list-style-type: none"> • Graph Theory • Boolean and Tree

Subject: BSCCS-105 Communication Skills-I

Block	Detail syllabus
Block-1	The Seven Cs of Effective Communication: Completeness, Conciseness, Consideration, Concreteness, Clarity, Courtesy, Correctness Understanding Business Communication: Nature and Scope of Communication, Non-verbal Communication, Cross-cultural communication, Technology-enabled Business Communication
Block-2	Writing Business Messages and Documents: Business writing, Business

	Correspondence, Instructions Business Reports and Proposals, Career building and Resume writing. Developing Oral Communication Skills for Business: Effective Listening, Business Presentations and Public Speaking, Conversations, Interviews
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Subject: BSCCS-106 Software Lab Based on BSCCS-101, BSCCS-102

List of Practical:

1. Write a program to calculate the simple interest.
2. Write a program to find the area and perimeter of square and rectangle.
3. Write a program to find the area or circle.
4. Write a program to perform arithmetic operations.
5. Write a program to convert the temperature in Fahrenheit to Celsius.
6. Write a program to swap value of two variables.
7. Write a program to find maximum from two integer numbers.
8. Write a program to check whether the given number is positive, negative or zero.
9. Write a program to enter values of two variables from user and check whether they are equal or not.
10. Write a program to check whether the given number is even or odd.
11. Write a program to check given year is a leap year or not.
12. Write a program to find maximum from three numbers given by user.
13. Write a program to calculate gross salary and net salary of an employee. Gross salary = basic + DA + HRA and Net salary = Gross Salary – PF – Tax. Basic salary should be entered by the user and DA, HRA, PF and Tax will be calculated as 80%, 20%, 10%, 12% of basic.
14. Write a program to display grade (distinction, first, second, pass, fail) according to percentage of five subjects' marks entered by the user.
15. Write a program to perform bitwise operators.
16. Write a program that uses sizeof() operator.
17. Write a program to find the sum of first 10 natural numbers.
18. Write a program to find sum of first 100 odd and even numbers.
19. Write a program to find the sum of digits of a given number.
20. Write a program to generate Fibonacci series up to N numbers: 0 1 1 2 3 5 8 N
21. Write a program to find 1+3+5+7+....+N.
22. Write a program to check entered number is Armstrong or not.
23. Write a program to print prime numbers between 1 to 50.
24. Write a program to print following patterns up to N.

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1          1 2 3 4          1
2 3        1 2 3          2 2
4 5 6      1 2            3 3 3
7 8 9 10   1              4 4 4 4

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*          *          * * * *
* *        * *        * * *
* * *      * * *      * *
* * * *    * * * *    *

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A          *          C
B B        * *        CP
C C C      * * *      CPR
D D D D    * * * *    CPRO
           * * *      CPR

```

* * CP
* C

25. Write a program to read and print elements of one-dimensional array.
26. Write a program to find the sum of all elements of an array.
27. Write a program to count even and odd elements in an array.
28. Write a program to delete an element at desired position from an array.
29. Write a program to find maximum value from an array.
30. Write a program to sort elements of an array.
31. Write a program to sort an array in descending order.
32. Write a program to search an element from one-dimensional array.
33. Write a program to search an element from two-dimensional array.
34. Write a program to read and print elements of two-dimensional array.
35. Write a program to find the addition of two matrices of 3 x 3.
36. Write a program to find the multiplication of two matrices of 3 x 3.
37. Write a program to print transpose of a matrix.
38. Write a user defined function which prints your name 10 times.
39. Write a program to swap value of two variables using function.
40. Write a program to count number of words in the string.
41. Write a program to count number of vowels from a given string.
42. Write a program to copy one string to another without using strcpy().
43. Write a program to append two strings without strcat().
44. Write a program to find length of the given string without including string.h.
45. Write a program to convert lowercase string to uppercase string without including string.h.
46. Write a program to read name and marks of n number of students and store them in a file.
47. Write a program to create a structure student that prints information of five students.
48. Write a program to add two distances in feet and inches using structure.
49. Write a program to find the size of the union.
50. Write a program to show the basic declaration of a pointer.
51. Write a program to add two numbers using pointers.
52. Write a program to find the maximum number between two numbers using a pointer.
53. Write a program to store n elements in an array and print the elements using a pointer.
54. Write a program to find the largest element using Dynamic Memory Allocation.
55. Write a program to create and store information in a text file.
56. Write a program to read an existing file.
57. Write a program to find the content of a file and the number of lines in a text file.
58. Write a program to count the number of words and characters in a file.
59. Write a program to append multiple lines to the end of a text file.
60. Write a program to copy a file to another name.

List of OS Practical:

1. Implement basic shell commands.
2. Write a shell script to get the current date, time, username and current working directory.
3. Write a shell script that, given a filename as the argument will count vowels, blank spaces, characters, number of lines and symbols.
4. Create a shell script that checks if a file exists in the current directory.
5. Write a shell script that calculates the sum of integers from 1 to N using a loop.
6. Create a script that searches for a specific word in a file and counts its occurrences.
7. Write a shell script that calculates the total size of all files in a directory.
8. Write a Shell program to check the given number and its reverse are same.
9. Write a Shell program to check the given integer is prime or not.

10. Write a Shell program to Convert All Uppercase Letters in a String to Lowercase.

Subject: BSCCS-107 Environmental Studies-I

Block	Detail syllabus
Block-1	<ul style="list-style-type: none"> • Introduction to Environmental studies: Definition, scope and importance, Need for public awareness, Institutions in Environment, People in Environment. Natural resources: Renewable and Non-renewable resources. Natural resources and associated problems, Role of an individual in the conservation of natural resources, Concept of sustainability and sustainable development.
Block-2	<ul style="list-style-type: none"> • Biodiversity and its conservation: Introduction- definition, Types of diversity: genetic, species and ecosystem biodiversity. • Value of biodiversity: Consumptive use, productive use, social, ethical and aesthetic values. • Biodiversity at global, national and local levels. India as a mega diversity nation, Hot spots of biodiversity. • Threats to biodiversity: habitat loss, poaching of wildlife, man- wildlife conflicts. Endangered and endemic species of India. • Conservation of biodiversity: In- situ and Ex-situ conservation of biodiversity.
	<ul style="list-style-type: none"> • Ecosystems: Concept of ecosystem, Structure and function of ecosystem, Producers, consumers and decomposers. Energy flow in an ecosystem: food chain, food web and ecological • succession Case studies of the following ecosystems: • a) Forest ecosystem • b) Grassland ecosystem • c) Desert ecosystem • d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries).

BSCCS-201 Database Management System and Security

Block	Detail syllabus
Block-1	<ul style="list-style-type: none"> • Introduction to Database Systems • Database History • Data Modelling • Data Models
Block-2	<ul style="list-style-type: none"> • Relational Data Model • Entity Relationship Model • Integrity Rules and Constraints. • Relational Design and Redundancy • Functional Dependencies • Introduction to Data Normalization
Block-3	<ul style="list-style-type: none"> • Introduction to SQL • SQL – Data Manipulation Language

	<ul style="list-style-type: none"> • SQL – Join Statements • Database Development Process
Block-4	<ul style="list-style-type: none"> • Database Security • Introduction to Databases Security, Problems in Databases Security Controls Conclusions • Security Models - Introduction Access Matrix Model Take-Grant Model Acten Model PN Model Hartson and Hsiao's Model Fernandez's Model Bussolati and Martella's Model for Distributed databases

Subject: BSCCS-202 Data Structures

Block	Detail syllabus
Block-1	<ul style="list-style-type: none"> • Introduction to Data Structure • Algorithms
Block-2	<ul style="list-style-type: none"> • Linked Lists • Stack • Queue
Block-3	<ul style="list-style-type: none"> • Searching • Sorting
Block-4	<ul style="list-style-type: none"> • Trees • Binary Search Tree • B-Tree • Graph

Subject: BSCCS-203 Object Oriented Programming using C++

Block	Detail syllabus
Block-1	<ul style="list-style-type: none"> • Introduction to Object Oriented Programming • Elements of C++ Language • Operators and Manipulators • Decision and Control Structures
Block-2	<ul style="list-style-type: none"> • Array, Pointer and Structure • Functions • Introduction to Classes and Objects
Block-3	<ul style="list-style-type: none"> • Constructors and Destructors • Operator Overloading
Block-4	<ul style="list-style-type: none"> • Inheritance • Virtual Functions and Polymorphism • File Handling

Subject: BSCCS-204 Introduction to Statistics

Block	Detail syllabus
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Block-1	<ul style="list-style-type: none"> • Introduction and Analysis of Univariate data • Basic statistical concepts, qualitative and quantitative data, Classification of data, Construction of frequency distribution, stem and leaf display. • Graphical presentation of data -histograms and cumulative frequency curves. • Measure of central tendency—Arithmetic mean, median and mode—their properties • Partition values—quartiles, deciles and percentiles. • Measures of dispersion—Range, quartile deviation and standard deviation and their relative measures. • Skewness—concept and measures, Kurtosis—concept
Block-2	<ul style="list-style-type: none"> • Analysis of bivariate data • Correlation—definition, scatter plot, types of correlation, measures—Karl Pearson’s correlation coefficient and Spearman’s rank correlation coefficient. • Regression---Linear regression and interpretation
Block-3	<ul style="list-style-type: none"> • Probability • Basic terminology-random experiment, sample space, event, mutually exclusive events, equally likely events. • Definition of probability –Classical, empirical and axiomatic approaches. • Addition rule for two events, Independence of events, conditional probability, Multiplication rule for two events. • Bayes’ theorem and its applications.
Block-4	<ul style="list-style-type: none"> • Statistical Inference • Statistical hypothesis—null, alternative, simple and composite. • Types of errors, level of significance and power of a test. • Tests of significance—Test for normal mean and equality of means for large samples • Chi square test for independence of attributes and goodness of fit.

Subject: BSCCS-205 Communication Skills-II

Block	Detail syllabus
Block-1	Developing Oral Communication Skills for Business: Meetings and Conferences, Group Discussions and Team Presentations, Team Briefing, Understanding Specific Communication Needs: Communication across Functional Areas
Block-2	Understanding Specific Communication Needs: Corporate Communication, Persuasive Strategies in Business Communication, Ethics in Business Communication, Business Communication Aids Presentation Process: Planning the presentations, executing the presentations, Impressing the audience by performing, Planning stage: Brainstorming, mind maps / concept maps, executing stage: chunking theory, creating outlines, Use of templates. Adding graphics to your presentation: Visual communication, Impress stage: use of font, colour,

Subject: BSCCS-206 Software Lab Based on BSCCS-201, BSCCS-202 and BSCCS-203

Subject: BSCITRSE-206 Software Lab Based on BSCITRMA-201, BSCITRMA-202 and BSCITRMI-203 (DBMS, Data Structure, C++)

Practical List DBMS:

1. Database creation, Table creation.
 - Create a new database (Select an example of your own wish)
 - View all databases
 - Learn about data types of attributes and create a new table in the database with different data types
 - Use of alter command to add and drop attributes
 - Modify attribute name
 - Use of desc command to display information about a table
 - Rename a table
 - Create more tables for your database

2. Data insertion, update/modification/Delete and retrieval, Query implementation
 - Insert tuples in the table including null values in the tuple
 - Update values in the table
 - Delete tuples in the table
 - Query to view all tuples of the table
 - Run basic queries to view particular attributes of a table
 - Run basic queries to use basic comparison operators
 - Run basic queries to view find certain tuples of a table
 - Run queries using order by, limit operators

3. Enforcing integrity constraints (Domain, Key constraints (Primary/Foreign keys), NOT NULL, UNIQUE, DEFAULT, Check)
 - Create a table with appropriate primary key
 - Alter a table to add primary key
 - Drop a primary key
 - Add a foreign key while create a table
 - Alter table to add a foreign key
 - Drop a foreign key
 - Include constraints like null/not noll, unique, default, check
 - Drop a constraint

Practical List Data Structure:

1. Write a program to search an element in the array using linear search.
2. Write a program to search an element in the array using binary search.
3. Write a program to merge two sorted array into one.
4. Write a program to swap values of variables using call by value and call by reference.
5. Write a program to implement bubble sort.
6. Write a program to implement selection sort.
7. Write a program to implement insertion sort.
8. Write a program to implement stack using array.
9. Write a program to implement queue using array.
10. Write a program to implement singly linked list with all operations.

Practical List C++:

1. Write a program to declare Structure. Initialize and display contents of member variables.
2. Write a program to create a class called EMPLOYEE that contains following members: data members: Employee number, Employee name, Basic, DA, IT, Net Salary and print data members.
3. Write a program to illustrate the concepts of console I/O operations.
4. Write a program to use scope resolution operator.
5. Write a program to implement multilevel inheritance.
6. Write a program to copy data of an object to another object using copy constructor.
7. Write a program to illustrate the use of virtual functions in class.
8. Write a program to demonstrate inline function.
9. Write a program to demonstrate function overloading.
10. Write a program to demonstrate pure virtual function.

Subject: BSCCS-207 Environmental Studies-II

Block	Detail syllabus
Block-1	<ul style="list-style-type: none">• Environmental Pollution: Air pollution: definition, causes, effects and Control measures.• Water pollution: definition, causes, effects and control measures.• Soil pollution: Causes of soil degradation, effects and control measures.• Noise pollution: Causes, effects and control measures. Nuclear hazards.• Global warming: Depletion of ozone layer, green house effect.• Solid waste management: Causes, effects and control measures of urban and industrial wastes.

	<ul style="list-style-type: none"> Disaster management: Floods, Earthquakes, Cyclones, Landslides.
Block-2	<ul style="list-style-type: none"> Social issues and the Environment: Environmental movements: Chipko, Appiko, Silent valley, Bishnois of Rajasthan. Rain water harvesting, watershed management, Human right, Rights of animals. Reduce, Reuse and Recycle. Environment protection Act, Wildlife protection Act, Forest conservation Act, Public awareness, using an Environmental Calendar of Activities. -10hrs Human Population and the Environment: Population explosion: Family welfare programme, methods of sterilization, urbanization, environment and human health, infectious diseases, water-related diseases, risks due to chemicals in food, cancer. HIV/AIDS, Woman and child welfare.

Subject: BSCCS-301 Relational Database Management System and Security

Block	Detail syllabus
Block-1	<ul style="list-style-type: none"> Basic Concepts: data, database, database systems, Database management system: Introduction, Purpose and advantages of Database management system (over file systems). Architecture of DBMS: Architecture of DBMS, Various components of DBMS. Data models: Introduction, Data modeling and mapping. Tables (relations), rows (tuples), domains, columns (attributes), Database design process, Anomalies in a database.

Block-2	<ul style="list-style-type: none"> Functional Dependencies, Finding Candidate keys using Armstrong rules. Stages of Normalization: 1NF, 2NF, 3NF, BCNF ORACLE Server & Instances, Database Structure & Space Management, Memory & Process Structure, Schemas & Schema Objects, Client Server Architecture – Distributed Database Processing, Database Backup & Recovery, ORACLE Utility – Import , Export.
Block-3	<ul style="list-style-type: none"> Basic Data Types of ORACLE, Data Definition Language (DDL), Data Manipulation Language (DML), Transaction Processing Language (TPL), Data Constraints, Inbuilt Functions, queries, Sub queries, Join, Indexes, Views, Sequences, and Synonyms. ORACLE Database Object : Stored Procedures & Functions, Packages, Triggers, Users – Create & Delete User, Grant & Revoke Command. ORACLE Database Privileges & Roles: Privileges – System & Object Privileges, Assigning, Viewing, Revoking System & Object Privileges Roles – Create, Grant, View & Delete the Roles.
Block-4	<ul style="list-style-type: none"> Introduction, Advantages of PL/SQL and Generic PL/SQL Block. Cursor: Implicit & Explicit Cursor, Cursor For Loop, Parameterized Cursor. Locking Strategy: Implicit & Explicit Locking, Lock Table. Exception Handling: Predefine exceptions, Users define exceptions, Handling Raised exceptions.

Subject: BSCCS-302 Software Engineering

Block	Detail syllabus
Block-1	<ul style="list-style-type: none"> Definition of Software Engineering Need for Software Engineering Software Characteristics Software Qualities
Block-2	<ul style="list-style-type: none"> Definition of System Analysis, Requirement Analysis, System Analyst, Knowledge and Qualities of System Analyst, Role of a System Analyst Feasibility Study and Types, Fact Gathering, User Transaction Requirement, User Design Requirements, SRS
Block-3	<ul style="list-style-type: none"> System Development Methodologies Analysis and Design Tools
Block-4	<ul style="list-style-type: none"> Structured System Design Software Testing

Subject: BSCCS-303 Data Communications and Networks

Block	Detail syllabus
Block-1	<ul style="list-style-type: none"> Introduction to Networking, Components of Networking, Different Computing Models of Network Intranets and Internets Network Services, FileServices, File Transfer Services, Printing Services, Application Services.

	<ul style="list-style-type: none"> Fundamentals of communication theory
Block-2	<ul style="list-style-type: none"> Introduction to Standards, Standard Organization and the OSI rules and the Communication Process. The OSI reference Model IEEE802 family standard.
Block-3	<ul style="list-style-type: none"> Introduction to Transmission Media Cable Media Wireless Media TCP/IP
Block-4	<ul style="list-style-type: none"> Connectivity Devices Network architectures Topologies. Switching & Routing In Networks

Subject: BSCCS-304 Principles of Cyber Security

Block	Detail syllabus
Block-1	<ul style="list-style-type: none"> Cyber Security Essentials Attack Vectors, Threat, Risk and Vulnerability Advance Persistent Threat and Cyber Kill Chain Cyber Security Framework
Block-2	<ul style="list-style-type: none"> Firewall and Packet Filters Introduction to Windows and Linux Firewall Attacks on Wireless Networks
Block-3	<ul style="list-style-type: none"> Scanning For Web Vulnerabilities Tools and HTTP Utilities Application Inspection Tools Password Cracking and Brute-Force Tools Web Attack
Block-4	<ul style="list-style-type: none"> Cyber Crimes Internet crime and Act Intellectual Property in the Cyber world

Subject: BSCCS-305 Privacy and Security in Social Media - I

Block	Detail syllabus
Block-1	<ul style="list-style-type: none"> What is Online Social Networks, data collection from social networks, challenges, opportunities, and pitfalls in online social networks, APIs Collecting data from Online Social Media. Trust, credibility, and reputations in social systems
Block-2	<ul style="list-style-type: none"> Online social Media and Policing Information privacy disclosure, revelation and its effects in OSM and online social networks

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| | <ul style="list-style-type: none">• Phishing in OSM & Identifying fraudulent entities in online social networks |
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Subject: BSCCS-306 Software Lab Based on BSCCS-301

List of Practical:

Create a Supplier table and perform following queries:

1. Write sql query to display Supplier numbers and Supplier names whose name starts with 'R'
2. Write sql query to display the name of suppliers who supply Processors and whose city is Delhi.
3. Write sql query to display the names of suppliers who supply the same items as supplied by Ramesh.
4. Write sql query to increase the price of Keyboard by 200.
5. Write sql query to display supplier numbers, Supplier names and itemprice for suppliers in delhi in the ascending order of itemprice.
6. Write sql query to add a new column called CONTACTNO.
7. Write sql query to delete the record whose itemprice is the lowest of all the items supplied.
8. Create a view on the table which displays only supplier numbers and supplier names.
9. Write sql query to display the records in the descending order of itemprice for each itemsupplied.
10. Write sql query to display the records of suppliers who supply items other than Processor or Keyboard.

Create a Table for Library Information and perform following queries:

1. Write sql query to display the list of authors from TMH publications.
2. Write sql query to display the total cost of books purchased Publisher wise.
3. Write sql query to count the total number of books under Cengage publications.
4. Write sql query to rename the column Publisher as Publications.
5. Write a sql query to display the books in the ascending order of DatePurchased.
6. Write sql query to create an index on the fields BookName and Author.
7. Write sql query to display the books whose price is between 500 and 700
8. Write sql query to increase the price of all the books by 200 for publishers other than TMH or Cengage.
9. Write sql query to display the book details where author name contains the name Sharma.
10. Create a view to display the fields BookId and BookName where the Publisher is Himalaya.

Subject: BSCCS-307 Yoga Science and Life Philosophy-I

Block	Detail syllabus
Block-1	<ul style="list-style-type: none"> • Meaning & definitions of yoga, Importance, aim and objectives of yoga in modern life, Traditional & historical development of yoga • Components of Medieval Indian Thought; Jainism, Buddhism, Mohammad's and Christianity and Sikhism with special reference to yogic thoughts and nature of yoga in these
Block-2	<ul style="list-style-type: none"> • Brief introduction of six system of Indian Philosophy i.e. Nyaya Philosophy Philosophy, Vaisheshik Philosophy, Sankhya Philosophy • Philosophy of Yoga, Meaning, Definitions, objectives and Philosophy of Mimansa. Meaning, Definitions, objectives and Philosophy of Vedanta.

Subject: BSCCS-401 Object Oriented Programming using Java

Block	Detail syllabus
Block-1	<ul style="list-style-type: none"> • Introduction to Java, the Java Language Specification, API, JDK and IDE, Elementary Programming, Selection and Loops,
Block-2	<ul style="list-style-type: none"> • Mathematical Functions, Characters, and Strings, Methods and Arrays
Block-3	<ul style="list-style-type: none"> • Objects and Classes, Inheritance, Polymorphism, Abstract Classes and Interfaces, Exception Handling, Lists, Sets and Maps
Block-4	<ul style="list-style-type: none"> • Event-Driven Programming, Binary I/O, Sorting, Searching and Hashing Java Database Programming

Subject: BSCCS-402 Client Server Architecture and Interface

Block	Detail syllabus
Block-1	<ul style="list-style-type: none"> • Client Server Computing: Functions of client, server, middleware components • Advantages and limitations of client server computing • Three Tier Architecture: Overview of thin client, application server, web server • Distributed Database • Real Application Clusters • High Performance Database Computing • Data Warehousing and Data Mining
Block-2	<ul style="list-style-type: none"> • Architecture of Oracle Database and Oracle Instance • Physical and Logical Structures • Dedicated and Shared Server Configuration • Oracle Server Startup and Shutdown • Creating Database
Block-3	<ul style="list-style-type: none"> • SQL • PL/SQL Procedural Extension, • PL/SQL data types & Control Structures
Block-4	<ul style="list-style-type: none"> • Cursors, Stored Procedures & Functions • Database Triggers • Package Creation

	<ul style="list-style-type: none"> • Dynamic SQL • Collections & Objects
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Subject: BSCCS-403 Digital Electronics

Block	Detail syllabus
Block-1	<ul style="list-style-type: none"> • Boolean Algebra • Logic Gates • Simplification of Boolean Functions
Block-2	<ul style="list-style-type: none"> • Combinational Switching Circuits • Logic Families
Block-3	<ul style="list-style-type: none"> • Flip-flops • Shift Registers • Counters
Block-4	<ul style="list-style-type: none"> • Digital to Analog Converters • Analog to Digital Converters • Digital Memories

Subject: BSCCS-404 Introduction to Web Designing

Block	Detail syllabus
Block-1	<ul style="list-style-type: none"> • Fundamental of Internet, Intranet and Extranet • Internet Terminology • Web Server and Protocols • Recent Internet Technology Applications
Block-2	<ul style="list-style-type: none"> • HTML Tags
	<ul style="list-style-type: none"> • Designing HTML Table • Designing HTML Forms • Designing HTML Frames
Block-3	<ul style="list-style-type: none"> • Cascading Style Sheet • Attributes of Cascading Style Sheet • Effects of Cascading Style Sheet • Other Effects of Cascading Style Sheet
Block-4	<ul style="list-style-type: none"> • Introduction to JavaScript • Functions and Dialog of JavaScript • Event , Method and Properties of JavaScript • Built In Function

Subject: BSCCS-405 Privacy and Security in Social Media - II

Block	Detail syllabus
Block-1	<ul style="list-style-type: none"> • Controlled Information Sharing in Online Social Networks: Access Control Models, Access Control in Online Social Networks, Relationship-Based Access Control, Privacy Settings in Commercial Online Social Networks, Existing Access Control Approaches

Block-2	<ul style="list-style-type: none"> Identity Management in Online Social Networks: Identity Management, Digital Identity, Identity Management Models: From Identity 1.0 to Identity 2.0, Identity Management in Online Social Networks, Identity as Self-Presentation, Identity thefts, Open Security Issues in Online Social Networks
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Subject: BSCCS-406 Software Lab Based on BSCCS-401 and BSCCS-404

List of Core Java Practical:

1. Write a program that takes a number as input and prints its multiplication table upto 10.
2. Write a program to display the following pattern.

```
*****
****
***
**
*
```
3. Write a program to print the area and perimeter of a circle.
4. Write a class that demonstrates the use of constructor and destructor.
5. Write a program to demonstrate the implementation of abstract class.
6. Write a program to implement single level inheritance.
7. Write a program to implement method overriding.
8. Write a program to implement multiple inheritance.
9. Write a program to add two matrices and print the resultant matrix.
10. Write a program to implement thread life cycle.

List of HTML & Java Script Practical:

1. Write a code for html webpage which displays your name, college name, and semester.
2. Write a code for html webpage which redirects to Google page.
3. Write a code for html web page which displays your name in left, college name in right, and semester in center, your photo at bottom, your branch in red background color and text size - 50px.
4. Write a code for html webpage which displays table using <tr> and <td> tag.
5. Make a registration form in html web page which takes all the details of person.
6. Write a code for html webpage which displays a list.
7. Write a code for html web page which changes HTML Content. (using Javascript)
8. Write a code for html web page which changes HTML Attribute Values. (using Javascript)
9. Write a code for html web page which changes HTML Styles (CSS). (using Javascript)
10. Write a code for html web page which Hide and Show HTML Elements. (using Javascript)

Subject: BSCCS-407 Yoga Science and Life Philosophy-II

Block	Detail syllabus
Block-1	<ul style="list-style-type: none"> Kinds of Yoga:- Karma Yoga, Bhakti Yoga Jnana (Gyan) yoga & Ashtang Yoga.

	<p>Study of Yoga in:- Vedas, Upanishads & Gita</p> <ul style="list-style-type: none"> Relationship between physical education and yoga. Patanjali Yogasutra & Gita. Relationship of yoga and Vedanta philosophy. Nature of yog sadhna according to Vedanta
Block-2	<ul style="list-style-type: none"> Life sketch of following Yogis with importance incidents of their lives & contributions in the development of Yoga- Maharishi Patanjali, Guru Gorakhnath, Yogi Shyamacharan Lahidi, Swami Shivananda, Swami Vivekananda, Sri Aurobindo. Development of yoga in 19th and 20th century: Development of yoga centres and research as well academic institutes. govt. policy for yoga. Development of yoga after patanjali: Bhakti period, Vivekanada period up to 18th century-1900

Subject: BSCCS-501 Introduction to Python Programming

Block	Detail syllabus
Block-1	<ul style="list-style-type: none"> Introduction Variable, Expression and Statement Conditional Execution Functions
Block-2	<ul style="list-style-type: none"> Iteration String Files Lists
Block-3	<ul style="list-style-type: none"> Dictionaries Tupels Regular Expressions Networked Program
Block-4	<ul style="list-style-type: none"> Python and Web Service Object-Oriented Programming Using database and SQL Visualizing Data

Subject: BSCCS-502 Computer Oriented Numerical Method

Block	Detail syllabus
Block-1	<ul style="list-style-type: none"> Computer Arithmetic Solving Non-Linear Equations

Block-2	<ul style="list-style-type: none"> • Solving Simultaneous Linear Algebraic Equations • Interpolation
Block-3	<ul style="list-style-type: none"> • Least Squares Approximation of Function • Approximation of Functions
Block-4	<ul style="list-style-type: none"> • Differentiation • Integration • Numerical Solution of Differential Equations

Subject: BSCCS-503 Introduction to Algorithms

Block	Detail syllabus
Block-1	<ul style="list-style-type: none"> • Overview of algorithms • Time and Space Complexity • Growth of Functions
Block-2	<ul style="list-style-type: none"> • Divide and Conquer • Probabilistic Analysis • Randomized Algorithms
Block-3	<ul style="list-style-type: none"> • Dynamic Programming • Greedy Algorithm • Amortized Analysis
Block-4	<ul style="list-style-type: none"> • Elementary Graph Algorithms • Minimum Spanning Trees • Single-Source Shortest Paths • Maximum Flow

Subject: BSCCS-504 Web Development Technology using Java

Block	Detail syllabus
Block-1	<ul style="list-style-type: none"> • Network Basics and Socket overview, TCP/IP client sockets, URL, TCP/IP server sockets, Datagrams, java.net package Socket, ServerSocket, InetAddress, URL, URLConnection
Block-2	<ul style="list-style-type: none"> • The JDBC Connectivity Model, Database Programming: Connecting to the Database, Creating a SQL Query, Getting the Results, Updating Database Data, Error Checking and the SQLException Class, The SQLWarning Class, The Statement Interface, PreparedStatement, CallableStatement The ResultSet Interface, Updatable Result Sets, JDBC Types, Executing SQL Queries, ResultSetMetaData, Executing SQL • Updates, Transaction Management.

Block-3	<ul style="list-style-type: none"> Servlet Model: Overview of Servlet, Servlet Life Cycle, HTTP Methods Structure and Deployment descriptor ServletContext and ServletConfig interface, Attributes in Servlet, Request Dispatcher interface. The Filter API: Filter, FilterChain, Filter ConfigCookies and Session Management: Understanding state and session, Understanding Session Timeout and Session Tracking, URL Rewriting
Block-4	<ul style="list-style-type: none"> JSP Overview: The Problem with Servlets, Life Cycle of JSP Page, JSP Processing, JSP Application Design with MVC, Setting Up the JSP Environment

Subject: BSCCS-505 Mobile Operating Systems and Security

Block	Detail syllabus
Block-1	<ul style="list-style-type: none"> Generalize Operating System Functionality Of Generalize Operating System Operating System Structures Mobile Computing
Block-2	<ul style="list-style-type: none"> Mobile Devices Function Of Mobile Operating System Mobile Operating System Generalized Mobile Operating System Architecture and Comparison
Block-3	<ul style="list-style-type: none"> Basics of Android Operating System Internal Mechanism of Android OS ios Operating System Windows Phone Blackberry Symbain
Block-4	<ul style="list-style-type: none"> Security in Mobile Operating System Security principles of operating systems, virtual servers and cloud services, user access control, malware protection, patch management

Subject: BSCCS-506 Practical Based on BSCCS-501, BSCCS-504 and BSCCS-505

List of Python Practical:

1. Write a program to swap two numbers without taking a temporary variable.
2. Create a sequence of numbers using range datatype to display 1 to 30, with an increment of 2.
3. Write a program to find out and display the common and the non-common elements in the list using membership operators.
4. Write a program to find the sum of even numbers using command line arguments.
5. Write a program to search an element in the list using for loop.

6. Write a program to create one array from another array.
7. Write a program to understand various methods of array class mentioned: append, insert, remove, pop, index, tolist and count.
8. Write a python program that removes any repeated items from a list so that each item appears at most once.
9. Write a lambda/Anonymous function to find bigger number in two given numbers.
10. Create a program name "employee.py" and implement the functions DA, HRA, PF, and ITAX. Create another program that uses the function of employee module and calculates gross and net salaries of an employee.
11. Write a program to combine two List, perform repetition of lists and create cloning of lists.
12. Write a program to create nested list and display its elements.
13. Write a program to accept elements in the form of a tuple and display its minimum, maximum, sum and average.
14. Write a program to create a dictionary from the user and display the elements.
15. Write a program to convert the elements of two lists into key-value pairs of a dictionary.

List of Advanced Java Practical:

1. Write a Servlet to display "Hello World" on browser.
2. Write a Servlet to display all the headers available from request.
3. Write a Servlet which displays a message and also displays how many times the message has been displayed (how many times the page has been visited).
4. Assume that the information regarding the marks for all the subjects of a student in the last exam are available in a database, Develop a Servlet which takes the enrollment number of a student as a request parameter and displays the marksheet for the student.
5. Write a simple JSP page to display a simple message.
6. Write a JSP page, which uses the include directive to show its header and footer.
7. Develop an application to demonstrate how the client (browser) can remember the last time it visited a page and displays the duration of time since its last visit. (Hint: use Cookie)
8. Implement TCP Server for transferring files using Socket and ServerSocket.
9. Implement cookies to store firstname and lastname using Java server pages.
10. Implement the shopping cart for users for the online shopping. Apply the concept of session.
11. Implement student registration form with enrollment number, first name, last name, semester, contact number. Store the details in database. Also implement search, delete and modify facility for student records.
12. Write a Servlet program to print system date and time.
13. Design a web page that takes the Username from user and if it is a valid username prints "Welcome Username". Use JSF to implement.
14. Write Hibernate application to store customer records and retrieve the customer record including name, contact number, address.

15. Write an application to keep record and retrieve record of student. The record includes student id, enrollment number, semester, SPI. Use MVC architecture.

List of Mobile OS Practical:

1. Create "hello world" application to display "hello world" in the middle of the screen in the emulator as well as android phone.
2. Create an android app to display various android lifecycle phases.
3. Create an android app with first activity having edittext and send button. On click of send button, use explicit intent to send the text within edittext to a second activity and displayed within textview.
4. Create a calculator app that performs addition, subtraction, division and multiplication operation on numbers.
5. Create a spinner application with strings taken from resource directory res/values/strings.xml and on changing the spinner value, image will change. Image is saved in the drawable directory.
6. Create an app that uses radiobutton group which calculates discount on shopping bill amount. Use edittext to enter bill amount and select one of three radio buttons to determine a discount for 10, 15, or 20 percent. The discount is calculated upon selection of one of the buttons and displayed in a textview control.
7. Create an app that uses radiobutton group of all courses in your college. On selecting one of the buttons, the Instructor of that course should be displayed in a textview control at the bottom of the screen.
8. Create an application that uses checkbox for construction of a shopping list so the user can check off items as they are picked up. The checked items should be displayed in a textview control.
9. Create a login application to verify username and password. Create a registration page to register a user. On successful login, "welcome user" should appear as a pop-up message.
10. Create a login application to verify username and password. On successful login, redirect to another activity that has a textview to display "welcome user" with logout button. On click of logout button, a dialog should appear with ok and cancel buttons. On click of OK button, go back to the login activity and on click of cancel button, stay on the same activity.
11. Create a menu with 5 options. The selected option should appear in the textbox.
12. Use linear layout to create a simple application that will take the contents of a predefined textview and use a button to cause the application to take that text, convert it to uppercase, and display it in an edittext field.
13. Create an application that uses tablelayout with textview, edittext and buttons. Also, create ur own styles.xml file within res/values directory, to style text of textview control.
14. Create an application to perform the operations of create, insert, delete, view and update, using sqlite database.
15. Create an app to display 3 button controls vertically aligned. On selecting a button, the color of the screen will change.

16. To implement the security concepts when running an operating system running on a platform; with a focus on physical hardware, virtual servers and cloud services

Subject: BSCCS-601 Internet of Things and Security

Block	Detail syllabus
Block-1	<ul style="list-style-type: none"> The Internet of Things Today, Time for Convergence, Towards the IoT Universe, Internet of Things Vision, IoT Strategic Research and Innovation Directions, IoT Applications, Future Internet Technologies, Infrastructure, Networks and Communication, Processes, Data Management, Security, Privacy & Trust, Device Level Energy Issues, IoT Related Standardization, Recommendations on Research Topics.
Block-2	<ul style="list-style-type: none"> IoT Architecture -State of the Art – Introduction, State of the art, Architecture. Reference Model- Introduction, Reference Model and architecture, IoT reference Model, IoT Reference Architecture- Introduction, Functional View, Information View, Deployment and Operational View, Other Relevant architectural views.
Block-3	<ul style="list-style-type: none"> IoT Applications for Value Creations:Introduction, IoT applications for industry: Future Factory Concepts, Brownfield IoT, Smart Objects, Smart Applications, Four Aspects in your Business to Master IoT, Value Creation from Big Data and Serialization, IoT for Retailing Industry, IoT For Oil and Gas Industry, Opinions on IoT Application and Value for Industry, Home Management, eHealth.
Block-4	<ul style="list-style-type: none"> Internet of Things Privacy, Security and Governance: Introduction, Overview of Governance, Privacy and Security Issues, Contribution from FP7 Projects, Security, Privacy and Trust in IoT- Data-Platforms for Smart Cities, First Steps Towards a Secure Platform, Smartie Approach. Data Aggregation for the IoT in Smart Cities, Security

Subject: BSCCS-602 Cloud Computing

Block	Detail syllabus
Block-1	<ul style="list-style-type: none"> Overview of computers, Operating Systems, and Applications. Overview of Windows 10 Operating System, File System, and Snipping Tool.
Block-2	<ul style="list-style-type: none"> Overview of Computer Networks, Internet, Browsers, and Cloud Computing. Overview of Google Gmail, Contacts, Calendar, Google Drive, and OneDrive.

Block-3	<ul style="list-style-type: none"> • Overview of Computer Security and Key System Utilities (Defender, Disk Cleanup, Defrag, Task Manager & Backup).
Block-4	<ul style="list-style-type: none"> • Intro to Google Docs & OneDrive Word (Including File Format Converting). • Intro to Google Sheets and OneDrive Excel (Including File Format Converting). • Intro to Google Slides and OneDrive PowerPoint.

Subject: BSCCS-603 Introduction to Block Chain

Block	Detail syllabus
Block-1	<ul style="list-style-type: none"> • Introduction: • Need for Distributed Record Keeping, Modeling faults and adversaries, Byzantine Generals problem, Consensus algorithms and their scalability problems, Nakamoto's concept with Blockchain based cryptocurrency, Technologies Borrowed in Blockchain – hash pointers, consensus, byzantine fault-tolerant distributed computing, digital cash etc.
Block-2	<ul style="list-style-type: none"> • Basic Distributed Computing & Crypto primitives: • Atomic Broadcast, Consensus, Byzantine Models of fault tolerance, Hash functions, Puzzle friendly Hash, Collision resistant hash, digital signatures, public key crypto, verifiable random functions, Zero-knowledge systems
Block-3	<ul style="list-style-type: none"> • Bitcoin basics: • Bitcoin blockchain, Challenges and solutions, proof of work, Proof of stake, alternatives to Bitcoin consensus, Bitcoin scripting language and their use • Ethereum basics: Ethereum and Smart Contracts, The Turing Completeness of Smart Contract Languages and verification challenges, Using smart contracts to enforce legal contracts, comparing Bitcoin scripting vs. Ethereum Smart Contracts, Writing smart contracts using Solidity & JavaScript
Block-4	<ul style="list-style-type: none"> • Privacy, Security issues in Blockchain: • Pseudo-anonymity vs. anonymity, Zcash and Zk-SNARKS for anonymity preservation, attacks on Blockchains: Sybil attacks, selfish mining, 51% attacks advent of algorand; Sharding based consensus algorithms to prevent these attacks

Subject: BSCCS-604 Windows System Security

Block	Detail syllabus
Block-1	<ul style="list-style-type: none"> • Introduction, Operating System Concept and its Types, Function of OS, Evolution of Operating Systems, Introduction to Windows, Version of Windows, Operating System Administrator, My Computer, Recycle Bin, Desktop, Drives, create a directory/folder, rename/change to a directory/folder, creating a file in a directory/folder, Make the file read

	only, Make the file/directory hidden, Editing a file in a directory/folder, Delete a file in a directory/folder.
Block-2	<ul style="list-style-type: none"> Listing the files in the directory, Create a file, Copy a file from one directory to the other, Deleting all files from a directory/folder, Deleting a director/folder, Formatting a hard disk and loading operating system, Domain, workgroup, Active Directory, User Management, Network Setting, Services, IIS Configuration
Block-3	<ul style="list-style-type: none"> Cryptography - Cryptographic System, Classification of Cryptographic System, Secret Key, Cryptography, Cryptanalysis and Attacks, Encryption and their types, Encryption algorithms, brute force attack, Decryption and their types, HDD and Artifacts Encryption and Decryption Techniques.
Block-4	<ul style="list-style-type: none"> Windows Forensics - Volatile data collection, Non-volatile data collection, Registry Analysis, Browser Usage, Hibernate File Analysis, Crash Dump Analysis, File System Analysis, File Metadata and Timestamp Analysis, Event Viewer Log Analysis, MFT analysis, Timeline Creation, Evidence Collection in Linux and Mac Operating system.

Subject: BSCCS-605 Data Warehousing and Data Mining

Block-1	<ul style="list-style-type: none"> Data Warehouse: Introduction to Data Warehouse, Differences between operational database systems and data Warehouse, Data Warehouse characteristics, Data Warehouse Architecture and its components, Extraction-Transformation-Loading, Logical (Multidimensional), Data Modeling, Schema Design, star and snow-Flake Schema, Fact Constellation, Fact Table, Fully Addictive, Semi-Addictive, Non-Addictive Measures; Fatless-Facts, Dimension Table characteristics; OLAP cube, OLAP Operations, OLAP Server Architecture-ROLAP, MOLAP and HOLAP
Block-2	<ul style="list-style-type: none"> Introduction to Data Mining: Introduction, What is Data Mining, Definition, KDD, Challenges, Data Mining Tasks, Data Preprocessing- Data Cleaning, Missing Data, Dimensionality Reduction, Feature Subset Selection, Data Transformation; Measures of similarity and dissimilarity-Basics
Block-3	<ul style="list-style-type: none"> Association Rules: Problem Definition, Frequent Item Set Generation, The APRIORI Principle, Support and Confidence Measures, Association Rule Generation, APRIORI Algorithm, The Partition Algorithms, FP-Growth Algorithms, Compact Representation of Frequent Item Set-Maximal Frequent Item Set, Closed Frequent Item Set
Block-4	<ul style="list-style-type: none"> Classification: Problem definition, General Approaches to solving a classification problem, Evaluation of Classifiers, Classification techniques, Decision trees-Decision Tree Construction, Methods for expressing attribute test conditions, Algorithm for Decision tree Induction, Naïve-Bayes Classifier, Bayesian Belief Networks; K-nearest neighbor classification-Algorithm and characteristics. Clustering: Problem Definition, Clustering overview, Evaluation of clustering

	algorithms, Partitioning clustering K-Means Algorithm, K-Means Additional Issues, PAM Algorithm, Hierarchical Clustering-Algorithm- Agglomerative Methods and Divisive Methods, Basic Agglomerative Hierarchical Clustering Algorithm, Specific techniques, Key Issues in Hierarchical Clustering, Strengths and weakness, Outlier Detection
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Subject: BSCCS-606 Modern Indian Language

Block	Detail syllabus
Block-1	<ul style="list-style-type: none"> • INTRODUCTION TO BASICS OF FRENCH LANGUAGE • CONJUGATION OF FIRST GROUP OF VERBS
Block-2	<ul style="list-style-type: none"> • CONJUGATION OF SECOND GROUP OF VERBS • VOCABULARY

Subject: BSCCS-607 Project Cum Internship

Project Guidelines

A. Project Guide Eligibility Criteria:

Full Time Faculties in the Department of Computer Science/ Information Technology of BAOU/ Colleges/ Institutions affiliated to any Indian University recognized by UGC and having minimum 2 years teaching experience.

OR

A person having minimum M. Tech, MCA, M.Sc. in Computer Science/Information Technology from a UGC recognized universities with 4 years' experience in Industry/teaching.

B. Type of Project

Learner may choose any topics according to Bachelor of Science - Information Technology standards. Most of the project work falls under the following types

- a. Database oriented (e.g. payroll system, Loan management system etc.)
- b. Application oriented (e.g. Mobile apps development, web based development)
- c. R & D project (e.g. Image processing, speech processing, data mining, networking etc.)

C. Project Proposal (Synopsis)

The project proposal or the synopsis is the frame work for carrying out the project. It should be prepared in consultation with Guide. The necessary parts of a project

proposal are given in the following form:

- Title of the Project.
- Introduction and Objectives of the Project.
- Project Category (RDBMS/ Application/ R & D).
- Tools, Platform, Hardware and Software Requirement specifications.
- Whether the project is done for any Industry/Client? The Name and Address of the Industry or Client is to be mentioned.
- Methodology
- Expected output
- Conclusion

D. Application Areas & Related Tools

A list of selected area for developing the project work is given below:

Applications:

Financial/ Manufacturing/ Multimedia/ Computer Graphics/ Instructional Design/
Database Management System/ Internet/ Intranet/ Computer
Networking Communication Software/ E-Commerce/ TCP/IP Internals/
Routing protocols/ Implementation of Switches & Routers/ Image processing,/ Mobile
apps development etc..

Related Tools:

- **Front End / GUI Tools:** PHP, Scripting languages etc.
- **RDBMS/Back End:** Oracle, MYSQL, No SQL, DB2 etc.
- **Languages:** C, C++, Java, VC++, C#, Mat lab, Python, Scilab etc.
- **Internet Technologies :** DHTML, Java script, VB Script, HTML, Java, Active X, SWING, JSP,ASP, PHP, XML, Java Beans, Java Servlets, CSS, VB.Net, AWT, J2EE.
- **Networking Technologies:** ATM, Frame Relay, TCP/IP, SNMP, GSM, VoIP, PPP, IP-PSTN, SONET/SDH
- **Wireless Technologies:** Bluetooth, 3G, ISDN, EDGE
- **Operating Systems:** Windows/ DOS / UNIX / Linux /Android.

Software Project Report Guideline

The Project report should prepared in well-structured preferably typed in Latex. Depending on the type of project the report should be as follows:

Acknowledgement
Content with page
number Declaration
Certificate Certificate
from Guide

Chapter-1: Introduction

1.1 Brief idea about the project

- 1.2 Objective of the project
- 1.3 Scope of the project
- 1.4 Existing system
- 1.5 Proposed System
- 1.6 Platform used (Hardware & Software)
- 1.7 Project location

Chapter-2: Requirement Analysis

- 2.1 Introduction
- 2.2 Tools used for Requirement gathering
- 2.3 Problem in Existing System
- 2.4 Conclusion

Chapter-3: Logical Design

- 3.1 Introduction
- 3.2 DFD (0th, 1st, 2nd level)
- 3.3 ER diagram
- 3.4 Use case diagram
- 3.5 Activity diagram
- 3.6 Conclusion

Chapter-4: Physical Design

- 4.1 Introduction
- 4.2 Database Design (Give your normalized database here)
- 4.3 Module design
- 4.4 Input/output design
- 4.5 Conclusion

Chapter-5: Implementation

- 5.1 Introduction
- 5.2 Process description (if any)
- 5.3 Output & Report
- 5.4 Conclusion

Chapter-6: Testing

- 6.1 Introduction
- 6.2 Types of testing performed
- 6.3 Conclusion

References

Appendix (if any)

Subject: BSCCS-701 Open Source Technology

Block	Detail syllabus
Block-1	<ul style="list-style-type: none"><li data-bbox="395 1895 1423 2002">• Introduction – Why Open Source – Open Source –Principles, Standards Requirements, Successes – Free Software – FOSS – Internet Application Projects

Block-2	<ul style="list-style-type: none"> Open source – Initiatives, Principles, Methodologies, Philosophy, Platform, Freedom, OSSD, Licenses – Copy right, Copy left, Patent, Zero Marginal Technologies, Income generation opportunities, Internalization
Block-3	<ul style="list-style-type: none"> Case Studies – Apache, BSD, Linux, Mozilla (Firefox), Wikipedia, Joomla, GCC, Open Office Open Source Project –Starting, Maintaining –Open Source – Hardware, Design, Teaching & Media
Block-4	<ul style="list-style-type: none"> Open Source Ethics – Open Vs Closed Source – Government – Ethics – Impact of Open source Technology – Shared Software – Shared Source

Subject: BSCCS-702 Digital / Computer Forensics

Block	Detail syllabus
Block-1	<ul style="list-style-type: none"> Introduction to digital forensic Computer forensics investigation process Digital evidence and first responder procedure Understanding storage media and file system
Block-2	<ul style="list-style-type: none"> Windows forensics Logs & event analysis and password cracking Network forensics Wireless attacks
Block-3	<ul style="list-style-type: none"> Investigating web attacks Investigating email attacks Mobile device forensics Investigative reports, expert witness and cyber regulations
Block-4	<ul style="list-style-type: none"> Volatile Memory Forensics, Defeating Anti forensic technique (Steganography, Password breaking, decryption), Deleted File Recovery

Subject: BSCCS-703 Cyber Security Techniques

Block	Detail syllabus
Block-1	<ul style="list-style-type: none"> Introduction to cyber security Cybercrime and different modes of attacks Intrusion detection system
Block-2	<ul style="list-style-type: none"> It assets and wireless security Cyber security assurance framework Desktop security and malware
Block-3	<ul style="list-style-type: none"> E-commerce and web-application security Social engineering Cyber security risk management

Block-4	<ul style="list-style-type: none">• Computer forensics fundamentals and collection of digital evidence• Cyber security initiatives in India• Cyber security strategies and policies
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