DON BOSCO ARTS & SCIENCE COLLEGE

ANGADIKADAVU

(Affiliated to Kannur University Approved by Government of Kerala)

ANGADIKADAVU P.O., IRITTY, KANNUR – 670706

COURSE PLAN

BCA

(2019 – 22)

SEMESTER - V

ACADEMIC YEAR - (2021-22)

V Semester BCA (2019 - 22)			
SL. No.	Name of Subjects with Code	Name of the Teacher	Duty Hours per week
1.	5B08BCA Operating System	Sindhu PM	4
2.	5B13BCA Enterprise Java Programming	Fincy Cyriac	4
3.	5B14BCA- Python Programming	Vineetha Mathew	3
4.	5B 16 BCA - E01 Information Security	Vineetha Mathew	4
5.	5B15BCAWeb Technology	Sruthi N	3
6.	6B21BCA Lab V: Enterprise Java Programming	Fincy Cyriac	3
7.	6B22BCA Lab VI: Python Programming	Vineetha Mathew	4
8.	6B23BCA Lab VII: Web Technology	Sruthi N	3
9.	General Elective Course	Hebin Layola	2
	Name of Class Incharge	Sruthi N	

TIME TABLE

Day	09.50 Am - 10.45 Am	10.45 Am -11.40 Am	11.55 Am -12.50 Pm	01.40 Pm - 02.35 Pm	02.35 Pm - 03.30 Pm
1	5B14BCA- Python Programming	5B13BCA Enterprise Java Programming	5B15BCAWeb Technology	5B08BCA Operating System	5B 16 BCA - E01 Information Security
2	5B15BCAWeb Technology	General Elective Course	5B13BCA Enterprise Java Programming	5B 16 BCA - E01 Information Security	5B13BCA Enterprise Java Programming
3	5B08BCA Operating System	General Elective Course	5B13BCA Enterprise Java Programming	6B22BCA Lab VI: Python Programming	5B 16 BCA - E01 Information Security
4	5B14BCA- Python Programming	5B13BCA Enterprise Java Programming	5B 16 BCA - E01 Information Security	5B15BCAWeb Technology	5B08BCA Operating System
5	5B13BCA Enterprise Java Programming	6B22BCA Lab VI: Python Programming	5B13BCA EnterpriseJava Programming	5B 16 BCA - E01 Information Security	5B15BCAWeb Technology
6	5B08BCAOperating System	6B22BCA Lab VI: Python Programming	5B13BCAEnterprise Java Programming	5B 16 BCA - E01 Information Security	5B15BCAWeb Technology

Subject Code:	**5B08BCA**
Subject Name:	**Operating System**
No. of Credits:	**3**
No. of Contact Hours:	**72**
Hours per Week:	**4**
Name of the Teacher:	**Sindhu P M**

Unit I

OPERATING SYSTEMS OVERVIEW: Operating System Definition, Functions, OS as a resource manager, Types of OS, Evolution of OS, OS Structure, Operating system operations, Process Management, Memory Management, Storage Management, Protection and Security, Operating System Services, User Operating System Interface, System Calls, OS design and implementation, Operating System Structure. (14 Hrs)

Unit II

PROCESS MANAGEMENT: Processes: Process Concept, Process Scheduling, Operations on Processes, Inter process Communication. CPU Scheduling: Basic concepts, scheduling criteria, scheduling algorithms. Deadlocks: System Model, Deadlock Characterization, Methods for Handling Deadlocks, Deadlock Prevention, Deadlock Avoidance, Deadlock Detection, Recovery from Deadlock. (18Hrs)

Unit III

MEMORY MANAGEMENT: Memory management: Single contiguous allocation, Partitioned allocation, Relocatable partitioned, Paging, Demand paging, Segmentation, Segmentation and demand paging, other schemes. (14 Hrs)

Unit IV

STORAGE MANAGEMENT: Mass Storage Structure: Overview, Disk Scheduling: (FCFS, SSTF, SCAN, C-SCAN, Look), Disk Management. RAID Structure . (14 Hrs)

Unit V

File System interface: File Concepts, Directory and Disk Structure. Protection: Protection: Goals of protection, principles of protection, domain of protection, access matrix. (12 Hrs)

TEACHING SCHEDULE

No of Weeks	Dates	Session	Topic
1	12-07-2021 To 17-07-2021	1	Operating System Definition
		2	Functions
		3	OS as a resource manager
		4	Types of OS
		5	Evolution of OS
2	19-07-2021 To 24-07-2021	6	OS Structure
		20 July	**Bakrid- Holiday**
		7	Operating system operations, Process Management, Memory Management
		8	Storage Management, Protection and Security
		9	Operating System Services
3	26-07-2021 To 31-07-2021	10	User Operating System Interface
		11	System Calls
		12	OS design and implementation
		13	Operating System Structure
		14	**Module 1 Exam**
4	02-08-2021 To 07-08-2021	15	Process Management
		16	Process Concept
		17	Process Scheduling
		18	Process Scheduling
		19	Process Scheduling
5	09-08-2021 To 14-08-2021	20	Operations on Processes
		21	Inter process Communication.
		22	CPU Scheduling: Basic concepts
		23	Scheduling criteria
		24	Scheduling algorithms
6	16-08-2021 To 21-08-2021	25	Deadlocks: System Model
		26	Deadlock Characterization
		27	Methods for Handling Deadlocks
		19 August	**Moharam/Onam Vacation**
		20 August	Onam Vacation
		21 August	Onam Vacation
7	23-08-2021 To	23 August	Onam Vacation
		24 August	Onam Vacation
		25 August	Onam Vacation

No of Weeks	Dates	Session	Topic
	28-08-2021	26 August	Onam Vacation
		27 August	Onam Vacation
		28 August	Onam Vacation
8	30-08-2021 To 04-09-2021	30 August	Onam Vacation
		28	Deadlock Prevention
		29	Deadlock Avoidance
		30	Deadlock Detection
		31	Recovery from Deadlock
		32	**Module 2 Exam**
9	06-09-2021 To 11-09-2021	33	Memory management
		34	Single contiguous allocation
		35	Partitioned allocation
		36	Relocatable partitioned
		37	Paging
10	13-09-2021 To 18-09-2021	38	Paging
		39	Paging
		40	Demand paging
		41	Segmentation
		42	Segmentation
11	20-09-2021 To 25-09-2021	43	Segmentation and demand paging
		21 September	Sree Narayana Guru Samadhi
		44	Segmentation and demand paging
		45	Other schemes.
		46	**Module 3 Exam**
		47	Storage Management
12	27-09-2021 To 02-10-2021	48	Mass Storage Structure: Overview
		49	Disk Scheduling: FCFS
		50	SSTF
		51	SCAN
		2 October	**Gandhi Jayanthi**
13	04-10-2021 To 09-10-2021	52	C-SCAN
		53	Look
		54	Disk Management.
		55	Disk Management.
		56	RAID Structure
14	11-10-2021 To	57	RAID Structure
		58	**Module 4 Exam**
		59	File System interface: File Concepts

No of Weeks	Dates	Session	Topic
	16-10-2021	14 October	**Mahanavami/Study Leave**
		15 October	**Vijayadasami/ Study Leave**
			Study Leave
15	18-10-2021 To 23-10-2021		**Study Leave**
		19 October	Milad-i-Sherif/ **Study Leave**
			Study Leave
			IV Semester University Eeamination
			IV Semester University Eeamination
			IV Semester University Eeamination
16	25-10-2021 To 30-10-2021		**IV Semester University Eeamination**
			IV Semester University Eeamination
			IV Semester University Eeamination
			IV Semester University Eeamination
			IV Semester University Eeamination
			IV Semester University Eeamination
17	01-11-2021 To 06-11-2021		**IV Semester University Eeamination**
			IV Semester University Eeamination
		60	Directory and Disk Structure.
		61	Directory and Disk Structure.
		62	Protection
18	08-11-2021 To 13-11-2021	63	Goals of protection
		64	principles of protection
		65	Domain of protection
		4 November	Diwali
		66	Access matrix
19	15-11-2021 To 19-11-2021	67	**Module 5 Exam**
		68	**Revision module 1&2**
		69	**Revision module 3&4**
		70	**Revision module 5**
		71	**Previous year question paper discussion**
		72	**Previous year question paper discussion**
			Internal Examination
			Internal Examination
			Internal Examination
			Internal Examination
			Internal Examination
22	06-12-2021		**Internal Examination**
			Study Leave

No of Weeks	Dates	Session	Topic
	To 10-12-2021		**Study Leave**
			Study Leave
			Study Leave
23	13-12-2021 To 17-12-2021		**Study Leave**
			Study Leave
			Study Leave
			Study Leave
			Study Leave
24	20-12-2021 To 24-12-2021		**Study Leave**
			Study Leave
			Study Leave
			Christmas Vacation
			Christmas Vacation
25			**Christmas Vacation**
			Christmas Vacation
			Christmas Vacation
			Christmas Vacation

Subject Code:	**5B15BCA**
Subject Name:	**Web Technology**
No. of Credits:	**2**
No. of Contact Hours:	**36**
Hours per Week:	**3**
Name of the Teacher:	**Sruthi N**

COURSE OUTCOME

CO1: Enable students to program for the World Wide Web using HTML, JavaScript.
CO2: Create static and dynamic web pages.
CO3: Impart basic knowledge in Client-server model.

UNIT I

Introduction to Internet and WWW, Introduction to HTML, structure of HTML, HTML elements, attributes, syntax of tags , starting and ending tags, physical style tags,listing, labeling, grouping, images and linking **(6 Hrs)**

UNIT II

HTML Tables-tags-<tr>,<td>,<th> attributes. HTML Form-tag, attributes-typepasswd, submit, radio, check, method, action. **(8Hrs)**

UNIT III

Frames-<frame>, <frameset>, <iframe>,<noframe> and other important tags and attributes. Simple programs using frames. **(6 Hrs)**

UNIT IV

Javascript- Introduction, data types, variables, operators, functions, objects, arrays. Client-side object hierarchy and document object Model, <script>, event handlers, javascript in urls **(8Hrs)**

UNIT V

Windows and frames-dialog boxes, status line, navigator object, opening Windows, closing windows, Location object, history object.- Date object- math object-Accessing form object **(8Hrs)**

Books for Study:

1. Bill Kennedy, Chuck Musciano, HTML: The Definitive Guide, 3rd Ed, O'Reilly Media
2. Flanagan David, JavaScript: The Definitive Guide, 6th Ed, O'Reilly Media

Books for Reference:

1. Thomas A. Powel, HTML & CSS: The Complete Reference, 5th Ed, TMH

TEACHING SCHEDULE

No of Weeks	Dates	Session	Topic
1	12-07-2021 To 17-07-2021	1	Introduction to Internet and WWW
		2	Introduction to Internet and WWW
		3	Introduction to Internet and WWW
2	19-07-2021 To 24-07-2021	4	Search engine,Web browser
		20 July	**Bakrid- Holiday**
		5	Introduction to HTML
3	26-07-2021 To 31-07-2021	6	Introduction to HTML
		7	Introduction to HTML
		8	Structure of HTML
4	02-08-2021 To 07-08-2021	9	Structure of HTML
		10	HTML elements, attributes
		11	HTML elements, attributes
5	09-08-2021 To 14-08-2021	12	Syntax of tags , starting and ending tags
		13	Syntax of tags , starting and ending tags
		14	Physical style tags
6	16-08-2021 To 21-08-2021	15	Listing, labeling,
		19 August	**Moharam/Onam Vacation**
		20 August	Onam Vacation
		21 August	Onam Vacation
7	23-08-2021 To 28-08-2021	23 August	Onam Vacation
		24 August	Onam Vacation
		25 August	Onam Vacation
		26 August	Onam Vacation
		27 August	Onam Vacation
		28 August	Onam Vacation
8	30-08-2021 To 04-09-2021	30 August	Onam Vacation
		16	Grouping, images and linking
		17	Revision Module 1
9	06-09-2021 To 11-09-2021	18	Class test Module 1
		19	HTML Tables-tags-<tr>,<td>,<th> attributes
		20	HTML Tables-tags-<tr>,<td>,<th> attributes
10	13-09-2021	21	HTML Tables-tags-<tr>,<td>,<th> attributes
		22	HTML Form-tag

No of Weeks	Dates	Session	Topic
	To 18-09-2021	23	Form tag attributes-typepasswd, submit
11	20-09-2021 To 25-09-2021	24	Form tag attributes-typepasswd, submit
		21 September	Sree Narayana Guru Samadhi
		25	Radio, check, method, action
12	27-09-2021 To 02-10-2021	26	Radio, check, method, action
		27	Revision Module 2
		2 October	**Gandhi Jayanthi**
13	04-10-2021 To 09-10-2021	28	Class test Module 2
		29	Frames-<frame>, <frameset>, <iframe>,<noframe>
		30	Simple programs using frames.
14	11-10-2021 To 16-10-2021	14 October	**Mahanavami/Study Leave**
		15 October	**Vijayadasami/ Study Leave**
			Study Leave
15	18-10-2021 To 23-10-2021		**Study Leave**
		19 October	Milad-i-Sherif/ **Study Leave**
			Study Leave
			IV Semester University Examination
			IV Semester University Examination
			IV Semester University Examination
16	25-10-2021 To 30-10-2021		**IV Semester University Examination**
			IV Semester University Examination
			IV Semester University Examination
			IV Semester University Examination
			IV Semester University Examination
			IV Semester University Examination
17	01-11-2021 To 06-11-2021		**IV Semester University Examination**
			IV Semester University Examination
18	08-11-2021 To 13-11-2021	31	Javascript- Introduction, data types, variables, operators, functions
		4 November	Diwali
19	15-11-2021 To 19-11-2021	32	Client-side object hierarchy and document object Model, <script>,
		33	Windows and frames-dialog boxes, status line, navigator object, opening

No of Weeks	Dates	Session	Topic
			Windows, closing windows
20	22-11-2021 To 26-11-2021	34	Location object, history object.- Date object- mathobject-Accessing form object
		35	**Complete Revision**
		36	**Class Test**
21	29-11-2021 To 03-12-2021		**Internal Examination**
			Internal Examination
			Internal Examination
			Internal Examination
			Internal Examination
22	06-12-2021 To 10-12-2021		**Internal Examination**
			Study Leave
			Study Leave
			Study Leave
			Study Leave
23	13-12-2021 To 17-12-2021		**Study Leave**
			Study Leave
			Study Leave
			Study Leave
			Study Leave
24	20-12-2021 To 24-12-2021		**Study Leave**
			Study Leave
			Study Leave
			Christmas Vacation
			Christmas Vacation
25			**Christmas Vacation**
			Christmas Vacation
			Christmas Vacation
			Christmas Vacation

Subject Code:	**6B23BCA**
Subject Name:	**Lab VII: Web Technology**
No. of Credits:	**2**
No. of Contact Hours:	**36**
Hours per Week:	**3**
Name of the Teacher:	**Sruthi N**

Sample Program list

1. Develop an HTML page using all basic tags
2. Develop an HTML page to display hotel menu using all types of lists
3. Write an HTML code to insert an image into the web page. Use the attributes height, width and border. Also align some text with respect to the images. The image should have an ALT text in it.
4. Design a HTML page for the following.
a. Set an image as a link
b. Open a link in a new browser window
c. Jump to another part of a document (on same page)
5. Create a web page to display the maximum and minimum temperature of 5 cities using table.
6. Create a web page for your college using frames, images and hyperlink
7. Create a web page that illustrate the onMouseOver and onMouseOut event handlers.
8.Form Validation using Javascript.
9. Create an email registration form. Give necessary validations
10. Write a JavaScript code using arrays
11. Develop an HTML page that accepts any mathematical expression, evaluates that expression and display the result of the evaluation
12. Write a Javascript program to display the current time
13. Write a Javascript program to print the prime numbers within a range
14. Write a Javascript program to show the working of alert ()
15. Write a JavaScript program to find the factorial of a number.
16. Form Processing using PHP
17. Form validation using PHP
18. Storing data in MYSQL using PHP

TEACHING SCHEDULE

No of Weeks	Dates	Session	Topic
1	12-07-2021 To 17-07-2021	1	Sample program
		2	Sample program
		3	Sample program
2	19-07-2021 To 24-07-2021	4	Sample program
		20 July	**Bakrid- Holiday**
		5	Develop an HTML page using all basic tags
3	26-07-2021 To 31-07-2021	6	Develop an HTML page to display hotel menu using all types of lists
		7	Sample program
		8	Sample program
4	02-08-2021 To 07-08-2021	9	Write an HTML code to insert an image into the web page. Use the attributes height, width and border. Also align some text with respect to the images. The image should have an ALT text in it.
		10	Design a HTML page for the following. a. Set an image as a link b. Open a link in a new browser window c. Jump to another part of a document (on same page)
		11	Create a web page to display the maximum and minimum temperature of 5 cities using table.
5	09-08-2021 To 14-08-2021	12	Create a web page for your college using frames, images and hyperlink
		13	Create a web page for your college using frames, images and hyperlink
		14	Sample program
6	16-08-2021 To 21-08-2021	15	Form Validation using Javascript.
		19 August	**Moharam/Onam Vacation**
		20 August	Onam Vacation
		21 August	Onam Vacation
7	23-08-2021 To 28-08-2021	23 August	Onam Vacation
		24 August	Onam Vacation
		25 August	Onam Vacation
		26 August	Onam Vacation
		27 August	Onam Vacation
		28 August	Onam Vacation
8	30-08-2021	30 August	Onam Vacation
		16	Create an email registration form. Give necessary

No of Weeks	Dates	Session	Topic
	To 04-09-2021		validations
		17	Write a JavaScript code using arrays
9	06-09-2021 To 11-09-2021	18	Develop an HTML page that accepts any mathematical expression, evaluates that expression and display the result of the evaluation
		19	Write a Javascript program to display the current time
		20	Write a Javascript program to print the prime numbers within a range
10	13-09-2021 To 18-09-2021	21	Write a Javascript program to show the working of alert ()
		22	Write a Javascript program to show the working of alert ()
		23	Write a JavaScript program to find the factorial of a number.
11	20-09-2021 To 25-09-2021	24	Write a JavaScript program to find the factorial of a number.
		21 September	Sree Narayana Guru Samadhi
		25	Form Processing using PHP
12	27-09-2021 To 02-10-2021	26	Form Processing using PHP
		27	Form validation using PHP
		2 October	**Gandhi Jayanthi**
13	04-10-2021 To 09-10-2021	28	Form validation using PHP
		29	Storing data in MYSQL using PHP
		30	Storing data in MYSQL using PHP
14	11-10-2021 To 16-10-2021	14 October	**Mahanavami/Study Leave**
		15 October	**Vijayadasami/ Study Leave**
			Study Leave
15	18-10-2021 To 23-10-2021		**Study Leave**
		19 October	Milad-i-Sherif/ **Study Leave**
			Study Leave
			IV Semester University Examination
			IV Semester University Examination
			IV Semester University Examination
16	25-10-2021 To 30-10-2021		**IV Semester University Examination**
			IV Semester University Examination
			IV Semester University Examination
			IV Semester University Examination
			IV Semester University Examination
			IV Semester University Examination

No of Weeks	Dates	Session	Topic
17	01-11-2021 To 06-11-2021		**IV Semester University Examination**
			IV Semester University Examination
18	08-11-2021 To 13-11-2021	31	Practical exams
		4 November	Diwali
19	15-11-2021 To 19-11-2021	32	Practical exams
		33	Practical exams
20	22-11-2021 To 26-11-2021	34	Practical exams
		35	**Complete Revision**
		36	**Class Test**
21	29-11-2021 To 03-12-2021		**Internal Examination**
			Internal Examination
			Internal Examination
			Internal Examination
			Internal Examination
22	06-12-2021 To 10-12-2021		**Internal Examination**
			Study Leave
			Study Leave
			Study Leave
			Study Leave
23	13-12-2021 To 17-12-2021		**Study Leave**
			Study Leave
			Study Leave
			Study Leave
			Study Leave
24	20-12-2021 To 24-12-2021		**Study Leave**
			Study Leave
			Study Leave
			Christmas Vacation
			Christmas Vacation
25			**Christmas Vacation**
			Christmas Vacation
			Christmas Vacation
			Christmas Vacation

Subject Code:	**5B 14 BCA**
Subject Name:	**Python Programming**
No. of Credits:	**2**
No. of Contact Hours:	**36**
Hours per Week:	**3**
Name of the Teacher:	**Vineetha Mathew**

COURSE OUTCOME

CO1: Learn Python for expressing computation

CO2: Familiarize with functions and modules in python

CO3: Understand object-oriented programming concepts in Python

CO4: Learn the techniques for database connectivity and GUI programming in Python

SYLLABUS

Unit I

Basic Elements and Control Statements: Features of Python, Different Methods to Run Python, Basic Elements (Objects, Expressions, Numerical Types, Strings, Variables), Comments, Indentation in Python, Input and Output in Python, import function, Operators in Python, Branching (if, else, elif), Iteration (while, for), range and enumerate functions, Tuples, Lists, Sets, Dictionaries, Built-in methods of lists, sets and dictionaries, Mutable and Immutable Objects. (8 Hrs)

Unit II

Functions, Modules, File Handling and Exception Handling: Functions Definition, Function Calling, Function Arguments (Required, Keyword, Default), Recursion, Modules, Built-in Modules, Creating Modules, File Handling (Opening, Closing, Writing, Reading), Exceptions, Built-in Exceptions (IndexError, OverflowError, ZeroDivisionError, RuntimeError), Exception Handling. (8 Hrs)

Unit III

Object Oriented Programming, Arrays and Data Visualization: Class Definition, Object Creation, Built-in Attribute Methods, Object Oriented Programming Features

of Python. Arrays in Python, Numpy Module, ndarray, Creating Arrays (array, zeros, ones, empty, linspace, arrange, random), Two-Dimensional Array, Indexing, Slicing, Iterating, Copying, Splitting, Shape Manipulation (reshape, transpose, resize), Arithmetic Operations on Arrays. Data Visualization in Python matplotlib Module, pyplot, plot(), scatter, bar charts, Formatting, figure(), subplot(), text(), xlabel(), ylabel(), title(), Plotting Simple Mathematical Functions (sin x, x^2). (8 Hrs)

Unit IV

Connecting to Database: Connecting to a Database, Basic Operations on Database (Crater, Insert, Update, Delete), Fetching Data from a Database, Transaction Control. (6 Hrs)

Unit V

GUI Programming: GUI Programming using Tkinter, Tkinter Widgets (Label, Message, Entry, Text, Button, tkMessagebox, RadioButton, Checkbutton, Listbox, Menu, Menubutton, Scale, Scrollbar, Canvas), Layout Managers. (6 Hrs)

Books for Study:

1. Dr. Jeeva Jose, Taming Python By Programming, Khanna Publishing
2. John V. Guttag, Introduction to Computation and Programming Using Python with Application to Understanding Data, PHI (2016)
3. https://www.numpy.org/devdocs/user/quickstart.html
4. https://matplotlib.org/users/pyplot_tutorial.html

Books for Reference:

1. Charles Dierbach, Introduction to Computer Science using Python, Wiley (2015)
2. https://www.tutorialspoint.com/python/
3. Python for Education by Ajith Kumar B P
4. https://docs.python.org/3/tutorial/index.html
5. Introduction to Computer Science and Programming Using Python Provided by Massachusetts Institute of Technology (MITx) - Available at : (https://www.edx.org/course/introduction-to-computer-science-and-programmingusing-python-2)

TEACHING SCHEDULE

No of Weeks	Dates	Session	Topic
1	12-07-2021 To 17-07-2021	1	Basic Elements and Control Statements: Features of Python, Different Methods to Run Python.
		2	Basic Elements (Objects, Expressions, Numerical Types, Strings, Variables), Comments, Indentation in Python.
		3	Input and Output in Python, import function, Operators in Python.
2	19-07-2021 To 24-07-2021	4	Branching (if, else, elif), Iteration (while, for), range and enumerate functions.
		20 July	**Bakrid- Holiday**
		5	Tuples, Built-in methods of tuples,
3	26-07-2021 To 31-07-2021	6	Lists, Built-in methods of lists
		7	Sets, Dictionaries, Built-in methods of lists, sets and dictionaries.
		8	Mutable and Immutable Objects.
4	02-08-2021 To 07-08-2021	9	Functions Definition, Function Calling, Function Arguments (Required, Keyword, Default), Recursion.
		10	Modules, Built-in Modules, Creating Modules.
		11	File Handling (Opening, Closing, Writing, Reading)
5	09-08-2021 To 14-08-2021	12	Exceptions, Built-in Exceptions (IndexError, OverflowError, ZeroDivisionError, RuntimeError), Exception Handling.
		13	Revision Module 1
		14	Revision Module 2
6	16-08-2021 To 21-08-2021	15	Question Discussion
		19 August	**Moharam/Onam Vacation**
		20 August	Onam Vacation
		21 August	Onam Vacation
7	23-08-2021 To 28-08-2021	23 August	Onam Vacation
		24 August	Onam Vacation
		25 August	Onam Vacation
		26 August	Onam Vacation
		27 August	Onam Vacation
		28 August	Onam Vacation
8	30-08-2021 To 04-09-2021	30 August	Onam Vacation
		16	Class Test Module 1 and 2
		17	Class Definition, Object Creation, Built-in Attribute Methods.

No of Weeks	Dates	Session	Topic
9	06-09-2021 To 11-09-2021	18	Object Oriented Programming Features of Python.
		19	Arrays in Python, Numpy Module, ndarray, Creating Arrays (array, zeros, ones, empty, linspace, arrange, random)
		20	Two-Dimensional Array, Indexing, Slicing, Iterating, Copying, Splitting, Shape Manipulation (reshape, transpose, resize)
10	13-09-2021 To 18-09-2021	21	Arithmetic Operations on Arrays.
		22	Data Visualization in Python matplotlib Module, pyplot, plot(), scatter, bar charts, Formatting, figure(), subplot(), text(), xlabel(), ylabel(), title(), Plotting Simple Mathematical Functions (sin x, x^2)
		23	Revision
11	20-09-2021 To 25-09-2021	24	Class Test
		21 September	Sree Narayana Guru Samadhi
		25	Connecting to a Database, Basic Operations on Database (Create, Insert)
12	27-09-2021 To 02-10-2021	26	Basic Operations on Database (Update, Delete)
		27	Fetching Data from a Database
		2 October	**Gandhi Jayanthi**
13	04-10-2021 To 09-10-2021	28	Transaction Control.
		29	Revision
		30	Class Test
14	11-10-2021 To 16-10-2021	14 October	**Mahanavami/Study Leave**
		15 October	**Vijayadasami/ Study Leave**
			Study Leave
15	18-10-2021 To 23-10-2021		**Study Leave**
		19 October	Milad-i-Sherif/ **Study Leave**
			Study Leave
			IV Semester University Examination
			IV Semester University Examination
			IV Semester University Examination
16	25-10-2021 To 30-10-2021		**IV Semester University Examination**
			IV Semester University Examination
			IV Semester University Examination
			IV Semester University Examination
			IV Semester University Examination
			IV Semester University Examination
17	01-11-2021		**IV Semester University Examination**

No of Weeks	Dates	Session	Topic
	To 06-11-2021		**IV Semester University Examination**
18	08-11-2021 To 13-11-2021	31	GUI Programming using Tkinter
		4 November	Diwali
19	15-11-2021 To 19-11-2021	32	Tkinter Widgets (Label, Message, Entry, Text, Button, tkMessagebox)
		33	Tkinter Widgets (RadioButton, Checkbutton, Listbox, Menu, Menubutton, Scale, Scrollbar, Canvas), Layout Managers.
20	22-11-2021 To 26-11-2021	34	**Complete Revision**
		35	**Complete Revision**
		36	**Class Test**
21	29-11-2021 To 03-12-2021		**Internal Examination**
			Internal Examination
			Internal Examination
			Internal Examination
			Internal Examination
22	06-12-2021 To 10-12-2021		**Internal Examination**
			Study Leave
			Study Leave
			Study Leave
			Study Leave
23	13-12-2021 To 17-12-2021		**Study Leave**
			Study Leave
			Study Leave
			Study Leave
			Study Leave
24	20-12-2021 To 24-12-2021		**Study Leave**
			Study Leave
			Study Leave
			Christmas Vacation
			Christmas Vacation
25			**Christmas Vacation**
			Christmas Vacation
			Christmas Vacation
			Christmas Vacation

Subject Code:	**6B 22 BCA Lab VI**
Subject Name:	**Python Programming**
No. of Credits:	**2**
No. of Contact Hours:	**54**
Hours per Week:	**4**
Name of the Teacher:	**Vineetha Mathew**

Sample Program List

1. Write a program to find the largest from a list of numbers
2. Write a program to generate first n perfect numbers
3. Write a program to perform the binary search
4. Write a program to find the square root of a number using bisection search method.
5. Write a program to generate Fibonacci series using recursion
6. Write a program to find the LCM and GCD of 2 numbers
7. Write a program to perform merge sort
8. Write a program which reads the contents of a file and copy the contents to another file after changing all the letter to upper case. Exceptions should be handled.
9. Write a program to find the prime numbers in a list of numbers.
10. Write a python program to perform the following
    a) Create table students with fields name, sex, rollno, marks
    b) Insert some rows into the table
    c) Update the marks of all students by adding 2 marks
    d) Delete a student with a given rollno
    e) Display the details of a student with a given rollno
11. Create a simple Login window using Tkinter
12. Create a plot for the mathematical function x^2 . The title of the plot and the axes should be labeled.

TEACHING SCHEDULE

No of Weeks	Dates	Session	Topic
1	12-07-2021 To 17-07-2021	1	Sample Program
		2	Sample Program
		3	Sample Program
		4	Sample Program
2	19-07-2021 To 24-07-2021	5	Sample Program
		20 July	**Bakrid- Holiday**
		6	Sample Program
		7	Sample Program
		8	Sample Program
3	26-07-2021 To 31-07-2021	9	Program to find the largest from a list of numbers
		10	Sample Program
		11	Sample Program
		12	Program to generate first n perfect numbers
4	02-08-2021 To 07-08-2021	13	Sample Program
		14	Sample Program
		15	Sample Program
		16	Program to perform the binary search
5	09-08-2021 To 14-08-2021	17	Sample Program
		18	Sample Program
		19	Program to find the square root of a number using bisection search method.
		20	Sample Program
6	16-08-2021 To 21-08-2021	21	Sample Program
		19 August	**Moharam/Onam Vacation**
		20 August	Onam Vacation
		21 August	Onam Vacation
7	23-08-2021 To 28-08-2021	23 August	Onam Vacation
		24 August	Onam Vacation
		25 August	Onam Vacation
		26 August	Onam Vacation
		27 August	Onam Vacation
		28 August	Onam Vacation
8	30-08-2021 To	30 August	Onam Vacation
		22	Program to generate Fibonacci series using recursion
		23	Sample Program

No of Weeks	Dates	Session	Topic
	04-09-2021	24	Program to find the LCM and GCD of 2 numbers
9	06-09-2021 To 11-09-2021	25	Sample Program OOP
		26	Program to perform merge sort
		27	Sample Program OOP
		28	Sample Program Numpy
10	13-09-2021 To 18-09-2021	29	Sample Program Numpy
		30	Program which reads the contents of a file and copy the contents to another file after changing all the letter to upper case. Exceptions should be handled.
		31	Sample Program Numpy
		32	Sample Program Numpy
11	20-09-2021 To 25-09-2021	33	Sample Program Numpy
		21 September	Sree Narayana Guru Samadhi
		34	Sample Program Numpy
		35	Sample Program Database
12	27-09-2021 To 02-10-2021	36	Sample Program Database
		37	Sample Program Database
		38	Sample Program Database
		2 October	**Gandhi Jayanthi**
13	04-10-2021 To 09-10-2021	39	Program to perform the following a) Create table students with fields name, sex, rollno, marks b) Insert some rows into the table c) Update the marks of all students by adding 2 marks d) Delete a student with a given rollno e) Display the details of a student with a given rollno
		40	Sample Program Database
		41	Sample Program Database
		42	Sample Program Database
14	11-10-2021 To 16-10-2021	14 October	**Mahanavami/Study Leave**
		15 October	**Vijayadasami/ Study Leave**
			Study Leave
15	18-10-2021 To 23-10-2021		**Study Leave**
		19 October	Milad-i-Sherif/ **Study Leave**
			Study Leave
			IV Semester University Examination

No of Weeks	Dates	Session	Topic
			IV Semester University Examination
			IV Semester University Examination
16	25-10-2021 To 30-10-2021		**IV Semester University Examination**
			IV Semester University Examination
			IV Semester University Examination
			IV Semester University Examination
			IV Semester University Examination
			IV Semester University Examination
17	01-11-2021 To 06-11-2021		**IV Semester University Examination**
			IV Semester University Examination
			IV Semester University Examination
		43	Matplotlib programs
18	08-11-2021 To 13-11-2021	44	Matplotlib programs
		45	Create a plot for the mathematical function x^2 . The title of the plot and the axes should be labeled.
		46	Sample Program
		4 November	Diwali
19	15-11-2021 To 19-11-2021	47	Sample program of Tkinter
		48	Sample program of Tkinter
		49	Sample program of Tkinter
		50	Sample program of Tkinter
20	22-11-2021 To 26-11-2021	51	Create a simple Login window using Tkinter
		52	Lab Practice
		53	Lab Practice
		54	Lab Exam
21	29-11-2021 To 03-12-2021		**Internal Examination**
			Internal Examination
			Internal Examination
			Internal Examination
			Internal Examination
22	06-12-2021 To 10-12-2021		**Internal Examination**
			Study Leave
			Study Leave
			Study Leave
			Study Leave
23	13-12-2021 To		**Study Leave**
			Study Leave
			Study Leave

No of Weeks	Dates	Session	Topic
	17-12-2021		**Study Leave**
			Study Leave
24	20-12-2021 To 24-12-2021		**Study Leave**
			Study Leave
			Study Leave
			Christmas Vacation
			Christmas Vacation
25			**Christmas Vacation**
			Christmas Vacation
			Christmas Vacation
			Christmas Vacation

Subject Code:	**5B 16 BCA- E01**
Subject Name:	**Information Security**
No. of Credits:	**3**
No. of Contact Hours:	**72**
Hours per Week:	**5**
Name of the Teacher:	**Vineetha Mathew**

COURSE OUTCOME

CO1: To understand the need of information security and to master information security Concepts, mechanisms and services as well as issues related to information Security.

CO2: To be familiar with cryptography and its categories.

CO3: Distinguish public and private key crypto systems and familiarize the RSA crypto System.

CO4: To attain the knowledge of digital signature and its security services.

SYLLABUS

Unit I

Introduction to Information Security- The need for Security, Principles of security - confidentiality, Authentications, Integrity, Non-repudiation. Types of attacks- Passive attacks, Active attacks, Virus, Worm, Trojan horse. Introduction to Cryptography, Steganography, Secret Sharing. (14Hrs)

Unit II

Traditional symmetric Key Ciphers: Introduction-Kirchhoff's principle, cryptanalysis, categories of traditional ciphers; Substitution Ciphers – mono alphabetic ciphers, polyalphabetic ciphers; Transposition Ciphers - keyless and keyed transposition ciphers, Stream and Black Ciphers - stream ciphers, block ciphers. (16Hrs)

Unit III

Introduction, DES Structure - initial and final permutations, rounds, cipher and reverse cipher, examples; DES Analysis - properties, design criteria, DES weaknesses; Multiple DES - double DES, triple DES; Security of DES - brute-force attack, differential cryptanalysis, linear cryptanalysis. (16Hrs)

Unit IV

Principles of Public Key Cryptosystems- Public Key Cryptosystem, Applications of Key Cryptosystems, Requirement for Public Key Cryptosystem, Public Key Cryptanalysis. RSA Algorithm–Description of the Algorithm, Computational Aspects, Security of RSA. (13Hrs)

Unit V

Comparison- inclusion, verification method, relationship, duplicity; Process- needs for keys, signing the digest; Service- message authentication, message integrity, nonrepudiation, confidentiality; Attacks on Digital Signature- attack types; Digital Signature Schemes- RSA digital signature schemes (13Hrs)

Books for Study:

1. Behrouz A. Forouzan and DebdeepMukhopadhyay, Cryptography And Network Security, 3rd Ed, McGraw Hill (Units I, II, III, V)
2. William Stallings, Cryptography and Network Security - Principles and Practice Paperback, 7th Ed, Pearson(Unit IV)

Books for Reference:

1. Pieprzyk Josef, Hardjono Thomas and Seberry Jennifer, Fundamentals of Computer Security, Springer, 2003.

TEACHING SCHEDULE

No of Weeks	Dates	Session	Topic
1	12-07-2021 To 17-07-2021	1	Introduction to Information Security-
		2	The need for Security
		3	Principles of security - confidentiality, Authentications
		4	Integrity, Non-repudiation.
		5	Types of attacks- Passive attacks
2	19-07-2021 To 24-07-2021	6	Active attacks
		20 July	**Bakrid- Holiday**
		7	Virus, Worm
		8	Trojan horse.
		9	Introduction to Cryptography
3	26-07-2021 To 31-07-2021	10	Steganography
		11	Steganography
		12	Secret Sharing.
		13	Revision
		14	Class Test
4	02-08-2021 To 07-08-2021	15	Introduction-Traditional symmetric Key Ciphers
		16	Kirchhoff's principle
		17	Cryptanalysis
		18	Categories of traditional ciphers
		19	Substitution Ciphers - monoalphabetic ciphers
5	09-08-2021 To 14-08-2021	20	Monoalphabetic ciphers
		21	Monoalphabetic ciphers
		22	Monoalphabetic ciphers
		23	Polyalphabetic ciphers
		24	Polyalphabetic ciphers
6	16-08-2021 To 21-08-2021	25	Polyalphabetic ciphers
		26	Transposition Ciphers - keyless transposition ciphers
		19 August	**Moharam/Onam Vacation**
		20 August	Onam Vacation
		21 August	Onam Vacation
7	23-08-2021 To 28-08-2021	23 August	Onam Vacation
		24 August	Onam Vacation
		25 August	Onam Vacation
		26 August	Onam Vacation
		27 August	Onam Vacation

No of Weeks	Dates	Session	Topic
		28 August	Onam Vacation
8	30-08-2021 To 04-09-2021	30 August	Onam Vacation
		27	Transposition Ciphers -keyed transposition ciphers
		28	Stream and Black Ciphers - stream ciphers, block ciphers.
		29	Revision
		30	Class Test
9	06-09-2021 To 11-09-2021	31	Introduction, DES Structure
		32	Initial and final permutations
		33	Rounds
		34	Cipher and reverse cipher
		35	Examples
10	13-09-2021 To 18-09-2021	36	DES Analysis - Properties
		37	DES Analysis - Design criteria
		38	DES weaknesses
		39	Multiple DES - double DES
		40	Meet in the Middle Attack
11	20-09-2021 To 25-09-2021	41	Triple DES
		21 September	Sree Narayana Guru Samadhi
		42	Security of DES - brute-force attack, differential cryptanalysis, linear cryptanalysis.
		43	Revision
		44	Class Test
12	27-09-2021 To 02-10-2021	45	Principles of Public Key Cryptosystems
		46	Public Key Cryptosystem
		47	Applications of Key Cryptosystems
		48	Requirement for Public Key Cryptosystem
		2 October	**Gandhi Jayanthi**
13	04-10-2021 To 09-10-2021	49	Public Key Cryptanalysis.
		50	RSA Algorithm – Description of the Algorithm
		51	Example RSA
		52	Sample questions on RSA
		53	Computational Aspects
14	11-10-2021 To 16-10-2021	54	Security of RSA.
		55	Comparison- inclusion, verification method, relationship, duplicity
		14 October	**Mahanavami/Study Leave**
		15 October	**Vijayadasami/ Study Leave**

No of Weeks	Dates	Session	Topic
			Study Leave
15	18-10-2021 To 23-10-2021		**Study Leave**
		19 October	Milad-i-Sherif/ **Study Leave**
			Study Leave
			IV Semester University Examination
			IV Semester University Examination
			IV Semester University Examination
16	25-10-2021 To 30-10-2021		**IV Semester University Examination**
			IV Semester University Examination
			IV Semester University Examination
			IV Semester University Examination
			IV Semester University Examination
			IV Semester University Examination
17	01-11-2021 To 06-11-2021		**IV Semester University Examination**
			IV Semester University Examination
		56	Process- needs for keys
		57	Signing the digest
18	08-11-2021 To 13-11-2021	58	Service- message authentication, message integrity, nonrepudiation, confidentiality
		59	Attacks on Digital Signature- attack types;
		60	Digital Signature Schemes- RSA digital signature schemes
		4 November	**Diwali**
		61	Revision
19	15-11-2021 To 19-11-2021	62	Class Test
		63	Revision Module 1
		64	Revision Module 2
		65	Revision Module 3
		66	Revision Module 4
20	22-11-2021 To 26-11-2021	67	Revision Module 5
		68	Previous Question Paper Discussion
		69	Previous Question Paper Discussion
		70	Previous Question Paper Discussion
		71	Previous Question Paper Discussion
21	29-11-2021 To 03-12-2021	72	Previous Question Paper Discussion
			Internal Examination
			Internal Examination
			Internal Examination

No of Weeks	Dates	Session	Topic
			Internal Examination
			Internal Examination
22	06-12-2021 To 10-12-2021		**Internal Examination**
			Study Leave
			Study Leave
			Study Leave
			Study Leave
23	13-12-2021 To 17-12-2021		**Study Leave**
			Study Leave
			Study Leave
			Study Leave
			Study Leave
24	20-12-2021 To 24-12-2021		**Study Leave**
			Study Leave
			Study Leave
			Christmas Vacation
			Christmas Vacation
25			**Christmas Vacation**
			Christmas Vacation
			Christmas Vacation
			Christmas Vacation

Subject Code:	**5D03 BCA**
Subject Name:	**Database Management System**
No. of Credits:	**2**
No. of Contact Hours:	**36**
Hours per Week:	**2**
Name of the Teacher:	**Hebin Layola**

GENERIC ELECTIVE COURSE:DATABASE MANAGEMENT SYSTEM

Module 1: Introduction-Field, Record Entity Attribute. Relation, Domain, Tuple-Advantages of database systems- data models (Network model, Hierarchical Model, DBTG CODASYL model, Relational Model(E-R)) - system structure

Module 2: Database administrator- data base users, Constraints(Primary, Foreign, Candidate, Unique - Relational Algebra (Union, Intersection, Difference, Product, Project, Selection).

Module 3: SQL: Introduction To SQL Tables,Database Languages, DDL(create,alter,drop), DML(insert into,select,update,delete), DCL (In Detail), Data Types.

Module 4: SQL Functions(Different Types of Functions),Operators(Arithmetic, Relational, Logical). Sub Quires (in Detail), Clauses(Having, Group By)

Module 5: Joins/Different Types of Join Statements) View. Introduction to Sequence

TEACHING SCHEDULE

No of Weeks	Dates	Session	Topic
1	12-07-2021 To 17-07-2021	1	Introduction-Field
		2	Record Entity Attribute
		3	Relation, Domain, Tuple
2	19-07-2021 To 24-07-2021	4	Advantages of database systems
		20 July	**Bakrid- Holiday**
		5	Data models
		6	Network model
3	26-07-2021 To 31-07-2021	7	Hierarchical Model
		8	DBTG CODASYL model
		9	Relational Model
4	02-08-2021 To 07-08-2021	10	E-R
		11	system structure
		12	Class Test –Module 1
5	09-08-2021 To 14-08-2021	13	Database administrator-,
		14	data base users
6	16-08-2021 To 21-08-2021	15	Constraints
		19 August	**Moharam/Onam Vacation**
		20 August	Onam Vacation
		21 August	Onam Vacation
7	23-08-2021 To 28-08-2021	23 August	Onam Vacation
		24 August	Onam Vacation
		25 August	Onam Vacation
		26 August	Onam Vacation
		27 August	Onam Vacation
		28 August	Onam Vacation
8	30-08-2021 To 04-09-2021	30 August	Onam Vacation
		16	Primary, Foreign
9	06-09-2021 To 11-09-2021	17	Candidate, Unique
		18	Relational Algebra, Union
		19	Intersection, Product, Project
10	13-09-2021	20	Difference, Selection
		21	Class Test-Module 2

No of Weeks	Dates	Session	Topic
	To 18-09-2021	22	Introduction To SQL Tables,
11	20-09-2021 To 25-09-2021	23	Database Languages
		21 September	Sree Narayana Guru Samadhi
		24	DDL(create,alter,drop)
12	27-09-2021 To 02-10-2021	25	DML(insert into,select,update,delete)
		2 October	**Gandhi Jayanthi**
13	04-10-2021 To 09-10-2021	26	DCL, Data Types
		27	SQL Functions(Different Types of Functions), Clauses(Having, Group By)
		28	Operators(Arithmetic, Relational, Logical)
14	11-10-2021 To 16-10-2021	29	Sub Quires (in Detail),
		14 October	**Mahanavami/Study Leave**
		15 October	**Vijayadasami/ Study Leave**
			Study Leave
15	18-10-2021 To 23-10-2021		**Study Leave**
		19 October	Milad-i-Sherif/ **Study Leave**
			Study Leave
			IV Semester University Examination
			IV Semester University Examination
			IV Semester University Examination
16	25-10-2021 To 30-10-2021		**IV Semester University Examination**
			IV Semester University Examination
			IV Semester University Examination
			IV Semester University Examination
			IV Semester University Examination
			IV Semester University Examination
17	01-11-2021 To 06-11-2021		**IV Semester University Examination**
			IV Semester University Examination
		30	Joins/Different Types of Join Statements).
		4 November	Diwali
18	08-11-2021 To 13-11-2021	31	View
		32	Introduction to Sequence

No of Weeks	Dates	Session	Topic
19	15-11-2021 To 19-11-2021	33	Class Test-Module 3
		34	Class Test-Module 4
20	22-11-2021 To 26-11-2021	35	Class Test-Module 5
		36	Revision
21	29-11-2021 To 03-12-2021		**Internal Examination**
			Internal Examination
			Internal Examination
			Internal Examination
			Internal Examination
			Internal Examination
22	06-12-2021 To 10-12-2021		**Internal Examination**
			Study Leave
			Study Leave
			Study Leave
			Study Leave
23	13-12-2021 To 17-12-2021		**Study Leave**
			Study Leave
			Study Leave
			Study Leave
			Study Leave
24	20-12-2021 To 24-12-2021		**Study Leave**
			Study Leave
			Study Leave
			Christmas Vacation
			Christmas Vacation
25			**Christmas Vacation**
			Christmas Vacation
			Christmas Vacation
			Christmas Vacation
			Christmas Vacation