DON BOSCO ARTS & SCIENCE COLLEGE

ANGADIKADAVU

(Affiliated to Kannur University Approved by Government of Kerala)

ANGADIKADAVU P.O., IRITTY, KANNUR – 670706

COURSE PLAN

BCA

(2021 – 24)

SEMESTER - III

ACADEMIC YEAR - (2022-23)

III Semester BCA (2021- 24)			
SL. No.	**Name of Subjects with Code**	**Name of the Teacher**	**Duty Hours per week**
1.	**3A12BCA: Data Structures**	**Sindhu P M**	**4**
2.	**4A15BCA Lab-III: Data Structure**	**Sindhu P M**	**2**
3.	**3A13BCA:Database Management System**	**Hebin Layola**	**4**
4.	**4A15BCA Lab-III: Database Management System**	**Hebin Layola**	**1**
5.	**3B06BCA:Introduction to Microprocessors**	**Sruthi N**	**4**
6.	**3B07BCA: Java Programming**	**Fincy Cyriac**	**4**
7.	**4B11BCA Lab IV: Java Programming**	**Fincy Cyriac**	**2**
8.	**3C03AMT-BCA: Mathematics for BCA III**	**Ajeena Joseph**	**4**
	Name of Class Incharge	**Fincy Cyriac**	

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	3B07BCA: Java Programming	3B06BCA:Introduction to Microprocessors	3A13BCA:Database Management System	4A15BCA Lab-III: Data Structure	3C03AMT-BCA: Mathematics for BCA III
2	3C03AMT-BCA: Mathematics for BCA III	4B11BCA Lab IV: Java Programming	3A12BCA: Data Structures	3B06BCA:Introduction to Microprocessors	4A15BCA Lab-III: Database Management System
3	3A13BCA:Database Management System	4A15BCA Lab-III: Data Structure	3B07BCA: Java Programming	3C03AMT-BCA: Mathematics for BCA III	3A12BCA: Data Structures
4	3B07BCA: Java Programming	3A13BCA:Database Management System	3A12BCA: Data Structures	3C03AMT-BCA: Mathematics for BCA III	3B06BCA:Introduction to Microprocessors
5	3B07BCA: Java Programming	3B06BCA:Introduction to Microprocessors	4B11BCA Lab IV: Java Programming	3A13BCA:Database Management System	3A12BCA: Data Structures

Subject Code:	**3A12BCA**
Subject Name:	**DATA STRUCTURES**
No. of Credits:	**4**
No. of Contact Hours:	**72**
Hours per Week:	**4**
Name of the Teacher:	**SINDHU P M**

COURSE OUTCOME

CO1: Understand the concept of data structures and its relevance in computer science.
CO2: Familiarize with selected linear and nonlinear data structures.
CO3: Enhance skill in programming.

Unit I:

Data structures: Definition and Classification. Array: - Operations; Number of elements; Array representation in memory.Polynomial representation with arrays; Polynomial addition. Sparse matrix: Addition of sparse matrices.The concept of recursion examples – factorial and Tower of Hanoi problem. (12 Hrs)

Unit II:

Sorting algorithms: Insertion, bubble, selection, quick and merge sort; Comparison of Sort algorithms. Searching techniques: Linear and Binary search. (15 Hrs)

Unit III

Stack: Operations on stack; array representation. Application of stack- i. Postfix expression evaluation. ii. Conversion of infix to postfix expression. Queues: Operation on queue. Circular queue; Dequeue, and priority queue. Application of queue: Job scheduling. (15 Hrs)

Unit IV:

Linked list – Comparison with arrays; representation of linked list in memory. Singly linked list- structure and implementation; Operations – traversing/printing; Add new node; Delete node; Reverse a list; Search and merge two singly linked lists. Stack with singly linked list. Circular linked list – advantage. Queue as Circular linked list. Head nodes in Linked list – Singly linked list with head node – Add / delete nodes; Traversal / print. Doubly linked list – structure; Operations – Add/delete nodes; Print/traverse Advantages. (15 Hrs)

Unit V:

Tree and Binary tree: Basic terminologies and properties; Linked representation of Binary tree; Complete and full binary trees; Binary tree representation with array. Tree traversal: Recursive inorder, preorder and postorder traversals.Binary search tree - Definition and operations (Create a BST, Search, Time complexity of search). Application of binary tree: Huffmanalgorithm. (15 Hrs)

TEACHING SCHEDULE

No of Weeks	Dates	Session	Topic
1	04-07-2022 To 08-07-2022	1	Data structures: Definition and Classification
		2	Array: - Operations
		3	Number of elements
		4	Array representation in memory.
2	11-07-2022 To 15-07-2022	5	Polynomial representation with arrays
		6	Polynomial addition.
		7	Sparse matrix
		8	Addition of sparse matrices.
3	18-07-2022 To 22-07-2022	9	The concept of recursion examples – factorial
		10	Tower of Hanoi problem
		11	Tower of Hanoi problem
		12	**MODULE 1 EXM**
4	25-07-2022 To 29-07-2022	13	Sorting algorithms
		14	Insertion sort
		15	Bubble sort
		28 July	Karkidaka Vav
		16	Selection sort
5	01-08-2022 To 05-08-2022	17	Quick sort
		18	Merge sort
		19	Comparison of Sort algorithms
		20	Searching techniques
6	08-08-2022 To 12-08-2022	08 August	Muharam
		21	Linear search
		22	Binary search
		23	MODULE 2 EXAM
		24	Stack: Operations on stack
7	15-08-2022 To 19-08-2022	15 August	Independence Day
		25	Array representation
		26	Application of stack- i. Postfix expression evaluation
		18 August	Sree Krishna Jayanthi
		27	ii. Conversion of infix to postfix expression.
8	22-08-2022 To 26-08-2022	28	I internal Examination
		29	I internal Examination
		30	I internal Examination
		31	I internal Examination
		32	I internal Examination
9	29-08-2022	33	Queues: Operation on queue
		34	Circular queue

No of Weeks	Dates	Session	Topic
	To 02-09-2022	35	Dequeue
		36	Priority queue
10	05-09-2022 To 09-09-2022	05 September	ONAM VACATION
		06 September	ONAM VACATION
		07 September	ONAM VACATION
		08 September	ONAM VACATION
		09 September	ONAM VACATION
11	12-09-2022 To 16-09-2022	37	Application of queue: Job scheduling
		38	MODULE 3 EXAM
		39	Linked list – Comparison with arrays
		40	Representation of linked list in memory
12	19-09-2022 To 23-09-2022	41	Singly linked list- structure and implementation
		42	Operations – traversing/printing
		21 September	Sree Narayana Guru Samadhi
		43	Add new node; Delete node; Reverse a list
		44	Search and merge two singly linked lists.
13	26-09-2022 To 30-09-2022	45	Stack with singly linked list.
		46	Circular linked list – advantage.
		47	Queue as Circular linked list.
		48	Doubly linked list – structure;
14	03-10-2022 To 07-10-2022	49	Operations – Add/delete nodes, Print/traverse
		04 October	**Mahanavami**
		05 October	**Vijayadasami**
		50	Advantages
		51	**MODULE 4 EXAM**
15	10-10-2022 To 14-10-2022	52	Tree and Binary tree: Basic terminologies and properties
		53	Linked representation of Binary tree
		54	Complete binary tree
		55	Full binary trees
16	17-10-2022 To 21-10-2022	56	Binary tree representation with array.
		57	Tree traversal: Recursive inorder
		58	Preorder traversal
		59	Postorder traversal.
17	24-10-2022 To 28-10-2022	24 October	Deepavali
		60	**II Internal Examination**
		61	**II Internal Examination**
		62	**II Internal Examination**

No of Weeks	Dates	Session	Topic
		63	**II Internal Examination**
18	31-0-2022 To 04-11-2022	64	Binary search tree - Definition and operations
		65	Create a BST
		66	Search
		67	Time complexity of search
19	07-11-2022 To 11-11-2022	68	Application of binary tree: Huffman algorithm
		69	**MODULE 5 EXAM**
		70	**REVISION MODULE 1 & 2**
		71	**REVISION MODULE 3,4 & 5**
		72	**MODEL EXAM**
20	14-11-2022 To 18-11-2022		**III Semester University Examination**
			III Semester University Examination
			III Semester University Examination
			III Semester University Examination
			III Semester University Examination
			III Semester University Examination
21	21-11-2022 To 25-12-2022		**III Semester University Examination**
			III Semester University Examination

Subject Code:	**4A15BCA LAB-III**
Subject Name:	**Data Structures**
No. of Credits:	**2**
No. of Contact Hours:	**36**
Hours per Week:	**2**
Name of the Teacher:	**Sindhu P M**

Sample Program List

1. Add two polynomials.
2. Sequential and binary search : Print number of comparison in each case for given datasets.
3. Insertion sort: number of comparisons and exchanges for given data sets.
4. Bubble sort: Print number of comparisons and exchanges for given data sets.
5. Selection sort: Print number of comparisons and exchanges for given data sets .
6. Quick sort.
7. Stack operation: addition and deletion of elements
8. Queue operation: addition and deletion of elements
9. Conversion of infix expression to postfix.
10. Menu driven program: to add / delete elements to a circular queue. Include necessary error messages.
11. Singly linked list operations : add a new node at the beginning, at the end, after ith node, delete from beginning, end, print the list.
12. Circular linked list : add a new node at the beginning, at the end, after ith node, delete from beginning, end, print the list.
13. Doubly linked list : add a new node at the beginning, at the end, after ith node, delete from beginning, end, print the list.
14. Implement tree traversal.
15. Merge two sorted linked list.

TEACHING SCHEDULE

No of Weeks	Dates	Session	Topic
1	04-07-2022 To 08-07-2022	1	Add two polynomials.
		2	Add two polynomials.
2	11-07-2022 To 15-07-2022	3	Sequential and binary search: Print number of comparison in each case for given datasets.
		4	Sequential and binary search: Print number of comparison in each case for given datasets.
3	18-07-2022 To 22-07-2022	5	Insertion sort: number of comparisons and exchanges for given data sets.
		6	Insertion sort: number of comparisons and exchanges for given data sets.

No of Weeks	Dates	Session	Topic
4	25-07-2022 To 29-07-2022	28 July	Karkidaka Vav
		7	Bubble sort: Print number of comparisons and exchanges for given data sets.
5	01-08-2022 To 05-08-2022	8	Selection sort: Print number of comparisons and exchanges for given data sets
		9	Selection sort: Print number of comparisons and exchanges for given data sets
6	08-08-2022 To 12-08-2022	08 August	Muharam
		10	Quick sort.
		11	Quick sort.
7	15-08-2022 To 19-08-2022	15 August	Independence Day
		12	Stack operation: addition and deletion of elements
		18 August	Sree Krishna Jayanthi
8	22-08-2022 To 26-08-2022	13	I internal Examination
		14	I internal Examination
		15	I internal Examination
		16	I internal Examination
		17	I internal Examination
9	29-08-2022 To 02-09-2022	18	Queue operation: addition and deletion of elements
		19	Conversion of infix expression to postfix
10	05-09-2022 To 09-09-2022	05 September	ONAM VACATION
		06 September	ONAM VACATION
		07 September	ONAM VACATION
		08 September	ONAM VACATION
		09 September	ONAM VACATION
11	12-09-2022 To 16-09-2022	20	Conversion of infix expression to postfix
		21	Menu driven program: to add / delete elements to a circular queue. Include necessary error messages.
12	19-09-2022 To 23-09-2022	22	Menu driven program: to add / delete elements to a circular queue. Include necessary error messages.
		23	Menu driven program: to add / delete elements to a circular queue. Include necessary error messages.
		21 September	Sree Narayana Guru Samadhi
13	26-09-2022	24	Singly linked list operations : add a new node at the

No of Weeks	Dates	Session	Topic
	To 30-09-2022		beginning, at the end, after ith node, delete from beginning, end, print the list.
		25	Singly linked list operations : add a new node at the beginning, at the end, after ith node, delete from beginning, end, print the list.
14	03-10-2022 To 07-10-2022	04 October	**Mahanavami**
		05 October	**Vijayadhasami**
		26	Circular linked list : add a new node at the beginning, at the end, after ith node, delete from beginning, end, print the list.
15	10-10-2022 To 14-10-2022	27	Circular linked list : add a new node at the beginning, at the end, after ith node, delete from beginning, end, print the list.
16	17-10-2022 To 21-10-2022	28	Circular linked list : add a new node at the beginning, at the end, after ith node, delete from beginning, end, print the list.
		29	Doubly linked list : add a new node at the beginning, at the end, after ith node, delete from beginning, end, print the list
17	24-10-2022 To 28-10-2022	24 October	Deepavali
			II Internal Examination
			II Internal Examination
			II Internal Examination
			II Internal Examination
18	31-0-2022 To 04-11-2022	30	Doubly linked list : add a new node at the beginning, at the end, after ith node, delete from beginning, end, print the list
		31	Doubly linked list : add a new node at the beginning, at the end, after ith node, delete from beginning, end, print the list
19	07-11-2022 To 11-11-2022	32	Implement tree traversal
		33	Implement tree traversal
20	14-11-2022 To 18-11-2022	34	Merge two sorted linked list.
		35	Merge two sorted linked list.
		36	Model lab exam
			III Semester University Examination

No of Weeks	Dates	Session	Topic
			III Semester University Examination
			III Semester University Examination
21	21-11-2022 To 25-12-2022		**III Semester University Examination**
			III Semester University Examination
			III Semester University Examination
			III Semester University Examination
			III Semester University Examination

Subject Code:	**3A13 BCA**
Subject Name:	**DATABASE MANAGEMENT SYSTEM**
No. of Credits:	**4**
No. of Contact Hours:	**54**
Hours per Week:	**3**
Name of the Teacher:	**Hebin Layola**

COURSE OUTCOME

CO1: Understand the basic concepts in DBMS.
CO2: Skill in designing database.
CO3: Familiarization of different DBMS models.
CO4: Skill in writing queries using MySQL.

Unit I:

Introduction – purpose of Database systems. View of Data, data Models, transaction management, database structure, DBA, Data Base Users. (12 Hrs)

Unit II:

E-R model, Basic concepts; design issues; Mapping Constraints; Keys; Primary, Foreign, candidate, E-R diagram; Weak entity set; Extended E-R features. Normal forms – 1NF, 2NF, 3NF and BCNF; functional dependency, Normalization. (15 Hrs)

Unit III:

Relational model – Structure of Relational database. Relational Algebra; Fundamental Operations; Relational calculus; Tuple and domain calculus. (15 Hrs)

Unit IV:

SQL: database languages; DDL; create, alter, Drop, DML, Insert into, Select, update, Delete, DCL commands, Data types in SQL; Creation of database and user. Case study: MySQL. (15 Hrs)

Unit V:

Developing queries and sub queries; Join operations; Set operations; Integrity constraints, views, Triggers, functions and Sequences. Case study: MySQL (15 Hrs)

TEACHING SCHEDULE

No of Weeks	Dates	Session	Topic
1	04-07-2022	1	Introduction
		2	Purpose of Database systems

No of Weeks	Dates	Session	Topic
	To 08-07-2022	3	View of Data
2	11-07-2022 To 15-07-2022	4	Data Models
		5	Transaction management
		6	Database structure
3	18-07-2022 To 22-07-2022	7	DBA
		8	Data Base Users.
		9	E-R model
4	25-07-2022 To 29-07-2022	10	Basic concepts
		11	Design issues
		28 July	Karkidaka Vav
		12	Keys-Primary, Foreign, Candidate
5	01-08-2022 To 05-08-2022	13	Mapping Constraints
		14	E-R diagram;
		15	Weak entity set
6	08-08-2022 To 12-08-2022	08 August	Muharam
		16	E-R diagram;
		17	Extended E-R features
		18	Normal forms 1NF, 2NF, Normalization
7	15-08-2022 To 19-08-2022	15 August	Independence Day
		19	3NF, Functional dependency
		18 August	Sree Krishna Jayanthi
		19	BCNF
8	22-08-2022 To 26-08-2022	20	I internal Examination
		21	I internal Examination
		22	I internal Examination
			I internal Examination
			I internal Examination
9	29-08-2022 To 02-09-2022	23	Relational model
		24	Structure of Relational database
		25	Relational Algebra
10	05-09-2022 To 09-09-2022	05 September	ONAM VACATION
		06 September	ONAM VACATION
		07 September	ONAM VACATION
		08 September	ONAM VACATION

No of Weeks	Dates	Session	Topic
		09 September	ONAM VACATION
11	12-09-2022 To 16-09-2022	26	Fundamental Operations
		27	Relational calculus
		28	Tuple and domain calculus
12	19-09-2022 To 23-09-2022	29	Tuple and domain calculus.
		30	SQL
		21 September	Sree Narayana Guru Samadhi
		31	Database languages; DDL
		32	Create, Alter, Drop
13	26-09-2022 To 30-09-2022	33	DML, Insert into, Select
		34	Update, Delete
		35	DCL commands
14	03-10-2022 To 07-10-2022	36	Data types in SQL
		04 October	**Mahanavami**
		05 October	**Vijayadasami**
		37	Creation of database and user
15	10-10-2022 To 14-10-2022	38	Case study: MySQL
		39	Developing queries and sub queries
		40	Join operations
16	17-10-2022 To 21-10-2022	41	Set operations, Case study: MySQL
		42	Integrity constraints, Triggers
		43	Views, Functions and Sequences
17	24-10-2022 To 28-10-2022	24 October	Deepavali
		44	**II Internal Examination**
		45	**II Internal Examination**
		46	**II Internal Examination**
			II Internal Examination
18	31-0-2022 To 04-11-2022	47	**Study Leave**
		48	**Study Leave**
		49	**Study Leave**
19	07-11-2022 To 11-11-2022	50	**Study Leave**
		51	**Study Leave**
		52	**Study Leave**
20	14-11-2022	53	**III Semester University Examination**
		54	**III Semester University Examination**

No of Weeks	Dates	Session	Topic
	To 18-11-2022		**III Semester University Examination**
			III Semester University Examination
			III Semester University Examination
			III Semester University Examination
21	21-11-2022 To 25-12-2022		**III Semester University Examination**
			III Semester University Examination

Subject Code:	**4A15BCA Lab-III**
Subject Name:	**DATABASE MANAGEMENT SYSTEM**
No. of Credits:	**2**
No. of Contact Hours:	**36**
Hours per Week:	**2**
Name of the Teacher:	**Hebin Layola**

SQL 1

Create a sequence named 'star' to be used with student table's primary key column sno. The sequence should start with 10 & max value 99 and then create table student with field's sno, sname, sex, mark. With sno as primary key also assign suitable constraints for each attribute and insert five records into the table.

1. Alter the table by adding one more field rank.
2. Display all boy students with their name.
3. Find the average mark.
4. Create a query to display the sno and sname for all students who got more than the average mark. Sorts the results in descending order of mark.
5. Display girl student name for those who have marks greater than 40 and less than 20.

SQL 2

Create a table department with field's ename, salary, dno, dname, and place with dno as primary key and insert five records into the table.

1. Rename the field 'place' with 'city'.
2. Display the employees who got salary more than Rs.6000 and less than Rs.10000. ¬ Display total salary of the organization.
3. Display ename for those who are getting salary in between Rs.5000 and Rs.10000.
4. Create a view named 'star' with field ename, salary & place.
5. Display ename and salary, salary rounded with 10 digits.

SQL 3

Create a table department with field's dno, dname, dmanager and place with dno as primary key. Then create a table emp with fields eno, ename, job, dno, salary, with eno as primary key. Set dno as foreign key also insert five records into each table.

1. Display the ename and salary, salary with ascending order.
2. Display ename and salary for eno=20.
3. Display the manager for the accounting department.
4. Display the name, salary and manager of all employees who are getting salary > 5000.
5. Write the queries using various group functions.
6. Write the queries using various number functions.

SQL 4

Create a sequence to be used with the emp table's primary key column. The sequence should start at 60 and have a maximum value of 200. Have your sequence increment by 10 numbers. Create a table emp with fields eno, ename, job, manager, salary, with eno as primary key. Then insert values into the table.

1. Display ename, salary from emp who are getting salary more than average salary of the organization.
2. Add 20% da as extra salary to all employees. Label the column as 'new salary'.
3. Create a query to display the eno and ename for all employees who earn more than the average salary. Sort the results in descending order of salary.

4. Create a view called emp_view based on the eno, ename from emp table change the heading for the ename to ‘employ’.
5. Write a query that will display the eno and ename for all employees whose name contains a‘t’.
6. Write a script to display the following information about your sequences. Sequence name, maximum value, increment size and last number.

SQL 5

Create a table department with fields dno, ename, salary, designation, dname, place with dno as primary key, and insert values into the table.

1. Write the queries using various character functions in ename field.
2. Create a query to display the employee number and name for all employees who earn more than the average salary. Sort the results in descending order of salary.
3. display all employees who got salary between 5000 &10000
4. Display ename, salary, designation for those who got salary more than 5000 or his designation is ‘clerk’.
5. Display ename and designation those who are not a clerk or manager.
6. Display the names of all employees where the third letter of their name is an ‘a’.

SQL 6

Create a table customer with field’s cid, cname, date_of_birth, and place; then create table loan with field’s loanno, cid, bname assigning suitable constraints also create table depositor with field’s accno, cid, balance, bname assigning suitable constraints. Finally insert 5 records into each table.

1. Add one more field amount to loan table. Update each record. Display cname for cid=2.
2. Calculate Rs.150 extra for all customers having loan. The added loan amount will display in a new column.
3. Display loanno, cname and place of a customer who is residing in Kannur city.
4. Display all information from loan table for loanno 2,8,10.
5. Display all customers who have both loan and deposit.

TEACHING SCHEDULE

No of Weeks	Dates	Session	Topic
1	04-07-2022 To 08-07-2022	1	Create a sequence named ‘star’ to be used with student table’s primary key column sno. The sequence should start with 10 & max value 99 and then create table student with field’s sno, sname, sex, mark. With sno as primary key also assign suitable constraints for each attribute and insert five records into the table.
		2	Alter the table by adding one more field rank. Display all boy students with their name.
2	11-07-2022 To 15-07-2022	3	Find the average mark. Create a query to display the sno and sname for all students who got more than the average mark. Sorts the results in descending order of mark.
		4	Display girl student name for those who have marks greater than 40 and less than 20.

No of Weeks	Dates	Session	Topic
3	18-07-2022 To 22-07-2022	5	Create a table department with field's ename, salary, dno, dname, and place with dno as primary key and insert five records into the table.
		6	Rename the field 'place' with 'city'. Display the employees who got salary more than Rs.6000 and less than Rs.10000.
4	25-07-2022 To 29-07-2022	7	Display total salary of the organization. Display ename for those who are getting salary in between Rs.5000 and Rs.10000.
		28 July	Karkidaka Vav
		8	Create a view named 'star' with field ename, salary & place
5	01-08-2022 To 05-08-2022	9	Display ename and salary, salary rounded with 10 digits.
		10	Create a table department with field's dno, dname, dmanager and place with dno as primary key. Then create a table emp with fields eno, ename, job, dno, salary, with eno as primary key. Set dno as foreign key also insert five records into each table.
6	08-08-2022 To 12-08-2022	08 August	Muharam
		11	Display the ename and salary, salary with ascending order
		12	Display ename and salary for eno=20.
7	15-08-2022 To 19-08-2022	15 August	Independence Day
		18 August	Sree Krishna Jayanthi
		13	Display the manager for the accounting department
8	22-08-2022 To 26-08-2022	14	I internal Examination
		15	I internal Examination
			I internal Examination
			I internal Examination
			I internal Examination
9	29-08-2022 To 02-09-2022	16	Display the name, salary and manager of all employees who are getting salary > 5000.
		17	Write the queries using various group functions. Write the queries using various number functions.
10	05-09-2022 To 09-09-2022	05 September	ONAM VACATION
		06 September	ONAM VACATION
		07 September	ONAM VACATION
		08 September	ONAM VACATION

No of Weeks	Dates	Session	Topic
		09 September	ONAM VACATION
11	12-09-2022 To 16-09-2022	18	Create a sequence to be used with the emp table's primary key column. The sequence should start at 60 and have a maximum value of 200. Have your sequence increment by 10 numbers. Create a table emp with fields eno, ename, job, manager, salary, with eno as primary key. Then insert values into the table.
		19	Display ename, salary from emp who are getting salary more than average salary of the organization
12	19-09-2022 To 23-09-2022	20	Add 20% da as extra salary to all employees. Label the column as 'new salary'.
		21 September	Sree Narayana Guru Samadhi
		21	Create a query to display the eno and ename for all employees who earn more than the average salary. Sort the results in descending order of salary.
		22	Create a view called emp_view based on the eno, ename from emp table change the heading for the ename to 'employ'
13	26-09-2022 To 30-09-2022	23	Write a query that will display the eno and ename for all employees whose name contains a't'
		24	Write a script to display the following information about your sequences. Sequence name, maximum value, increment size and last number.
14	03-10-2022 To 07-10-2022	25	Create a table department with fields dno, ename, salary, designation, dname, place with dno as primary key, and insert values into the table. Write the queries using various character functions in ename field.
		04 October	**Mahanavami**
		05 October	**Vijayadasami**
		26	Display all employees who got salary between 5000 &10000
15	10-10-2022 To 14-10-2022	27	Create a query to display the employee number and name for all employees who earn more than the average salary. Sort the results in descending order of salary.
		28	Display ename, salary, designation for those who got salary more than 5000 or his designation is 'clerk'.
16	17-10-2022	29	Display ename and designation those who are not a clerk

No of Weeks	Dates	Session	Topic
	To 21-10-2022		or manager.
		30	Display the names of all employees where the third letter of their name is an ‘a’.
17	24-10-2022 To 28-10-2022	24 October	Deepavali
		31	**II Internal Examination**
		32	**II Internal Examination**
			II Internal Examination
			II Internal Examination
18	31-0-2022 To 04-11-2022	33	**Study Leave**
		34	**Study Leave**
			Study Leave
19	07-11-2022 To 11-11-2022		**Study Leave**
			Study Leave
			Study Leave
20	14-11-2022 To 18-11-2022	35	**III Semester University Examination**
		36	**III Semester University Examination**
			III Semester University Examination
			III Semester University Examination
			III Semester University Examination
			III Semester University Examination
21	21-11-2022 To 25-12-2022		**III Semester University Examination**
			III Semester University Examination

Subject Code:	**3B07BCA**
Subject Name:	**INTRODUCTION TO MICROPROCESSORS**
No. of Credits:	**3**
No. of Contact Hours:	**72**
Hours per Week:	**4**
Name of the Teacher:	**SRUTHI N**

Objectives :

- Familiarize with 8085 architecture.
- Familiarize with 8086 architecture.
- Skill in writing assembly language programs.
- Understand Interrupts and DMA techniques.

Module I

Introduction: History of Microprocessors, Introduction to 8-bit microprocessor - 8085, Architecture of 8085, Bus organization of 8085, Internal Data Operations and 8085 registers.

Module II

Introduction to 16-bit microprocessor – 8086, Architecture of 8086, Functional Block Diagram, Register Organization of 8086, Signal Description of 8086, Physical Memory Organization, Memory Mapped and I/O Mapped Organization, General Bus Operation, I/O Addressing Capability, Minimum and Maximum Mode 8086 System and Timings.

Module III

Addressing Modes of 8086, Machine Language Instruction Format, Assembly Language Programming of 8086, Instruction Set of 8086-Data transfer instructions, Arithmetic and Logic instructions, Branch instructions, Loop instructions, Processor Control instructions, Flag Manipulation instructions, Shift and Rotate instructions, String instructions, Assembler Directives and operators.

Module IV

Introduction to Stack, STACK Structure of 8086, Interrupts and Interrupt Service Routines, Interrupt Cycle of 8086, Non- Maskable and Maskable Interrupts.

Module V

Data transfer schemes – Programmed IO, Interrupt driven IO and DMA. Programmable Peripheral Interface 8255, DMA Controller 8257, Programmable Interrupt Controller 8259A

Text Book

Advanced Microprocessors and Peripherals – Architecture, Programming and Interfacing by A.K. Ray and K.M. Bhurchand, Tata McGraw Hill,2002 Edition

Reference Books

1. Microprocessors and Interfacing – Programming and Hardware by Douglas V Hall, 2nd Edition, Tata McGraw Hill, 2002.

TEACHING SCHEDULE

No of Weeks	Dates	Session	Topic
1	04-07-2022 To 08-07-2022	1	Introduction: History of Microprocessors,
		2	Introduction to 8-bit microprocessor - 8085,
		3	Architecture of 8085
		4	Bus organization of 8085
2	11-07-2022 To 15-07-2022	5	Internal Data Operations
		6	8085 registers.
		7	Introduction to 16-bit microprocessor – 8086
		8	Architecture of 8086
3	18-07-2022 To 22-07-2022	9	Functional Block Diagram
		10	Register Organization of 8086
		11	Signal Description of 8086
		12	Physical Memory Organization
4	25-07-2022 To 29-07-2022	13	Memory Mapped Organization
		14	I/O Mapped Organization
		15	General Bus Operation
		28 July	Karkidaka Vav
		16	I/O Addressing Capability
5	01-08-2022 To 05-08-2022	17	Minimum and Maximum Mode 8086 System and Timings.
		18	**Exam Module2**
		19	Addressing Modes of 8086
		20	Machine Language Instruction Format
6	08-08-2022 To 12-08-2022	08 August	Muharam
		21	Assembly Language Programming of 8086
		22	Instruction Set of 8086
		23	Data transfer instructions.
		24	Arithmetic instruction
7	15-08-2022 To 19-08-2022	15 August	Independence Day
		25	Logic instructions
		26	Branch instructions
		18 August	Sree Krishna Jayanthi
		27	Loop Instructions
8	22-08-2022 To 26-08-2022	28	I internal Examination
		29	I internal Examination
		30	I internal Examination
		31	I internal Examination
		32	I internal Examination
9	29-08-2022	33	Flag Manipulation instructions

No of Weeks	Dates	Session	Topic
	To 02-09-2022	34	Shift and Rotate instructions
		35	String instructions
		36	Assembler Directives
10	05-09-2022 To 09-09-2022	05 September	ONAM VACATION
		06 September	ONAM VACATION
		07 September	ONAM VACATION
		08 September	ONAM VACATION
		09 September	ONAM VACATION
11	12-09-2022 To 16-09-2022	37	Introduction to Stack
		38	STACK Structure of 8086.
		39	Interrupts and Interrupt Service Routines
		40	Interrupt Cycle of 8086
12	19-09-2022 To 23-09-2022	41	Non-Maskable and Maskable Interrupts
		42	Comparison
		21 September	Sree Narayana Guru Samadhi
		43	**Exam Module 4**
		44	Data transfer schemes
13	26-09-2022 To 30-09-2022	45	Programmed IO
		46	Interrupt driven IO
		47	DMA.
		48	Programmable Peripheral Interface 8255
14	03-10-2022 To 07-10-2022	49	Programmable Peripheral Interface 8255
		04 October	**Mahanavami**
		05 October	**Vijayadasami**
		50	DMA Controller 8257
		51	DMA Controller 8257
15	10-10-2022 To 14-10-2022	52	Programmable Interrupt Controller 8259A
		53	Exam Module 5
		54	Revision Addressing modes of 8086
		55	Revision Architecture of 8085
16	17-10-2022 To 21-10-2022	56	Revision Architecture of 8086
		57	Revision signal description of 8085
		58	Class test module1&2
		59	Class test module3 &4
17	24-10-2022 To	24 October	Deepavali
		60	**II Internal Examination**
		61	**II Internal Examination**

No of Weeks	Dates	Session	Topic
	28-10-2022	62	**II Internal Examination**
		63	**II Internal Examination**
18	31-0-2022 To 04-11-2022	64	Previous year question paper discussion
		65	Previous year question paper discussion
		67	Previous year question paper discussion
		68	Previous year question paper discussion
19	07-11-2022 To 11-11-2022	69	Previous year question paper discussion
		70	Previous year question paper discussion
		71	Previous year question paper discussion
		72	Previous year question paper discussion
20	14-11-2022 To 18-11-2022		**III Semester University Examination**
			III Semester University Examination
			III Semester University Examination
			III Semester University Examination
			III Semester University Examination
			III Semester University Examination
21	21-11-2022 To 25-12-2022		**III Semester University Examination**
			III Semester University Examination

Subject Code:	**3B07BCA**
Subject Name:	**JAVA PROGRAMMING**
No. of Credits:	**3**
No. of Contact Hours:	**72**
Hours per Week:	**4**
Name of the Teacher:	**FINCY CYRIAC**

COURSE OUTCOME

CO1: Learn the features of java
CO2: Understand the concept of error handling
CO3: Learn about multi - threading
CO4: Experience the GUI Programming.

Unit I

Introduction to Java programming : Java technology; history; java as a new paradigm; features of java; Java Development Kit; Java Language fundamentals; wrapper classes; arrays; strings; StringBuffer classes. **(12 Hrs)**

Unit II

Java classes, variables, methods and constructors; Overloading and overriding; Modifiers; Packages; Interfaces. **(15 Hrs)**

Unit III

Exception handling: Basics; handling exceptions in java; (Try, catch, finally, multiple catch, nested try, throw); Exception and inheritance; Throwing user defined exceptions; Advantages of exception handling.Multithreading: Overview; Creating threads; thread life cycle; Priorities and scheduling; synchronization; Thread groups; communication of threads; Sample programs. **(15 hrs)**

Unit IV

Files and I/O streams: Overview; Java I/O; file streams; FileInputStreamand FileOutputStream; Filter Streams; RandomAccessFile; Serialization; Applets : Introduction; Application vs. applets; Applet lifecycle; Working with Applets; The HTML APPLET tag; the java.applet Package; Sample programs. **(15 Hrs)**

Unit V

The Abstract Window Toolkit: - Basic classes in AWT; Drawing with Graphics class; Class hierarchy; Event handling;AWT controls (Labels, Buttons, checkbox, radio buttons; choice control; list, textbox, scroll bars); Layout Managers. The menu component hierarchy; Creatingmenus; Handling events from menu items. **(15 Hrs)**

Books for Study:

1. P. RadhaKrishna, Object Oriented Programming Through Java, University Press

Books for Reference:

1. E. Balagurusamy, Programming With JAVA, 5th Ed, TMH
2. Herbert Schildt, Java 2: The Complete Reference, 5th Ed, TMH

TEACHING SCHEDULE

No of Weeks	Dates	Session	Topic
1	04-07-2022 To 08-07-2022	1	Introduction to Java programming : Java technology, history
		2	Java as a new paradigm
		3	Features of java
		4	Java Development Kit
2	11-07-2022 To 15-07-2022	5	Java Language fundamentals
		6	Wrapper classes
		7	Arrays
		8	Strings, StringBuffer classes
3	18-07-2022 To 22-07-2022	9	Module 1 class test
		10	Java classes
		11	Variables
		12	Methods and constructors
4	25-07-2022 To 29-07-2022	13	Overloading and overriding
		14	Modifiers
		28 July	Karkidaka Vav
		15	Packages
5	01-08-2022 To 05-08-2022	16	Interfaces
		17	Module 2 class test
		18	Exception handling-Basics
		19	Handling exceptions in java
6	08-08-2022 To 12-08-2022	08 August	Muharam
		20	Try, catch, finally, multiple catch, nested try, throw
		21	Exception and inheritance
7	15-08-2022 To 19-08-2022	15 August	Independence Day
		22	Throwing user defined exceptions
		23	Advantages of exception handling
		18 August	Sree Krishna Jayanthi
		24	Multithreading- Overview
8	22-08-2022 To 26-08-2022	25	I internal Examination
		26	I internal Examination
		27	I internal Examination
		28	I internal Examination
		29	I internal Examination
9	29-08-2022	30	Creating threads
		31	Thread life cycle

No of Weeks	Dates	Session	Topic
	To 02-09-2022	32	Priorities and scheduling
		33	synchronization
10	05-09-2022 To 09-09-2022	05 September	ONAM VACATION
		06 September	ONAM VACATION
		07 September	ONAM VACATION
		08 September	ONAM VACATION
		09 September	ONAM VACATION
11	12-09-2022 To 16-09-2022	34	Thread groups
		35	Communication of threads
		36	Sample programs
		37	Module 3 class test
12	19-09-2022 To 23-09-2022	38	Files and I/O streams- Overview
		39	Java I/O, file streams
		21 September	Sree Narayana Guru Samadhi
		40	FileInputStream and FileOutputStream
13	26-09-2022 To 30-09-2022	41	Filter Streams
		42	RandomAccessFile, Serialization
		43	Applets-Introduction
14	03-10-2022 To 07-10-2022	44	Application vs. Applets, Applet lifecycle
		04 October	**Mahanavami**
		05 October	**Vijayadasami**
		45	Working with Applets
15	10-10-2022 To 14-10-2022	46	The HTML APPLET tag
		47	The java.applet Package
		48	Sample programs
16	17-10-2022 To 21-10-2022	49	Module 4 class test
		50	The Abstract Window Toolkit
		51	Basic classes in AWT
		52	Drawing with Graphics class
17	24-10-2022 To 28-10-2022	24 October	Deepavali
		53	**II Internal Examination**
		54	**II Internal Examination**
		55	**II Internal Examination**
		56	**II Internal Examination**
18	31-0-2022	57	Class hierarchy
		58	Event handling

No of Weeks	Dates	Session	Topic
	To 04-11-2022	59	AWT controls (Labels, Buttons, checkbox, radio buttons)
		60	AWT controls (choice control; list, textbox, scroll bars,)
19	07-11-2022 To 11-11-2022	61	Layout Managers
		62	The menu component hierarchy, Creating menus
		63	Handling events from menu items
		64	Module 5 class test
20	14-11-2022 To 18-11-2022	65	**III Semester University Examination**
		66	**III Semester University Examination**
		67	**III Semester University Examination**
		68	**III Semester University Examination**
		69	**III Semester University Examination**
		70	**III Semester University Examination**
21	21-11-2022 To 25-12-2022	71	**III Semester University Examination**
		72	**III Semester University Examination**

Subject Code:	**4B11BCA LAB IV**
Subject Name:	**JAVA PROGRAMMING**
No. of Credits:	**2**
No. of Contact Hours:	**24**
Hours per Week:	**2**
Name of the Teacher:	**FINCY CYRIAC**

1. Write a java program to perform various string operations using java class.
2. Write java program to implement interface.
3. Write java program that handles various exceptions. Use try –catch statement.
4. Write java program to implement file I/O operation using java iostreams.
5. Write java program to implement Applet life cycle.
6. Write java program to implement a calculator using suitable AWT controls.
7. Write java program to implement packages.
8. With API suport write demo programs for menu display
9. Write a java program to demonstrate threads.
10. Demonstration of FileInput Stream and FileOutputStream Classes

TEACHING SCHEDULE

No of Weeks	Dates	Session	Topic
1	04-07-2022 To 08-07-2022	1	Sample program
		2	Sample program
2	11-07-2022 To 15-07-2022	3	Write a java program to perform various string operations using java class
		4	Write a java program to perform various string operations using java class
3	18-07-2022 To 22-07-2022	5	Sample program
		6	Sample program
4	25-07-2022 To 29-07-2022	7	Write java program to implement interface.
		28 July	Karkidaka Vav
		8	Write java program to implement interface.
5	01-08-2022 To	9	Sample program
		10	Write java program that handles various exceptions. Use try –catch statement

No of Weeks	Dates	Session	Topic
	05-08-2022		
6	08-08-2022 To 12-08-2022	08 August	Muharam
		11	Write java program that handles various exceptions. Use try –catch statement
		12	Sample program
7	15-08-2022 To 19-08-2022	15 August	Independence Day
		18 August	Sree Krishna Jayanthi
		13	Java program to implement file I/O operation using java iostreams.
8	22-08-2022 To 26-08-2022	14	I internal Examination
		15	I internal Examination
		16	I internal Examination
		17	I internal Examination
		18	I internal Examination
9	29-08-2022 To 02-09-2022	19	Write java program to implement file I/O operation using java iostreams
		20	Sample program
10	05-09-2022 To 09-09-2022	05 September	ONAM VACATION
		06 September	ONAM VACATION
		07 September	ONAM VACATION
		08 September	ONAM VACATION
		09 September	ONAM VACATION
11	12-09-2022 To 16-09-2022	21	Write java program to implement Applet life cycle.
		22	Write java program to implement Applet life cycle
12	19-09-2022 To 23-09-2022	23	Sample program
		21 September	Sree Narayana Guru Samadhi
		24	Sample program
13	26-09-2022 To 30-09-2022	25	Write java program to implement a calculator using suitable AWT controls
		26	Write java program to implement a calculator using suitable AWT controls
14	03-10-2022 To	27	Sample program
		04 October	**Mahanavami**
		05 October	**Vijayadasami**

No of Weeks	Dates	Session	Topic
	07-10-2022	28	Write java program to implement packages.
15	10-10-2022 To 14-10-2022	29	Sample program
		30	API support write demo programs for menu display
16	17-10-2022 To 21-10-2022	31	API support write demo programs for menu display
		32	Sample program
17	24-10-2022 To 28-10-2022	24 October	Deepavali
			II Internal Examination
			II Internal Examination
			II Internal Examination
			II Internal Examination
18	31-0-2022 To 04-11-2022	33	Write a java program to demonstrate threads.
		34	Demonstration of FileInput Stream and FileOutputStream Classes
19	07-11-2022 To 11-11-2022	35	Demonstration of FileInput Stream and FileOutputStream Classes
		36	Model exam
20	14-11-2022 To 18-11-2022		**III Semester University Examination**
			III Semester University Examination
			III Semester University Examination
			III Semester University Examination
			III Semester University Examination
			III Semester University Examination
21	21-11-2022 To 25-12-2022		**III Semester University Examination**
			III Semester University Examination

Subject Code:	**3C03AMT-BCA**
Subject Name:	**Mathematics foe BCA III**
No. of Credits:	**4**
No. of Contact Hours:	**72**
Hours per Week:	**4**
Name of the Teacher:	**Ajeena Joseph**

Syllabus:

Unit I: First Order Ordinary Differential Equations (22 hrs)

Text: Advanced Engineering Mathematics (10th edition), E. Kreyzig.

Basic concepts, Geometric meaning of y' = f(x,y). Direction Fields(numerical method by Euler excluded), Separable ODE's(modelling excluded), Exact ODE's, Integrating factors, Linear ODE's, Bernoulli's equation(population dynamics excluded). (Sections 1.1,1.2,1.3,1.4,1.5)

Unit II: Second Order Ordinary Differential Equations (16 hrs)

Homogeneous linear ODE of second order, Homogeneous linear ODE with constant coefficients, Differential Operators, Euler- Cauchy equation, Existence and uniqueness of solution-Wronskian(statement of theorem only, proof omitted), Nonhomogeneous ODEs.(Sections 2.1 to 2.9 except 2.4,2.8)

Unit III: Laplace Transforms and its applications (20 hrs)

Laplace Tansform, Linearity, First shifting theorem, Transform of derivative and integrals, ODEs, Unit step function, Second shifting theorem, Convolution,Integral Equations, Differentiation and integration of transforms, special linear ODE's with variable coefficients, Laplace Transform, General formulas, Table of Laplace Transforms.(Sections 6.1, 6.2, 6.3, 6.5, 6.6,6.8,6.9 proof omitted)

Unit IV: Fourier Series (14 hrs)

Fourier series, arbitrary period, Even and odd functions(proof omitted)(Sections 11.1,11.2 half range excluded) Partial differential equations- Basic concepts, solution by separation of variables, use of Fourier series(Sections 12.1, 12.3)

TEACHING SCHEDULE

No of Weeks	Dates	Session	Topic
1	04-07-2022 To 08-07-2022	1	Basic concepts of differential equations
		2	Geometrical meaning
		3	Direction fields
		4	Problems
2	11-07-2022	5	Separable differential equations

No of Weeks	Dates	Session	Topic
	To 15-07-2022	6	Problems
		7	Exact differential equations and integrating factor
		8	Problems
3	18-07-2022 To 22-07-2022	9	Bernoulli's equations
		10	Homogeneous second order differential equations
		11	Problems
		12	Problems with constant coefficients
4	25-07-2022 To 29-07-2022	13	Euler Cauchy equations
		14	Problems
		15	Problems
		28 July	Karkidaka Vav
5	01-08-2022 To 05-08-2022	16	Wronskian
		17	Wronskian
		18	Non-homogeneous differential equations
		19	Problems
6	08-08-2022 To 12-08-2022	08 August	Muharam
		20	Class test
		21	Laplace transforms
		22	Problems
7	15-08-2022 To 19-08-2022	15 August	Independence Day
		23	Problems
		24	First shifting theorem
		18 August	Sree Krishna Jayanthi
8	22-08-2022 To 26-08-2022	25	I internal Examination
		26	I internal Examination
		27	I internal Examination
		28	I internal Examination
		29	I internal Examination
9	29-08-2022 To 02-09-2022	30	Unit step function
		31	Second shifting theorem
		32	Second shifting theorem
		33	Assignment
10	05-09-2022 To 09-09-2022	05 September	ONAM VACATION
		06 September	ONAM VACATION
		07 September	ONAM VACATION
		08 September	ONAM VACATION
		09 September	ONAM VACATION
11	12-09-2022	34	Convolution

No of Weeks	Dates	Session	Topic
	To 16-09-2022	35	Convolution
		36	Differentiation and integration of transforms
		37	Differentiation and integration of transforms
12	19-09-2022 To 23-09-2022	38	Problems
		39	Problems
		21 September	Sree Narayana Guru Samadhi
		40	Special linear ordinary differential equations
13	26-09-2022 To 30-09-2022	41	Special linear ordinary differential equations
		42	Problems
		43	Problems
		44	Problems
14	03-10-2022 To 07-10-2022	45	Class test
		04 October	**Mahanavami**
		05 October	**Vijayadasami**
		46	Problems
15	10-10-2022 To 14-10-2022	47	Fourier series
		48	Fourier series
		49	Periodic functions
		50	Problems
16	17-10-2022 To 21-10-2022	51	Even functions
		52	Problems
		53	Problems
		54	Odd functions
17	24-10-2022 To 28-10-2022	24 October	Deepavali
		55	**II Internal Examination**
		56	**II Internal Examination**
		57	**II Internal Examination**
		58	**II Internal Examination**
18	31-0-2022 To 04-11-2022	59	Problems
		60	Half range Fourier series
		61	Half range Fourier series
		62	Problems
19	07-11-2022 To 11-11-2022	63	Problems
		64	Problems
		65	Revision
		66	Revision
20	14-11-2022	67	**III Semester University Examination**

No of Weeks	Dates	Session	Topic
	To 18-11-2022	68	**III Semester University Examination**
		69	**III Semester University Examination**
		70	**III Semester University Examination**
		71	**III Semester University Examination**
		72	**III Semester University Examination**
21	21-11-2022 To 25-12-2022		