DON BOSCO ARTS & SCIENCE COLLEGE
ANGADIKADAVU
(Affiliated to Kannur University Approved by Government of Kerala)
ANGADIKADAVU P.O., IRITTY, KANNUR – 670706

COURSE PLAN

COMPUTER SCIENCE(BCA)

(2020 – 23)

SEMESTER - III

ACADEMIC YEAR - (2021-22)

III Semester BCA (2020 - 23)			
SL. No.	**Name of Subjects with Code**	**Name of the Teacher**	**Duty Hours per week**
1.	3A12BCA Data Structures	Sindhu PM	7
2.	3A13BCA Database Management System	Hebin Layola	6
3.	3B06BCA Introduction to Microprocessors	Sruthi N	5
4.	3B07BCA Java Programming	Fincy Cyriac	7
5.	3C03MAT Mathematics for BCA	Prija V	5
	Name of Class Incharge:Hebin Layola		

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	3A13BCA Database Management System	3C03MAT Mathematics for BCA	3B07BCA Java Programming	3B06BCA Microprocessors	3A12BCA Data Structures
2	3B07BCA Java Programming	3A13BCA Database Management System	3A12BCA Data Structures	3C03MAT Mathematics for BCA	3B06BCA Microprocessors
3	3C03MAT Mathematics for BCA	3A13BCA Database Management System	3A12BCA Data Structures	3B06BCA Microprocessors	*3B07BCA Java Programming*
4	3B07BCA Java Programming	3A13BCA Database Management System	3A12BCA Data Structures	3A12BCA Data Structures	3C03MAT Mathematics for BCA
5	3B06BCA Microprocessors	3A12BCA Data Structures	3C03MAT Mathematics for BCA	3B07BCA Java Programming	3A13BCA Database Management System
6	3A12BCA Data Structures	3B07BCA Java Programming	3A13BCA Database Management System	3B06BCA Microprocessors	3B07BCA Java Programming

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**

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 / 28 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	12-07-2021 To 17-07-2021	1	Data structures: Definition and Classification.
		2	Array: - Operations
		3	Number of elements
		4	Array representation in memory.
		5	Polynomial representation with arrays
2	19-07-2021 To 24-07-2021	6	Polynomial addition.
		20 July	**Bakrid- Holiday**
		7	Sparse matrix:
		8	Addition of sparse matrices.
		9	The concept of recursion
		10	Examples – factorial
3	26-07-2021 To 31-07-2021	11	And Tower of Hanoi problem.
		12	**Module 1 Exam**
		13	Sorting algorithms
		14	Insertion sort
		15	Bubble sort
4	02-08-2021 To 07-08-2021	16	Selection sort
		17	Selection sort
		18	Quick sort
		19	Quick sort
		20	Merge sort
5	09-08-2021 To 14-08-2021	21	Merge sort
		22	Comparison of Sort algorithms.
		23	Comparison of Sort algorithms.
		24	Searching techniques
		25	Linear and
6	16-08-2021 To 21-08-2021	26	Binary search
		27	**Module 2 Exam**
		28	Stack
		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
			Study Leave
			Study Leave
			Study Leave
			Study Leave
			Study Leave
9	06-09-2021 To 11-09-2021		Study Leave
			Study Leave
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
10	13-09-2021 To 18-09-2021		I Sem University Examination
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
11	20-09-2021 To 25-09-2021	29	Operations on stack
		21 September	Sree Narayana Guru Samadhi
		30	Array representation.
		31	Application of stack- i. Postfix expression evaluation
		32	Application of stack- i. Postfix expression evaluation
		33	Conversion of infix to postfix expression.
12	27-09-2021 To 02-10-2021	34	Conversion of infix to postfix expression.
		35	Queues
		36	Operation on queue. Circular queue
		37	Dequeue
		38	Dequeue
		2 October	**Gandhi Jayanthi**
13	04-10-2021 To 09-10-2021	39	Priority queue.
		40	Application of queue: Job scheduling
		41	Application of queue: Job scheduling
		42	**Module 3 Exam**
		43	Linked list

No of Weeks	Dates	Session	Topic
14	11-10-2021 To 16-10-2021	44	Comparison with arrays
		45	Representation of linked list in memory
		46	Singly linked list- structure and implementation
		14 October	**Mahanavami**
		15 October	**Vijayadasami**
		47	Operations – traversing/printing
15	18-10-2021 To 23-10-2021	48	Add new node, Delete node
		19 October	Milad-i-Sherif
		49	Reverse a list
		50	Search and merge two singly linked lists.
		51	Stack with singly linked list.
		52	Circular linked list – advantage
16	25-10-2021 To 30-10-2021	53	Queue as Circular linked list.
		54	Head nodes in Linked list – Singly linked list with head node – Add / delete nodes
		55	Traversal and Print.
		56	Doubly linked list – structure, Operations – Add/delete nodes ,Print/traverse Advantages
		57	**Module 4 Exam**
17	01-11-2021 To 06-11-2021	58	Tree and Binary tree
		59	Basic terminologies and properties
		60	Linked representation of Binary tree
		61	Complete and full binary trees
		62	Complete and full binary trees
18	08-11-2021 To 13-11-2021		**I Internal Examinations**
			I Internal Examinations
			I Internal Examinations
		63	Binary tree representation with array.
		64	Tree traversal
		65	Recursive in order traversals
19	15-11-2021 To 19-11-2021	66	Pre order traversals
		67	Post order traversals
			Study Leave
			Study Leave
			Study Leave
			Study Leave
20	22-11-2021 To		**II Semester University Examination**
			II Semester University Examination
			II Semester University Examination

No of Weeks	Dates	Session	Topic
	26-11-2021		**II Semester University Examination**
			II Semester University Examination
			II Semester University Examination
21	29-11-2021 To 03-12-2021	68	Binary search tree
		69	Definition and operations
		70	Application of binary tree: Huffman algorithm
		71	**Module 5 Exam**
		72	**Previous Year Question paper Discussion**
			II Internal Examination
			II Internal Examination
			II Internal Examination
			II Internal Examination
24	20-12-2021 To 24-12-2021		**II Internal Examination**
			II Internal Examination
			II Internal Examination
		23-12-2021	**Christmas Celebration**
			Christmas Vacation
25			**Christmas Vacation**
			Christmas Vacation
			Christmas Vacation
			Christmas Vacation
			Christmas Vacation

Subject Code:	4A15BCA
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
Section A:
DATA STRUCTURE

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	12-07-2021 To 17-07-2021	1	Add two polynomials.
		2	Add two polynomials
2	19-07-2021 To 24-07-2021	3	Sequential and binary search : Print number of comparison in each case for given datasets.
		20 July	**Bakrid- Holiday**
		4	Insertion sort: number of comparisons and exchanges for given data sets.
3	26-07-2021 To 31-07-2021	5	Insertion sort: number of comparisons and exchanges for given data sets.
		6	Bubble sort: Print number of comparisons and exchanges for given data sets.
4	02-08-2021 To 07-08-2021	7	Bubble sort: Print number of comparisons and exchanges for given data sets.
		8	Selection sort: Print number of comparisons and exchanges for given data sets .
5	09-08-2021 To 14-08-2021	9	Selection sort: Print number of comparisons and exchanges for given data sets .
		10	Quick sort.
6	16-08-2021 To 21-08-2021	11	Quick sort.
		12	Stack operation: addition and deletion of elements
		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
			Study Leave
			Study Leave
			Study Leave
			Study Leave

No of Weeks	Dates	Session	Topic
			Study Leave
9	06-09-2021 To 11-09-2021		Study Leave
			Study Leave
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
10	13-09-2021 To 18-09-2021		I Sem University Examination
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
11	20-09-2021 To 25-09-2021	13	Stack operation: addition and deletion of elements
		21 September	Sree Narayana Guru Samadhi
		14	Stack operation: addition and deletion of elements
12	27-09-2021 To 02-10-2021	15	Queue operation: addition and deletion of elements
		16	Queue operation: addition and deletion of elements
		2 October	**Gandhi Jayanthi**
13	04-10-2021 To 09-10-2021	17	Conversion of infix expression to postfix.
		18	Conversion of infix expression to postfix.
14	11-10-2021 To 16-10-2021	19	Conversion of infix expression to postfix.
		20	Menu driven program: to add / delete elements to a circular queue. Include necessary error messages.
		14 October	**Mahanavami**
		15 October	**Vijayadasami**
15	18-10-2021 To 23-10-2021	21	Menu driven program: to add / delete elements to a circular queue. Include necessary error messages.
		19 October	Milad-i-Sherif
		22	Singly linked list operations : add a new node at the beginning, at the end, after ith node, delete from beginning, end, print the list.
16	25-10-2021 To 30-10-2021	23	Singly linked list operations : add a new node at the beginning, at the end, after ith node, delete from beginning, end, print the list.
		24	Circular linked list : add a new node at the beginning, at the end, after ith node, delete from beginning, end, print the list.

No of Weeks	Dates	Session	Topic
17	01-11-2021 To 06-11-2021	25	Circular linked list : add a new node at the beginning, at the end, after ith node, delete from beginning, end, print the list.
		26	Circular linked list : add a new node at the beginning, at the end, after ith node, delete from beginning, end, print the list.
18	08-11-2021 To 13-11-2021		**I Internal Examinations**
			I Internal Examinations
			I Internal Examinations
		27	Doubly linked list : add a new node at the beginning, at the end, after ith node, delete from beginning, end, print the list.
		28	Doubly linked list : add a new node at the beginning, at the end, after ith node, delete from beginning, end, print the list.
19	15-11-2021 To 19-11-2021	29	Doubly linked list : add a new node at the beginning, at the end, after ith node, delete from beginning, end, print the list.
		30	Implement tree traversal.
			Study Leave
			Study Leave
			Study Leave
			Study Leave
20	22-11-2021 To 26-11-2021		**II Semester University Examination**
			II Semester University Examination
			II Semester University Examination
			II Semester University Examination
			II Semester University Examination
			II Semester University Examination
21	29-11-2021 To 03-12-2021	31	Implement tree traversal.
		32	Implement tree traversal.
22	06-12-2021 To 10-12-2021	33	Merge two sorted linked list.
		34	Merge two sorted linked list.
		35	**Model Exam 1**
23	13-12-2021 To 17-12-2021	36	**Model Exam 2**
			II Internal Examination
			II Internal Examination
			II Internal Examination

No of Weeks	Dates	Session	Topic
			II Internal Examination
24	20-12-2021 To 24-12-2021		**II Internal Examination**
			II Internal Examination
			II Internal Examination
		23-12-2021	**Christmas Celebration**
			Christmas Vacation
25			**Christmas Vacation**
			Christmas Vacation
			Christmas Vacation
			Christmas Vacation
			Christmas Vacation

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**

GENERAL AWARENESS COURSE III: 3A13BCA DATABASE MANAGEMENT SYSTEM

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	12-07-2021 To 17-07-2021	1	Introduction
		2	Purpose of Database systems
		3	View of Data
		4	Data Models
2	19-07-2021 To 24-07-2021	5	Transaction management
		20 July	**Bakrid- Holiday**
		6	Database structure
		7	DBA
		8	Data Base Users.
3	26-07-2021 To 31-07-2021	9	**MODULE 1 EXAM**
		10	E-R model
		11	Basic concepts
		12	Design issues
4	02-08-2021 To 07-08-2021	13	Keys-Primary, Foreign, Candidate
		14	Mapping Constraints
		15	E-R diagram;
		16	Weak entity set

No of Weeks	Dates	Session	Topic
5	09-08-2021 To 14-08-2021	17	E-R diagram;
		18	Extended E-R features
		19	Normal forms 1NF, 2NF
		20	3NF
6	16-08-2021 To 21-08-2021	21	BCNF
		22	Functional dependency
		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
			Study Leave
			Study Leave
			Study Leave
			Study Leave
			Study Leave
9	06-09-2021 To 11-09-2021		Study Leave
			Study Leave
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
10	13-09-2021 To 18-09-2021		I Sem University Examination
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
11	20-09-2021 To 25-09-2021	23	Normalization
		21 September	Sree Narayana Guru Samadhi
		24	**MODULE 2 EXAM**
		25	Relational model

No of Weeks	Dates	Session	Topic
		26	Structure of Relational database
12	27-09-2021 To 02-10-2021	27	Relational Algebra
		28	Fundamental Operations
		2 October	**Gandhi Jayanthi**
13	04-10-2021 To 09-10-2021	29	Fundamental Operations
		30	Relational calculus
		31	Tuple and domain calculus
		32	Tuple and domain calculus.
14	11-10-2021 To 16-10-2021	33	**MODULE 3 EXAM**
		34	SQL
		35	Database languages; DDL
		14 October	**Mahanavami**
		15 October	**Vijayadasami**
		36	Create, Alter, Drop
15	18-10-2021 To 23-10-2021	37	DML, Insert into, Select
		19 October	Milad-i-Sherif
		38	Update, Delete
		39	**MODEL EXAM**
16	25-10-2021 To 30-10-2021	40	DCL commands
		41	Data types in SQL
		42	Creation of database and user
17	01-11-2021 To 06-11-2021	43	Case study: MySQL
		44	**MODULE 4 EXAM**
		45	Developing queries and sub queries
18	08-11-2021 To 13-11-2021		**I Internal Examinations**
			I Internal Examinations
			I Internal Examinations
		46	Join operations
19	15-11-2021 To 19-11-2021	47	Set operations
			Study Leave
			Study Leave
			Study Leave
			Study Leave
20	22-11-2021 To 26-11-2021		**II Semester University Examination**
			II Semester University Examination
			II Semester University Examination
			II Semester University Examination

No of Weeks	Dates	Session	Topic
			II Semester University Examination
			II Semester University Examination
21	29-11-2021 To 03-12-2021	48	Integrity constraints
		49	Views
		50	Triggers
22	06-12-2021 To 10-12-2021	51	Functions and Sequences
		52	Case study: MySQL
		53	MODULE 5 EXAM
23	13-12-2021 To 17-12-2021	54	**Previous Year Question Paper Discussion**
			II Internal Examination
			II Internal Examination
			II Internal Examination
			II Internal Examination
24	20-12-2021 To 24-12-2021		**II Internal Examination**
			II Internal Examination
			II Internal Examination
		23-12-2021	**Christmas Celebration**
			Christmas Vacation
25			**Christmas Vacation**
			Christmas Vacation
			Christmas Vacation
			Christmas Vacation
			Christmas Vacation

Subject Code:	**3A13 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**

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.

¬ Alter the table by adding one more field rank.

¬ Display all boy students with their name.

¬ 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.

¬ 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.

¬ Rename the field 'place' with 'city'.

¬ Display the employees who got salary more than Rs.6000 and less than Rs.10000.

¬ Display total salary of the organization.

¬ Display ename for those who are getting salary in between Rs.5000 and Rs.10000.

¬ Create a view named 'star' with field ename, salary & place.

¬ 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.

¬ Display the ename and salary, salary with ascending order.

¬ Display ename and salary for eno=20.

¬ Display the manager for the accounting department.

¬ Display the name, salary and manager of all employees who are getting salary > 5000.

¬ Write the queries using various group functions.

¬ 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.

¬ Display ename, salary from emp who are getting salary more than average salary of the organization.
¬ Add 20% da as extra salary to all employees. Label the column as 'new salary'.
¬ 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.
¬ Create a view called emp_view based on the eno, ename from emp table change the heading for the ename to 'employ'.
¬ Write a query that will display the eno and ename for all employees whose name contains a't'.
¬ 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.
¬ Write the queries using various character functions in ename field.
¬ 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.
¬ display all employees who got salary between 5000 &10000
¬ Display ename, salary, designation for those who got salary more than 5000 or his designation is 'clerk'.
¬ Display ename and designation those who are not a clerk or manager.
¬ 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.
¬ Add one more field amount to loan table. Update each record. Display cname for cid=2.
¬ Calculate Rs.150 extra for all customers having loan. The added loan amount will display in a new column.
¬ Display loanno, cname and place of a customer who is residing in Kannur city.
¬ Display all information from loan table for loanno 2,8,10.
¬ Display all customers who have both loan and deposit.

TEACHING SCHEDULE

No of Weeks	Dates	Session	Topic
1	12-07-2021 To 17-07-2021	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.

No of Weeks	Dates	Session	Topic
		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.
2	19-07-2021 To 24-07-2021	4	¬ Display girl student name for those who have marks greater than 40 and less than 20.
		20 July	**Bakrid- Holiday**
		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.
3	26-07-2021 To 31-07-2021	7	¬ Display total salary of the organization. ¬ Display ename for those who are getting salary in between Rs.5000 and Rs.10000.
		8	¬ Create a view named 'star' with field ename, salary & place
		9	¬ Display ename and salary, salary rounded with 10 digits.
4	02-08-2021 To 07-08-2021	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. .
		11	¬ Display the ename and salary, salary with ascending order
		12	¬ Display ename and salary for eno=20.
5	09-08-2021 To 14-08-2021	13	¬ Display the manager for the accounting department.
		14	¬ Display the name, salary and manager of all employees who are getting salary > 5000.
		19 August	**Moharam/Onam Vacation**
		20 August	Onam Vacation
		21 August	Onam Vacation

No of Weeks	Dates	Session	Topic
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
			Study Leave
			Study Leave
			Study Leave
			Study Leave
			Study Leave
9	06-09-2021 To 11-09-2021		Study Leave
			Study Leave
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
10	13-09-2021 To 18-09-2021		I Sem University Examination
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
11	20-09-2021 To 25-09-2021	15	¬ Write the queries using various group functions.
		21 September	Sree Narayana Guru Samadhi
		16	¬ Write the queries using various number functions.
12	27-09-2021 To 02-10-2021	17	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.
		18	¬ Display ename, salary from emp who are getting salary more than average salary of the organization
		2 October	**Gandhi Jayanthi**
13	04-10-2021	19	¬ Add 20% da as extra salary to all employees. Label

No of Weeks	Dates	Session	Topic
	To 09-10-2021		the column as ‘new salary’.
		20	¬ 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.
14	11-10-2021 To 16-10-2021	21	¬ Create a view called emp_view based on the eno, ename from emp table change the heading for the ename to ‘employ’
		14 October	**Mahanavami**
		15 October	**Vijayadasami**
		22	¬ Write a query that will display the eno and ename for all employees whose name contains a‘t’
15	18-10-2021 To 23-10-2021	23	¬ Write a script to display the following information about your sequences. Sequence name, maximum value, increment size and last number.
		19 October	Milad-i-Sherif
		24	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.
16	25-10-2021 To 30-10-2021	25	¬ display all employees who got salary between 5000 &10000
		26	¬ 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.
		27	¬ Display ename, salary, designation for those who got salary more than 5000 or his designation is ‘clerk’.
17	01-11-2021 To 06-11-2021	28	¬ Display ename and designation those who are not a clerk or manager.
		29	¬ Display the names of all employees where the third letter of their name is an ‘a’.
		30	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

No of Weeks	Dates	Session	Topic
			insert 5 records into each table.
18	08-11-2021 To 13-11-2021		**I Internal Examinations**
			I Internal Examinations
			I Internal Examinations
19	15-11-2021 To 19-11-2021	31	¬ Add one more field amount to loan table. Update each record. Display cname for cid=2.
			Study Leave
			Study Leave
			Study Leave
			Study Leave
20	22-11-2021 To 26-11-2021		**II Semester University Examination**
			II Semester University Examination
			II Semester University Examination
			II Semester University Examination
			II Semester University Examination
			II Semester University Examination
21	29-11-2021 To 03-12-2021	32	¬ Calculate Rs.150 extra for all customers having loan. The added loan amount will display in a new column
		33	¬ Display loanno, cname and place of a customer who is residing in Kannur city.
22	06-12-2021 To 10-12-2021	34	¬ Display all information from loan table for loanno 2,8,10. ¬ Display all customers who have both loan and deposit.
		35	**Revision**
23	13-12-2021 To 17-12-2021	36	**Model Exam**
			II Internal Examination
			II Internal Examination
			II Internal Examination
			II Internal Examination
24	20-12-2021 To 24-12-2021		**II Internal Examination**
			II Internal Examination
			II Internal Examination
		23-12-2021	**Christmas Celebration**
			Christmas Vacation
25			**Christmas Vacation**

No of Weeks	Dates	Session	Topic
			Christmas Vacation
			Christmas Vacation
			Christmas Vacation
			Christmas Vacation

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	12-07-2021 To 17-07-2021	1	Introduction: History of Microprocessors,
		2	Introduction to 8-bit microprocessor - 8085,
		3	Architecture of 8085
		4	Bus organization of 8085
		5	Internal Data Operations
2	19-07-2021 To 24-07-2021	6	8085 registers.
		20 July	**Bakrid- Holiday**
		7	Introduction to 16-bit microprocessor – 8086
		8	Architecture of 8086
		9	Functional Block Diagram
		10	Register Organization of 8086
3	26-07-2021 To 31-07-2021	11	Signal Description of 8086
		12	Physical Memory Organization
		13	Memory Mapped Organization
		14	I/O Mapped Organization
		15	General Bus Operation
4	02-08-2021 To 07-08-2021	16	I/O Addressing Capability
		17	Minimum and Maximum Mode 8086 System and Timings.
		18	**Exam Module2**
		19	Addressing Modes of 8086
		20	Machine Language Instruction Format
5	09-08-2021 To 14-08-2021	21	Assembly Language Programming of 8086
		22	Instruction Set of 8086
		23	Data transfer instructions.
		24	Arithmetic instruction
		25	Logic instructions
6	16-08-2021 To 21-08-2021	26	Branch instructions
		27	Loop instructions
		28	Processor Control instructions
		19 August	**Moharam/Onam Vacation**
		20 August	Onam Vacation
		21 August	Onam Vacation
7	23-08-2021	23 August	Onam Vacation
		24 August	Onam Vacation

No of Weeks	Dates	Session	Topic
	To 28-08-2021	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
			Study Leave
			Study Leave
			Study Leave
			Study Leave
			Study Leave
9	06-09-2021 To 11-09-2021		Study Leave
			Study Leave
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
10	13-09-2021 To 18-09-2021		I Sem University Examination
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
11	20-09-2021 To 25-09-2021	29	Flag Manipulation instructions
		21 September	Sree Narayana Guru Samadhi
		30	Flag Manipulation instructions
		31	Shift and Rotate instructions
		32	String instructions
		33	Assembler Directives
12	27-09-2021 To 02-10-2021	34	Operators
		35	Introduction to Stack
		36	STACK Structure of 8086.
		37	Interrupts and Interrupt Service Routines
		38	Introduction to Stack
		2 October	**Gandhi Jayanthi**
13	04-10-2021 To 09-10-2021	39	Interrupt Cycle of 8086
		40	Non-Maskable and Maskable Interrupts
		41	**Exam Module 4**
		42	Data transfer schemes

No of Weeks	Dates	Session	Topic
		43	Programmed IO
14	11-10-2021 To 16-10-2021	44	Interrupt driven IO
		45	DMA.
		46	Programmable Peripheral Interface 8255
		14 October	**Mahanavami**
		15 October	**Vijayadasami**
		47	DMA Controller 8257
15	18-10-2021 To 23-10-2021	48	DMA Controller 8257
		19 October	Milad-i-Sherif
		49	Programmable Interrupt Controller 8259A
		50	Exam Module 5
		51	Revision Addressing modes of 8086
		52	Revision Architecture of 8085
16	25-10-2021 To 30-10-2021	53	Revision Architecture of 8086
		54	Revision signal description of 8085
		55	Revision signal description of 8086
		56	Revision register organization of 8086
		57	Revision instruction set of 8086
17	01-11-2021 To 06-11-2021	58	Revision stack structure of 8086
		59	Revision interrupt cycle of 8086
		60	Revision data transfer scheme
		61	Class test module1&2
		62	Class test module3 &4
18	08-11-2021 To 13-11-2021		**I Internal Examinations**
			I Internal Examinations
			I Internal Examinations
		63	Revision DMA
		64	Previous year question paper discussion
		65	Previous year question paper discussion
19	15-11-2021 To 19-11-2021	66	Previous year question paper discussion
		67	Revision
			Study Leave
			Study Leave
			Study Leave
			Study Leave
20	22-11-2021 To		**II Semester University Examination**
			II Semester University Examination
			II Semester University Examination

No of Weeks	Dates	Session	Topic
	26-11-2021		**II Semester University Examination**
			II Semester University Examination
			II Semester University Examination
21	29-11-2021 To 03-12-2021	68	Revision
		69	Revision
		70	Revision
		71	Revision
		72	**Previous Year Question paper Discussion**
			II Internal Examination
			II Internal Examination
			II Internal Examination
			II Internal Examination
24	20-12-2021 To 24-12-2021		**II Internal Examination**
			II Internal Examination
			II Internal Examination
		23-12-2021	**Christmas Celebration**
			Christmas Vacation
25			**Christmas Vacation**
			Christmas Vacation
			Christmas Vacation
			Christmas Vacation
			Christmas Vacation

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**

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)

TEACHING SCHEDULE

No of Weeks	Dates	Session	Topic
1	12-07-2021 To	1	Introduction to Java programming
		2	Java technology
		3	History

No of Weeks	Dates	Session	Topic
	17-07-2021	4	Java as a new paradigm
		5	Features of java
2	19-07-2021 To 24-07-2021	6	Java Development Kit
		20 July	**Bakrid- Holiday**
		7	Java Language fundamentals
		8	Java Language fundamentals
		9	Wrapper classes, Arrays
		10	Strings
3	26-07-2021 To 31-07-2021	11	StringBuffer classes
		12	**Module 1 class test**
		13	Java classes
		14	Java classes
		15	Variables
4	02-08-2021 To 07-08-2021	16	Methods
		17	Methods
		18	Constructors
		19	Constructors
		20	Overloading
5	09-08-2021 To 14-08-2021	21	Overriding
		22	Modifiers
		23	Packages
		24	Packages
		25	Interfaces
6	16-08-2021 To 21-08-2021	26	Interfaces
		27	**Module 2 class test**
		28	Exception handling- Basics
		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
			Study Leave
			Study Leave

No of Weeks	Dates	Session	Topic
	04-09-2021		Study Leave
			Study Leave
			Study Leave
9	06-09-2021 To 11-09-2021		Study Leave
			Study Leave
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
10	13-09-2021 To 18-09-2021		I Sem University Examination
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
11	20-09-2021 To 25-09-2021	29	Handling exceptions in java
		21 September	Sree Narayana Guru Samadhi
		30	Try, catch, finally, multiple catch, nested try, throw
		31	Exception and inheritance
		32	Throwing user defined exceptions
		33	Advantages of exception handling
12	27-09-2021 To 02-10-2021	34	Multithreading Overview
		35	Creating threads
		36	Thread life cycle
		37	Priorities and scheduling
		38	Synchronization
		2 October	**Gandhi Jayanthi**
13	04-10-2021 To 09-10-2021	39	Thread groups
		40	Communication of threads
		41	Sample programs
		42	**Module 3 class test**
		43	Files and I/O streams- Overview
14	11-10-2021 To 16-10-2021	44	Java I/O
		45	File streams
		46	FileInputStreamand FileOutputStream
		14 October	**Mahanavami**
		15 October	**Vijayadasami**
		47	Filter Streams

No of Weeks	Dates	Session	Topic
15	18-10-2021 To 23-10-2021	48	RandomAccessFile
		19 October	Milad-i-Sherif
		49	Serialization
		50	Applets - Introduction
		51	Application vs. applets
		52	Applet lifecycle
16	25-10-2021 To 30-10-2021	53	Working with Applets
		54	The HTML APPLET tag
		55	The java.applet Package
		56	Sample programs
		57	**Module 4 class test**
17	01-11-2021 To 06-11-2021	58	The Abstract Window Toolkit
		59	Basic classes in AWT
		60	Drawing with Graphics class
		61	Class hierarchy
		62	Event handling
18	08-11-2021 To 13-11-2021		**I Internal Examinations**
			I Internal Examinations
			I Internal Examinations
		63	Event handling
		64	AWT controls -Labels, Buttons
		65	AWT controls -checkbox, radio buttons, choice control
19	15-11-2021 To 19-11-2021	66	AWT controls - list, textbox, scroll bars
		67	Layout Managers
			Study Leave
			Study Leave
			Study Leave
			Study Leave
20	22-11-2021 To 26-11-2021		**II Semester University Examination**
			II Semester University Examination
			II Semester University Examination
			II Semester University Examination
			II Semester University Examination
			II Semester University Examination
21	29-11-2021 To 03-12-2021	68	Layout Managers
		69	The menu component hierarchy
		70	Creatingmenus
		71	Handling events from menu items

No of Weeks	Dates	Session	Topic
		72	**Module 5 class test**
			II Internal Examination
			II Internal Examination
			II Internal Examination
			II Internal Examination
24	20-12-2021 To 24-12-2021		**II Internal Examination**
			II Internal Examination
			II Internal Examination
		23-12-2021	**Christmas Celebration**
			Christmas Vacation
25			**Christmas Vacation**
			Christmas Vacation
			Christmas Vacation
			Christmas Vacation
			Christmas Vacation

Subject Code:	4B11BCA LAB IV:
Subject Name:	JAVA PROGRAMMING
No. of Credits:	2
No. of Contact Hours:	36
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	12-07-2021 To 17-07-2021	1	Sample program
		2	Sample program
2	19-07-2021 To 24-07-2021	3	Write a java program to perform various string operations using java class
		20 July	**Bakrid- Holiday**
		4	Write a java program to perform various string operations using java class
3	26-07-2021 To 31-07-2021	5	Write a java program to perform various string operations using java class
		6	Sample program
4	02-08-2021 To 07-08-2021	7	Sample program
		8	Write java program to implement interface.
5	09-08-2021 To	9	Sample program
		10	Sample program

No of Weeks	Dates	Session	Topic
	14-08-2021		
6	16-08-2021 To 21-08-2021	11	Write java program that handles various exceptions. Use try –catch statement
		12	Write java program that handles various exceptions. Use try –catch statement
		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
			Study Leave
			Study Leave
			Study Leave
			Study Leave
			Study Leave
9	06-09-2021 To 11-09-2021		Study Leave
			Study Leave
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
10	13-09-2021 To 18-09-2021		I Sem University Examination
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
11	20-09-2021 To 25-09-2021	13	Sample program
		21 September	Sree Narayana Guru Samadhi
		14	Sample program
12	27-09-2021	15	Write java program to implement file I/O operation using java iostreams

No of Weeks	Dates	Session	Topic
	To 02-10-2021	16	Write java program to implement file I/O operation using java iostreams
		2 October	**Gandhi Jayanthi**
13	04-10-2021 To 09-10-2021	17	Sample program
		18	Sample program
14	11-10-2021 To 16-10-2021	19	Write java program to implement Applet life cycle.
		20	Write java program to implement Applet life cycle
		14 October	**Mahanavami**
		15 October	**Vijayadasami**
15	18-10-2021 To 23-10-2021	21	Sample program
		19 October	Milad-i-Sherif
		22	Sample program
16	25-10-2021 To 30-10-2021	23	Write java program to implement a calculator using suitable AWT controls
		24	Write java program to implement a calculator using suitable AWT controls
17	01-11-2021 To 06-11-2021	25	Write java program to implement a calculator using suitable AWT controls
		26	Sample program
18	08-11-2021 To 13-11-2021		**I Internal Examinations**
			I Internal Examinations
			I Internal Examinations
		27	Write java program to implement packages
		28	Write java program to implement packages
19	15-11-2021 To 19-11-2021	29	Sample program
		30	With API suport write demo programs for menu display
			Study Leave
			Study Leave
			Study Leave
			Study Leave
20	22-11-2021 To 26-11-2021		**II Semester University Examination**
			II Semester University Examination
			II Semester University Examination
			II Semester University Examination
			II Semester University Examination
			II Semester University Examination

No of Weeks	Dates	Session	Topic
21	29-11-2021 To 03-12-2021	31	Sample program
		32	Write a java program to demonstrate threads
22	06-12-2021 To 10-12-2021	33	Sample program
		34	Demonstration of FileInputStream and FileOutputStream Classes
		35	Demonstration of FileInputStream and FileOutputStream Classes
23	13-12-2021 To 17-12-2021	36	**Model Exam**
			II Internal Examination
			II Internal Examination
			II Internal Examination
			II Internal Examination
24	20-12-2021 To 24-12-2021		**II Internal Examination**
			II Internal Examination
			II Internal Examination
		23-12-2021	**Christmas Celebration**
			Christmas Vacation
25			**Christmas Vacation**
			Christmas Vacation
			Christmas Vacation
			Christmas Vacation
			Christmas Vacation

Subject Code:	**3C03 AMT**
Subject Name:	**Mathematics for BCA III**
No. of Credits:	**4**
No. of Contact Hours:	**72**
Hours per Week:	**4**
Name of the Teacher:	**PRIJA V**

3C03 AMT-BCA: Mathematics for BCA III

UnitI - First Order Ordinary Differential Equations (22 hrs)
Text: Advanced Engineering Mathematics (10th edition), E. Kreyszig, Wiley, 2015

Basic concepts, Geometrical meaning of $y'=f(x, y)$. Direction Fields (numerical method by Euler excluded), Separable ODEs (modelling excluded) Exact ODEs, Integrating Factors, Linear ODEs, Bernoulli Equation (population dynamics excluded
(Sections 1.1, 1.2, 1.3, 1.4, 1.5)

Unit II - Second Order Ordinary Differential Equations (16 hrs)
Text: Advanced Engineering Mathematics (10th edition), E. Kreyszig, Wiley, 2015

Homogeneous Linear ODEs of second order, Homogeneous Linear ODEs with constant coefficients, Differential Operators, Euler-Cauchy Equation, Existence and Uniqueness of Solutions – Wronskian (statement of theorems 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)
Text: Advanced Engineering Mathematics (10th edition), E. Kreyszig, Wiley, 2015

Laplace Transform, Linearity, first shifting theorem (s-Shifting), Transforms of Derivatives and Integrals, ODEs, Unit step Function, second shifting theorem (t- Shifting), Convolution, Integral Equations,Differentiation and integration of Transforms, special linear ODE's with variable coefficients, Laplace Transform, General Formulas, Table of Laplace Transforms.
(Chapter 6 Sections 6.1, 6.2, 6.3, 6.5, 6.6, 6.8, 6.9 (Proofs omitted))

Unit IV Fourier Series (14 hours)
Text: Advanced Engineering Mathematics (10th edition), E. Kreyszig, Wiley, 2015

Fourier series, arbitrary period, Even and Odd functions.(Proofs omitted)
(Chapter 11 Sections 11.1, 11.2 (half range expansions excluded))

References

1. Higher Engineering Mathematics (41st edition), B.S. Grewal, Khanna

Pub.
2. Elementary Differential Equations and Boundary Value Problems, W.E. Boyce and R.C. Deprima, Wiley
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3. Differential Equations, S.L. Ross, Wiley
4. An Introduction to Ordinary Differential Eqution, E.A. Coddington, Printice Hall
5. A Textbook of Engineering Mathematics, N.P. Bali and Manish Goyal, Laxmi Pub.

TEACHING SCHEDULE

No of Weeks	Dates	Session	Topic
1	12-07-2021 To 17-07-2021	1	Unit I: First Order ODEs-Introduction
		2	Basic concepts
		3	Theorems based on Existence and uniquenes of solution.
		4	Separable ODEs
		5	Examples
2	19-07-2021 To 24-07-2021	6	Equations reducible to separable form-examples.
		20 July	**Bakrid- Holiday**
		7	Exact ODEs- examples.
		8	Integrating factors,Non-exact differential equations.
		9	Exercise questions.
3	26-07-2021 To 31-07-2021	10	Exercise questions.
		11	Class Test.
		12	Linear ODEs-Examples
		13	Bernoulli equation-Examples
		14	Exercise questions.
4	02-08-2021 To 07-08-2021	15	Class test.
		16	Assignment.
		17	Existence and uniqueness of solutions
		18	Exercise questions.
		19	Second-Order Linear ODEs- Examples
5	09-08-2021 To 14-08-2021	20	Exercise questions.
		21	Homogeneous Linear ODEs of Second Order- Examples
		22	Class test.
		23	Homogeneous Linear ODEs with Constant Coefficients- Examples
		24	Differential Operators- Examples
6	16-08-2021	25	Exercise questions.

No of Weeks	Dates	Session	Topic
	To 21-08-2021	26	Euler-Cauchy Equations- Examples
		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
			Study Leave
			Study Leave
			Study Leave
			Study Leave
			Study Leave
9	06-09-2021 To 11-09-2021		Study Leave
			Study Leave
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
10	13-09-2021 To 18-09-2021		I Sem University Examination
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
			I Sem University Examination
11	20-09-2021 To 25-09-2021	27	Statement of Existence and Uniqueness theorem for initial value problems- Examples
		21 September	Sree Narayana Guru Samadhi
		28	Exercise questions.
12	27-09-2021 To 02-10-2021	29	Assignment.
		30	Exercise questions
		31	Nonhomogeneous ODEs
		32	Class test.
		2 October	**Gandhi Jayanthi**
13	04-10-2021	33	Method of undetermined coefficients- Examples

No of Weeks	Dates	Session	Topic
	To 09-10-2021	34	Exercise questions.
		35	Exercise questions.
		36	Solution by Variation of Parameters- Examples
14	11-10-2021 To 16-10-2021	37	Exercise questions.
		38	Solution by Variation of Parameters- Examples
		39	Exercise questions.
		14 October	**Mahanavami**
		15 October	**Vijayadasami**
		40	Exercise questions.
15	18-10-2021 To 23-10-2021	41	Class test.
		19 October	Milad-i-Sherif
		42	Ubit III-Introduction.
		43	Laplace Transform-definitions, Examples.
		44	Exercise questions.
		45	Exercise questions.
16	25-10-2021 To 30-10-2021	46	Assignment.
		47	Seminar.
		48	Exercise questions.
		49	Inverse Transform -definitions, Examples.
		50	Exercise questions.
17	01-11-2021 To 06-11-2021	51	Linearity, s-Shifting- definitions, Examples.
		52	Exercise questions.
		53	Class test.
		54	Transforms of Derivatives and Integrals- definitions, Examples
		55	Exercise questions.
18	08-11-2021 To 13-11-2021		**I Internal Examinations**
			I Internal Examinations
			I Internal Examinations
		56	ODEs- definitions, Examples.
		57	Exercise questions
		58	Exercise questions.
19	15-11-2021 To 19-11-2021	59	Unit Step Function- definitions, Examples.
		60	Exercise questions.
			Study Leave
			Study Leave
			Study Leave
			Study Leave
20	22-11-2021		**II Semester University Examination**

No of Weeks	Dates	Session	Topic
	To 26-11-2021		**II Semester University Examination**
			II Semester University Examination
			II Semester University Examination
			II Semester University Examination
			II Semester University Examination
21	29-11-2021 To 03-12-2021	61	Fourier series- definitions, Examples.,
		62	Exercise questions.
		63	Exercise questions.
		64	Exercise questions.
		65	Arbitrary period- definitions, Examples.,
		66	Exercise questions.
22	06-12-2021 To 10-12-2021	67	Exercise questions.
		68	Even and Odd functions- definitions, Examples.,
		69	Exercise questions.
		70	Exercise questions.
		71	Revision.
23	13-12-2021 To 17-12-2021	72	Revision.
			II Internal Examination
			II Internal Examination
			II Internal Examination
			II Internal Examination
24	20-12-2021 To 24-12-2021		**II Internal Examination**
			II Internal Examination
			II Internal Examination
		23-12-2021	**Christmas Celebration**
			Christmas Vacation
25			**Christmas Vacation**
			Christmas Vacation
			Christmas Vacation
			Christmas Vacation
			Christmas Vacation