DON BOSCO ARTS & SCIENCE COLLEGE

ANGADIKADAVU

(Affiliated to Kannur University Approved by Government of Kerala)

ANGADIKADAVU P.O., IRITTY, KANNUR – 670706

COURSE PLAN

BCA

(2019 – 22)

SEMESTER - III

ACADEMIC YEAR - (2020-21)

III Semester BCA Department (2019 - 22)			
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	Sindhu PM	6
3.	3B06BCA Introduction to Microprocessors	Sruthi N	4
4.	3B07BCA Java Programming	Fincy Cyriac	6
5.	3C03MAT Mathematics for BCA	Remya Raj &Prija V	4
	Name of Class Incharge	Sruthi N	

TIME TABLE

Day	09.50 Am - 10.45 Am	10.45 Am -11.40 Am	11.55 Am -12.50 Pm	01.40 Pm - 02.35 Pm	02.35 Pm - 03.30 Pm
1	3A13BCA Database Managemen t System	3B06BCA Microproc essors	3B07BCA Java Programming	3C03MAT Mathematics for BCA	3A12BCA Data Structures
2	3C03MAT Mathematics for BCA	3B07BCA Java Programming	3B06BCA Microproce ssors	3A13BC A Database Managem ent System	3A12BCA Data Structures-Lab
3	3B06BCA Microproces sors	3B07BCA Java Programming-Lab	3A13BCA Database Management System	3C03MAT Mathematics for BCA	3B07BCA Java Programm ing
4	3B07BCA Java Programming	3A12BCA Data Structures	3B07BCA Java Programming-Lab	3A13BCA Database Management System Lab	3A12BCA Data Structures
5	3A13BCA Database Managemen t System	3B06BCA Microproc essors	3A12BCA Data Structures	3A12BCA Data Structures-lab	3C03MAT Mathemati cs for BCA

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**

GENERAL AWARENESS COURSE II: 3A12BCA DATA STRUCTURES

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 Hanoiproblem.

(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 in order, preorder and post order traversals. Binary search tree -Definition and operations (Create a BST, Search, Time complexity of search).

Application of binary tree: Huffman algorith **(15 Hrs)**

TEACHING SCHEDULE

No of Weeks	Dates	Session	Topic
1	15-06-2020 To 19-06-2020	1	Data structures: Definition
		2	and Classification
		3	Array- Operations
		4	Number of elements
2	22-06-2020 To 26-06-2020	5	Array representation in memory
		6	Polynomial representation with arrays
		7	Polynomial addition
		8	Sparse matrix: Addition of sparse matrices.
3	29-06-2020 To 03-07-2020	9	The concept of recursion. examples– factorial
		10	Tower of Hanoi problem
		11	**MODULE 1 EXAM**
		12	Sorting algorithms: Insertion
		03 July	St. Thomas Day
		13	Selection
		14	Quick and
		15	Merge sort
5	13-07-2020 To 17-07-2020	16	Comparison of Sort algorithms.
		17	Searching techniques: Linear
		18	and Binary search.
		19	**MODULE 2 EXAM**
6	20-07-2020 To 24-07-2020	20 July	**Karkkidaka Vavu**
		20	Stack: Operations on stack
		21	Array representation
		22	Application of stack
		23	i. Postfix expression evaluation
		31 July	Bakrid

8	03-08-2020 To 07-08-2020	24	i. Postfix expression evaluation
		25	ii. Conversion of infix to postfix expression.
		26	ii. Conversion of infix to postfix expression.
		27	Queues
9	10-08-2020 To 14-08-2020	28	Operation on queue.
		29	Circular queue
		30	Circular queue
10	17-08-2020 To 21-08-2020	31	And priority queue.
		32	Application of queue: Job Scheduling
		33	Application of queue: Job Scheduling
		34	Module 3 Exam
11	24-08-2020 To 28-08-2020	35	Revision Module 1
		36	Revision Module 2
		37	Revision Module 2
		38	Revision Module 3
		28 August	**Ayyankali Jayanthi**
12	31-08-2020 To 04-09-2020		**Onam Holiday**
			Onam Holiday
			Onam Holiday
			Onam Holiday
			Onam Holiday
13	07-09-2020 To 11-09-2020	39	Linked list – Comparison with arrays
		40	Representation of linked list in memory
		41	Singly linked list- structure and implementation
		10 September	**Sreekrishna Jayanthi**
		42	Operations – traversing/printing
14	14-09-2020 To 18-09-2020	43	Add new node
		44	Delete node;
		45	Reverse a list
		46	Search and merge two singly linked lists.
15	21-09-2020 To 25-09-2020	**21 September**	**Sreenarayana Guru Samadhi**
			3rd Semester 1st Internal Exam
			3rd Semester 1st Internal Exam
			3rd Semester 1st Internal Exam
			3rd Semester 1st Internal Exam

16	28-09-2020 To 02-10-2020		**3rd Semester 1st Internal Exam**
			3rd Semester 1st Internal Exam
		47	Stack with singly linked list.
		48	Circular linked list – advantage.
		49	Queue as Circular linked list.
17	05-10-2020To 09-10-2020	50	Head nodes in Linked list
		51	Singly linked list with head node – Add / delete nodes
		52	Singly linked list with head node – Add / delete nodes
		53	Traversal / print.
18	12-10-2020 To 16-10-2020	54	Doubly linked list – structure;
		55	Operations – Add/delete nodes
		56	Operations – Add/delete nodes
		57	Print/traverse. Advantages.
19	19-10-2020 To 23-10-2020	58	**MODULE 4 EXAM**
		59	Tree and Binary tree: Basic terminologies and properties..
		60	Linked representation of Binary tree
		61	Complete and full binary trees
20	26-10-2020 To 30-10-2020	26 October	**Vijayadasami**
		62	Binary tree representation with array.
		29 October	**Miladi-I-Sherif**
		63	Tree traversal: Recursive in order, pre order and post order traversals.
		64	Tree traversal: Recursive in order, pre order and post order traversals.
21	02-11-2020 To 06-11-2020	65	Binary search tree -Definition and operations (Create a BST, Search, Time complexity of search).
		66	Binary search tree -Definition and operations (Create a BST, Search, Time complexity of search).
		67	Application of binary tree: Huffman algorithm
		68	Application of binary tree: Huffman algorithm
22	09-11-2020 To 13-11-2020	69	**MODULE 5 EXAM**
		70	**REVISION MODULE 1 &2**
		71	**REVISION MODULE 3&4**
		72	**REVISION MODULE 5**
			Study Leave
23	16-11-2020		**Study Leave**
			Study Leave

	To 20-11-2020		**3rd Semester 2nd Internal Exam**
			3rd Semester 2nd Internal Exam
			3rd Semester 2nd Internal Exam
24	23-11-2020 To 27-11-2020		**3rd Semester 2nd Internal Exam**
			3rd Semester 2nd Internal Exam
			3rd Semester 2nd Internal Exam
			Study Leave
			Study Leave
25	30-11-2020 To 04-12-2020		**Study Leave**
			Study Leave
			Study Leave
			Study Leave
			Study Leave
26	07-12-2020 To 11-12-2020		**Study Leave**
			Study Leave
			Study Leave
			Study Leave
			Study Leave
27	14-12-2020		**3rd Semester University Examination Begins**

Subject Code:	**3A13BCA**
Subject Name:	**DATABASE MANAGEMENT SYSTEM**
No. of Credits:	**4**
No. of Contact Hours:	**72**
Hours per Week:	**4**
Name of the Teacher:	**SINDHU P M**

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	15-06-2020 To 19-06-2020	1	Introduction
		2	Purpose of Database systems
		3	View of Data
		4	View of Data
2	22-06-2020 To 26-06-2020	5	Data Models
		6	Data Models
		7	Transaction management
		8	Transaction management
3	29-06-2020 To 03-07-2020	9	database structure
		10	DBA
		11	Data Base Users.
		12	**MODULE 1 EXAM**
		03 July	St. Thomas Day
4	06-07-2020 To 10-07-2020	13	E-R model
		14	Basic concepts
		15	Design issues
		16	Mapping Constraints
5	13-07-2020 To 17-07-2020	17	Keys-Primary, Foreign, Candidate
		18	E-R diagram;
		19	E-R diagram;
		20	Weak entity set
6	20-07-2020 To 24-07-2020	20 July	**Karkkidaka Vavu**
		21	Extended E-R features.
		22	Normal forms 1NF, 2NF
		23	3NF
		24	and BCNF.
7	27-07-2020 To 31-07-2020	25	Functional dependency
		26	Normalization
		27	Normalization
		28	**MODULE 2 EXAM**
		31 July	Bakrid

8	03-08-2020 To 07-08-2020	29	Relational model
		30	Structure of Relational database
		31	Structure of Relational database
		32	Relational Algebra
9	10-08-2020 To 14-08-2020	33	Relational Algebra
		34	Fundamental Operations
		35	Fundamental Operations
		36	Relational calculus
10	17-08-2020 To 21-08-2020	37	Relational calculus
		38	Tuple and domain calculus.
		39	Tuple and domain calculus.
		40	Tuple and domain calculus.
11	24-08-2020 To 28-08-2020	41	**MODULE 3 EXAM**
		42	**REVISION MODULE 1**
		43	**REVISION MODULE 2**
		44	**REVISION MODULE 3**
		28 August	**Ayyankali Jayanthi**
12	31-08-2020 To 04-09-2020		**Onam Holiday**
			Onam Holiday
			Onam Holiday
			Onam Holiday
			Onam Holiday
13	07-09-2020 To 11-09-2020	45	SQL
		46	Database languages; DDL
		47	Create, Alter, Drop
		10 September	**Sreekrishna Jayanthi**
		48	Create, Alter, Drop
14	14-09-2020 To 18-09-2020	49	DML, Insert into, Select
		50	DML, Insert into, Select
		51	Update, Delete
		52	**MODEL EXAM**
15	21-09-2020 To 25-09-2020	**21 September**	**Sreenarayana Guru Samadhi**
			3rd Semester 1st Internal Exam
			3rd Semester 1st Internal Exam
			3rd Semester 1st Internal Exam

			3rd Semester 1st Internal Exam
16	28-09-2020 To 02-10-2020		**3rd Semester 1st Internal Exam**
			3rd Semester 1st Internal Exam
		53	DCL commands
		54	Data types in SQL
		55	Creation of database and user.
17	05-10-2020 To 09-10-2020	56	Case study: MySQL
		57	Case study: MySQL
		58	**MODULE 4 EXAM**
		59	Developing queries and sub queries
18	12-10-2020 To 16-10-2020	60	Developing queries and sub queries
		61	Join operations
		62	Join operations
		63	Set operations
19	19-10-2020 To 23-10-2020	64	Set operations
		65	Integrity constraints
		66	Views
		67	Triggers
20	26-10-2020 To 30-10-2020	26 October	**Vijayadasami**
		68	Functions and Sequences.
		29 October	**Miladi-I-Sherif**
		69	Case study: MySQL
		70	**MODULE 5 EXAM**
22	09-11-2020 To 13-11-2020	71	**REVISION MODULE 1 , 2 & 3**
		72	**REVISION MODULE 4& 5**
			Study Leave
23	16-11-2020 To 20-11-2020		**Study Leave**
			Study Leave
			3rd Semester 2nd Internal Exam
			3rd Semester 2nd Internal Exam
			3rd Semester 2nd Internal Exam
24	23-11-2020 To 27-11-2020		**3rd Semester 2nd Internal Exam**
			3rd Semester 2nd Internal Exam
			3rd Semester 2nd Internal Exam
			Study Leave
			Study Leave

25	30-11-2020 To 04-12-2020		**Study Leave**
			Study Leave
			Study Leave
			Study Leave
			Study Leave
26	07-12-2020 To 11-12-2020		**Study Leave**
			Study Leave
			Study Leave
			Study Leave
			Study Leave
27	14-12-2020		**3rd Semester University Examination Begins**

Subject Code:	**3B06BCA**
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. **(15 HRS)**

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. **(15 HRS)**

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. **(15 HRS)**

Module IV

Introduction to Stack, STACK Structure of 8086, Interrupts and Interrupt Service Routines, Interrupt Cycle of 8086, Non- Maskable and Maskable Interrupts**.** **(12 HRS)**

Module V

Data transfer schemes – Programmed IO, Interrupt driven IO and DMA. Programmable Peripheral Interface 8255, DMA Controller 8257, Programmable Interrupt Controller 8259A **(15 HRS)**

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	15-06-2020 To 19-06-2020	1	Introduction: History of Microprocessors
		2	Introduction to 8-bit microprocessor - 8085
		3	Architecture of 8085
		4	Bus organization of 8085
2	22-06-2020 To 26-06-2020	5	Internal Data Operations
		6	8085 registers
		7	Previous year question paper discussion
		8	**Exam Module1**
3	29-06-2020 To 03-07-2020	9	Introduction to 16-bit microprocessor – 8086
		10	Architecture of 8086
		11	Functional Block Diagram
		03 July	St. Thomas Day
4	06-07-2020 To 10-07-2020	12	Register Organization of 8086
		13	Signal Description of 8086
		14	Physical Memory Organization
		15	Memory Mapped and I/O Mapped Organization
5	13-07-2020 To 17-07-2020	16	General Bus Operation
		17	I/O Addressing Capability
		18	Minimum Mode 8086 System and Timings
		19	Maximum Mode 8086 System and Timings.
6	20-07-2020 To	20 July	**Karkkidaka Vavu**
		20	Previous year question paper discussion
		21	**Exam Module2**

	24-07-2020	22	Addressing Modes of 8086
7	27-07-2020 To 31-07-2020	23	Machine Language Instruction Format
		24	Assembly Language Programming of 8086
		25	Assembly Language Programming of 8086
		31 July	Bakrid
8	03-08-2020 To 07-08-2020	26	Revision Module 1
		27	Revision Module 2
		28	Instruction Set of 8086, Data transfer instructions
		29	Arithmetic and Logic instructions,
9	10-08-2020 To 14-08-2020	30	Branch instructions, Loop instructions
		31	Processor Control instructions
		32	Flag Manipulation instructions, Shift and Rotate instructions
		33	String instructions
10	17-08-2020 To 21-08-2020	34	Assembler Directives and operators
		35	Previous year question paper discussion
		36	**Exam Module3**
		37	Introduction to Stack
11	24-08-2020 To 28-08-2020	38	STACK Structure of 8086
		39	Interrupts and Interrupt Service Routines
		40	Revision Module 2 and 3
		28 August	**Ayyankali Jayanthi**
12	31-08-2020 To 04-09-2020		**Onam Holiday**
			Onam Holiday
			Onam Holiday
			Onam Holiday
			Onam Holiday
13	07-09-2020 To 11-09-2020	41	Interrupt Cycle of 8086
		42	Non- Maskable and Maskable Interrupts
		10 September	**Sreekrishna Jayanthi**
		43	Data transfer schemes – Programmed IO
14	14-09-2020 To 18-09-2020	44	Interrupt driven IO and DMA
		45	Programmable Peripheral Interface 8255, DMA Controller 8257, Programmable Interrupt Controller 8259A
		46	Revision Module 1

		47	Revision Module 2
15	21-09-2020 To 25-09-2020	**21 September**	**Sreenarayana Guru Samadhi**
			3rd Semester 1st Internal Exam
			3rd Semester 1st Internal Exam
			3rd Semester 1st Internal Exam
			3rd Semester 1st Internal Exam
16	28-09-2020 To 02-10-2020		**3rd Semester 1st Internal Exam**
			3rd Semester 1st Internal Exam
		48	Revision Module 3,4
		49	Revision Module 5
17	05-10-2020 To 09-10-2020	50	Seminars
		51	Seminars
		52	Seminars
		53	Seminars
18	12-10-2020 To 16-10-2020	54	Previous year question paper discussion
		55	Previous year question paper discussion
		55	Previous year question paper discussion
		56	Previous year question paper discussion
19	19-10-2020 To 23-10-2020	57	Revision Module 1
		58	**Exam Module 1**
		59	Revision Module 2
		60	**Exam Module 2**
20	26-10-2020 To 30-10-2020	26 October	**Vijayadasami**
		61	
		29 October	**Miladi-I-Sherif**
		62	Revision Module 3
21	02-11-2020 To 06-11-2020	63	**Exam Module 3**
		64	Revision Module 4
		65	**Exam Module 4**
		66	Revision Module 5
22	09-11-2020 To 13-11-2020	67	**Exam Module 5**
		68	Previous year question paper discussion
		69	Previous year question paper discussion
		70	Previous year question paper discussion
23	16-11-2020 To	71	Previous year question paper discussion
		72	Previous year question paper discussion
			3rd Semester 2nd Internal Exam

	20-11-2020		**3rd Semester 2nd Internal Exam**
			3rd Semester 2nd Internal Exam
24	23-11-2020 To 27-11-2020		**3rd Semester 2nd Internal Exam**
			3rd Semester 2nd Internal Exam
			3rd Semester 2nd Internal Exam
			Study Leave
			Study Leave
25	30-11-2020 To 04-12-2020		**Study Leave**
			Study Leave
			Study Leave
			Study Leave
			Study Leave
26	07-12-2020 To 11-12-2020		**Study Leave**
			Study Leave
			Study Leave
			Study Leave
			Study Leave
27	14-12-2020		**3rd Semester University Examination Begins**

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	15-06-2020 To 19-06-2020	1	Introduction to Java programming
		2	Java technology;
		3	History
		4	Java as a new paradigm
2	22-06-2020 To 26-06-2020	5	Features of java;
		6	Java development kit
		7	Java Language fundamentals
		8	Java Language fundamentals
3	29-06-2020 To 03-07-2020	9	Java Language fundamentals
		10	Wrapper classes, Arrays
		11	Strings; stringbuffer classes.
		12	**MODULE 1 EXAM**
		03 July	St. Thomas Day
4	06-07-2020 To 10-07-2020	13	Java classes
		14	Java classes
		15	Java classes
		16	Variables,
5	13-07-2020 To 17-07-2020	17	Methods and constructors
		18	Overloading
		19	overriding
		20	overriding
6	20-07-2020 To 24-07-2020	20 July	**Karkkidaka Vavu**
		21	Modifiers;
		22	Modifiers;
		23	Packages
		24	Packages
7	27-07-2020 To 31-07-2020	25	Interfaces.
		26	Interfaces.
		27	Interfaces.
		28	Interfaces.
		31 July	Bakrid

8	03-08-2020 To 07-08-2020	29	**Module 2 class test**
		30	Exception handling: Basics
		31	Handling exceptions in java- Try, catch
		32	Finally, multiple catch, nested try, throw
9	10-08-2020 To 14-08-2020	33	Exception and inheritance
		34	Throwing user defined exceptions
		35	Advantages of exception handling
		36	Multithreading: overview
10	17-08-2020 To 21-08-2020	37	Creating threads
		38	Thread life cycle
		39	Priorities and scheduling
		40	Synchronization
11	24-08-2020 To 28-08-2020	41	Thread groups
		42	Communication of threads;
		43	**REVISION MODULE 2**
		44	**REVISION MODULE 3**
		28 August	**Ayyankali Jayanthi**
12	31-08-2020 To 04-09-2020		**Onam Holiday**
			Onam Holiday
			Onam Holiday
			Onam Holiday
			Onam Holiday
13	07-09-2020 To 11-09-2020	45	**Module 3 class test**
		46	Files and I/O streams: Overview
		47	Java I/O
		10 September	**Sreekrishna Jayanthi**
		48	File streams
14	14-09-2020 To 18-09-2020	49	Fileinputstream and fileoutputstream
		50	Filter streams
		51	Update, Delete
		52	Update, Delete
15	21-09-2020 To 25-09-2020	**21 September**	**Sreenarayana Guru Samadhi**
			3rd Semester 1st Internal Exam
			3rd Semester 1st Internal Exam
			3rd Semester 1st Internal Exam

			3rd Semester 1st Internal Exam
16	28-09-2020 To 02-10-2020		**3rd Semester 1st Internal Exam**
			3rd Semester 1st Internal Exam
		53	Randomaccessfile
		54	Serialization
		55	Applets -introduction
17	05-10-2020 To 09-10-2020	56	Application vs. Applets;
		57	Case study: MySQL
		58	**MODULE 4 EXAM**
		59	Working with Applets
18	12-10-2020 To 16-10-2020	60	The HTML APPLET tag;
		61	The java.applet Package
		62	Sample programs.
		63	**Module 4 class test**
19	19-10-2020 To 23-10-2020	64	The abstract window toolkit
		65	Basic classes in AWT
		66	Drawing with Graphics class
		67	AWT controls
20	26-10-2020 To 30-10-2020	26 October	**Vijayadasami**
		68	Layout managers
		29 October	**Miladi-I-Sherif**
		69	Creating Menus
		70	Handling events from menu items.
22	09-11-2020 To 13-11-2020	71	**REVISION MODULE 1 , 2 ,3 &4**
		72	Module 5 class test
			Study Leave
23	16-11-2020 To 20-11-2020		**Study Leave**
			Study Leave
			3rd Semester 2nd Internal Exam
			3rd Semester 2nd Internal Exam
			3rd Semester 2nd Internal Exam
24	23-11-2020 To 27-11-2020		**3rd Semester 2nd Internal Exam**
			3rd Semester 2nd Internal Exam
			3rd Semester 2nd Internal Exam
			Study Leave
			Study Leave

25	30-11-2020 To 04-12-2020		**Study Leave**
			Study Leave
			Study Leave
			Study Leave
			Study Leave
26	07-12-2020 To 11-12-2020		**Study Leave**
			Study Leave
			Study Leave
			Study Leave
			Study Leave
27	14-12-2020		**3rd Semester University Examination Begins**

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**

Sample Program List

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	02-11-2020 To 06-11-2020	1	Sample program
		2	Sample program
2	09-11-2020 To 13-11-2020	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	16-11-2020 To 20-11-2020	5	Sample program
		6	Sample program
4	23-11-2020 To 27-11-2020	7	Write java program to implement interface
		8	Sample program

5	30-11-2020 To 04-12-2020	9	Sample program
		10	Sample program
6	07-12-2020 To 11-12-2020	11	Write java program that handles various exceptions. Use try –catch statement
		12	Sample program
7	14-12-2020 To 18-12-2020	13	Sample program
		14	Sample program
8	21-12-2020 To 25-12-2020	19 December	Christmas Vacation
			Christmas Vacation
			Christmas Vacation
		25 December	Christmas
			Christmas Vacation
9	28-12-2020 To 01-01-2021	15	Write java program to implement file I/O operation using java iostreams
		16	Write java program to implement file I/O operation using java iostreams
10	04-01-2021 To 08-01-2021	17	Sample program
		18	Sample program
11	11-01-2021 To 15-01-2021	19	Write java program to implement Applet life cycle.
		20	Sample program
12	18-01-2021 To 22-01-2021	21	Write java program to implement a calculator using suitable AWT controls.
		22	Write java program to implement a calculator using suitable AWT controls.
13	25-01-2021 To 29-01-2021	23	Sample program
		26Januay	Republic day
		24	Sample program
14	01-02-2021 To	25	Write java program to implement packages
		26	Sample program

	05-02-2021		
15	08-02-2021 To 12-02-2021	27	With API support write demo programs for menu displa
		28	Sample program
16	15-02-2021 To 19-02-2021	29	Sample program
		30	Sample program
17	22-02-2021 To 26-02-2021	31	Write a java program to demonstrate threads
		32	Sample program
18	01-03-2021 To 05-03-2021	01 March	I Semester UG Internal Exam
		02March	I Semester UG Internal Exam
		03 March	I Semester UG Internal Exam
		33	Sample program
19	08-03-2021 To 12-03-2021		English Proficiency
			English Proficiency
		11 March	**Maha Shivarathri**
			English Proficiency
20	15-03-2021 To 19-03-2021		English Proficiency
			English Proficiency(Exam)
		34	Sample program
21	22-03-2021 To 26-03-2021	35	Demonstration of FileInput Stream and FileOutputStream Classes
		36	Demonstration of FileInput Stream and FileOutputStream Classes
22	29-03-2021 To 02-04-2021	29 April	Talent Hunt
		30 April	Easter Vacation
		31 March	Easter Vacation
		1 April	Easter Vacation
		2 April	Easter Vacation

Subject Code:	**3C03 AMT**
Subject Name:	**BCA: Mathematics for BCA III**
No. of Credits:	**4**
No. of Contact Hours:	**72**
Hours per Week:	**4**
Name of the Teacher:	**Prija v , Remya Raj**

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 Equations, 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	15-06-2020 To 19-06-2020	1	UNIT I-Introduction, Basic concepts.
		2	Geometrical meaning of $y'=f(x, y)$.
		3	Examples.
		4	Direction Fields –definition.
2	22-06-2020 To 26-06-2020	5	Problems.
		6	Separable ODEs, Examples.
		7	Problems, Homework questions.
		8	Class Test.
3	29-06-2020 To 03-07-2020	9	Exact ODEs, Examples.
		10	Problems, Homework questions.
		11	Integrating Factors, Examples.
		12	**MODULE 1 EXAM**
		03 July	St. Thomas Day
4	06-07-2020 To 10-07-2020	13	Problems, Homework questions.
		14	Integrating Factors, Examples.
		15	Problems, Homework questions.
		16	Linear ODEs, Examples.
5	13-07-2020 To 17-07-2020	17	Problems, Homework questions.
		18	Bernoulli Equation ,Examples.
		19	Problems, Homework questions.
		20	Unit step Function-definition, Examples.
6	20-07-2020	20 July	**Karkkidaka Vavu**
		21	UNIT II-Laplace Transform, Linearity.

	To 24-07-2020	22	Transforms of Derivatives.
		23	Derivatives and Integrals.
		24	Problems, Homework questions.
7	27-07-2020 To 31-07-2020	25	Convolution.
		26	Integral Equations, Differentiation and integration of Transforms.
		27	Problems, Homework questions.
		28	Assignment.
		31 July	Bakrid
8	03-08-2020 To 07-08-2020	29	special linear ODE's with variable coefficients.
		30	Problems, Homework questions.
		31	Laplace Transform-Examples.
		32	Problems, Homework questions.
9	10-08- 2020TTo 14-08-2020	33	General Formulas, Table of Laplace Transforms.
		34	Class test.
		35	Existenceand Uniqueness of Solutions – Wronskian.
		36	Assignment.
10	17-08-2020 To 21-08-2020	37	Nonhomogeneous ODEs.
		38	Exercises question.
		39	UNIT IV-Fourier series-Introduction.
		40	Definition,periodic functions.
11	24-08-2020 To 28-08-2020	41	Problems, Homework questions.
		42	UNIT IV-Fourier series-Introduction.
		43	**REVISION MODULE 2**
		44	**REVISION MODULE 3**
		28 August	**Ayyankali Jayanthi**
12	31-08-2020 To 04-09-2020		**Onam Holiday**
			Onam Holiday
			Onam Holiday
			Onam Holiday
			Onam Holiday
13	07-09-2020 To 11-09-2020	45	Even functions.
		46	Exercises question.
		47	Exercises question.
		10 September	**Sreekrishna Jayanthi**
		48	Assignment.

14	14-09-2020 To 18-09-2020	49	Odd functions.
		50	Exercises question.
		51	Exercises question.
		52	Exercises question.
15	21-09-2020 To 25-09-2020	**21 September**	**Sreenarayana Guru Samadhi**
			3rd Semester 1st Internal Exam
			3rd Semester 1st Internal Exam
			3rd Semester 1st Internal Exam
			3rd Semester 1st Internal Exam
16	28-09-2020 To 02-10-2020		**3rd Semester 1st Internal Exam**
			3rd Semester 1st Internal Exam
		53	Problems, Homework questions.
		54	arbitrary period.
		55	Problems, Homework questions.
17	05-10-2020 To 09-10-2020	56	Problems, Homework questions.
		57	Class Test.
		58	Seminar- Exercises question.
		59	Seminar- Exercises question.
18	12-10-2020 To 16-10-2020	60	Seminar- Exercises question.
		61	Seminar- Exercises question.
		62	Seminar- Exercises question.
		63	Viva.
19	19-10-2020 To 23-10-2020	64	Viva.
		65	Revision.
		66	Viva.
		67	Viva.
20	26-10-2020 To 30-10-2020	26 October	**Vijayadasami**
		68	Viva.
		29 October	**Miladi-I-Sherif**
		69	Viva.
		70	Viva.
22	09-11-2020 To 13-11-2020	71	**REVISION MODULE 1 , 2 ,3 &4**
		72	Module 5 class test
			Study Leave
23	16-11-2020		**Study Leave**

	To 20-11-2020		**Study Leave**
			3rd Semester 2nd Internal Exam
			3rd Semester 2nd Internal Exam
			3rd Semester 2nd Internal Exam
24	23-11-2020 To 27-11-2020		**3rd Semester 2nd Internal Exam**
			3rd Semester 2nd Internal Exam
			3rd Semester 2nd Internal Exam
			Study Leave
			Study Leave
25	30-11-2020 To 04-12-2020		**Study Leave**
			Study Leave
			Study Leave
			Study Leave
			Study Leave
26	07-12-2020 To 11-12-2020		**Study Leave**
			Study Leave
			Study Leave
			Study Leave
			Study Leave
27	14-12-2020		**3rd Semester University Examination Begins**