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 - II

ACADEMIC YEAR - (2019-20)

II Semester BCA (2019 - 22)			
SL. No.	**Name of Subjects with Code**	**Name of the Teacher**	**Duty Hours per week**
1.	**2A03 ENG Readings on Life and Nature**	**Anu P. Thomas**	**5**
2.	**2A04 ENG Readings on Gender**	**Amrutha Lakshmanan**	**4**
3.	**2A08 -2 MAL Gadhya Mathrukakal**	**Rajisha C. K.**	**5**
4.	**2A08 -2 HIN Sahithya Aur Prayog**	**Jainy N. George**	
5.	**2B02 BCA Digital Systems**	**Sruthi N.**	**3**
6.	**2B03BCA Object Oriented Programming Using C++**	**Sindhu P.M.**	**2**
7.	**2B05 BCA Lab I:Programming in C++**	**Sindhu P. M.**	**2**
8.	**2C02 MAT-BCA Mathematics for BCA II**	**Remya Raj**	**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	2B02 BCA Digital Systems	2A08 -2 MAL Gadhya Mathrukakal/2A08 -2 HIN Sahithya Aur Prayog	2A03 ENG Readings on Life and Nature	2B05 BCA Lab I:Programming in C++	2A04 ENG Readings on Gender
2	2C02 MAT-BCA Mathematics for BCA II	2A03 ENG Readings on Life and Nature	2B02 BCA Digital Systems	2A08 -2 MAL Gadhya Mathrukakal/2A08 -2 HIN Sahithya Aur Prayog	2A04 ENG Readings on Gender
3	2A04 ENG Readings on Gender	2A08 -2 MAL Gadhya Mathrukakal/2A08 -2 HIN Sahithya Aur Prayog	2B02 BCA Digital Systems	2A03 ENG Readings on Life and Nature	2B05 BCA Lab I:Programming in C++
4	2A08 -2 MAL Gadhya Mathrukakal/2A08 -2 HIN Sahithya Aur Prayog	2C02 MAT-BCA Mathematics for BCA II	2B05 BCA Lab I:Programming in C++	2C02 MAT-BCA Mathematics for BCA II	2A03 ENG Readings on Life and Nature
5	2A08 -2 MAL Gadhya Mathrukakal/2A08 -2 HIN Sahithya Aur Prayog	2A04 ENG Readings on Gender	2C02 MAT-BCA Mathematics for BCA II	2B03BCA Object Oriented Programming Using C++	2A03 ENG Readings on Life and Nature

Subject Code:	**2A03 ENG**
Subject Name:	**Readings on Life and Nature**
No. of Credits:	**4**
No. of Contact Hours:	**90**
Hours per Week:	**5**
Name of the Teacher:	**Anu P. Thomas**

Objective: -

1. Understand the basic themes and issues related to ecology through articles, poems, stories, life writings, and historical narratives.
2. Assume ecologically friendly attitudes in events related to everyday life.
3. Identify the specific ecological problems related to Kerala.
4. Identify the major ecological movements around the world and within the country.
5. Ability to express specific opinions when confronted with ecology/development binary.
6. Identify the major or minor ecological issues happening around the students' native place.

Module –I:

1. Environmental Studies: Definition, Scope and Importance
2. Concept of an Ecosystem
3. The Fish – Elizabeth Bishop
4. Trophic Cascade – Camille T. Dungy
5. The Rightful inheritors of the Earth – Vaikom Muhammad Basheer

Module – II:

1. Biodiversity
2. Disaster Management: Floods, Earthquakes, Cyclones, Landslides
3. Real Estate – Sebastian
4. The Truth about the Floods – Nissim Ezekiel
5. Matsyagandhi – M Sajitha

Module – III:

1. Role of an Individual in Prevention of Pollution
2. Environmental Values
3. The End of Living – The Beginning of Survival: Chief of Seattle
4. Going Local – Helena Norberg-Hodge

Assignment Topics

1. Document the list of products we use in our daily life that could have originated from a forest ecosystem.
2. Identify the different fish that the local fishermen have caught. Find out from them if the fish catch has decreased, remained the same, or has increased during the last decade or two.

3. Prepare a report on a flood affected area with details on how it happened, the people's reactions, and the steps to be taken to prevent it in the future.
4. Highlight the environmental health hazards caused by e-waste.
5. Prepare a report on how globalization and liberalization affected coconut/rubber/cardamom farmers in Kerala. Make a field study for any one of the farming sector and document it.
6. Impact of globalization on the local economies.
7. Sustainable development is the only way forward.
8. Identify a river nearby and provide a historical profile of and the changes in its environmental status over the years by talking to the local people.
9. Are the natural resources overused due to the number of people that depend on it, or the greed of a few, or both?
10. List out the products you use in your daily life from a grassland ecosystem.
11. Document the environmental assets in your neighbourhood.
12. "Linking of Indian Rivers" – Your comment on it.
13. Corporate Hijack of Agriculture – Prepare a report.
14. Plastic Pollution in your surroundings.
15. Air pollution in your village/town/city.

People in Environment

Ralph Emerson
Henry Thoreau
John Muir
Edward Abbey
Annie Dillard
Leslie Marmon Silko
Aldo Leopald
Rachel Carson
E O Wilson
Salim Ali
Madhav Gadgil
M C Mehta
Anil Agarwal
Medha Patkar
Sunderlal Bahuguna
Kallen Pokkudan
Sugathakumari
Vandana Shiva
Sunita Narain
Greta Thunberg

Major environmental movements in India

Chipko Movement
Jungle Bachao Andholan
Narmada Bachao Andholan
Silent Valley Movement

Prescribed Textbook

Nature Matters: Readings on Life and Nature, **Board of Editors. MainSpring Publishers, 2019.**

Environmental Literature for Further Reference

1. Pilgrim at Tender Creek – Annie Dillard, 1975.
2. Walden – Henry David Thoreau, 1854
3. Under the Sea Wind – Rachel Carson, 1941.
4. Silent Spring – Rachel Carson, 1962.
5. Small is Beautiful – E F Schumacher
6. Earth Policy Reader – Lester R Brown
7. Eco Economy – Lester R Brown
8. No Logo – Naomi Klein
9. Desert Solitaire – Edward Abbey, 1968
10. Biophilia – E O Wilson
11. The Biodiversity of India – Erach Barucha
12. Down to Earth – Centre for Science and Environment
13. Water in Crisis – H P Gleick
14. Global Biodiversity Assessment – Heywood & Waston, 1995
15. The Call of the Wild – Jack London, 1903
16. I am not a Plastic Bag – Rahel Hope, 2012
17. The Great Derangement – Amitav Ghosh
18. The End of Food – Paul Roberts, 2008
19. The End of Oil – Paul Roberts
20. The World Without Us – Alan Weisman, 2008
21. The One-Straw Revolution – Fukuoka, 2009
22. The End of Nature – Bill McKibben, 1989
23. The Good Earth – Pearl S Buck, 2005
24. Carbon – Daniel Boyd, 2014.
25. Peak – Roland Smith, 2007
26. The Tomorrow Code – Brian Falkner, 2008.
27. The Water Wars – Cameron Stracher, 2011
28. Fast Food Nation – Eric Schlosser, 2001
29. Last Child in the Woods – Richard Louv, 2005

Web Resources on Environment

www.earth-policy.org
www.corecentre.co.in – fact sheet on air pollution
www.dialcomfort.com – online guide to air pollution
www.sciencemuseum.og.uk
www.tedtalk.com

TEACHING SCHEDULE

No of Weeks	Dates	Session	Topic
1	18-11-2019 To 23-11-2019	1	Introduction to the syllabus
		19 Nov	Union Inauguration
		2	Environmental Studies: Definition, Scope and Importance
		3	Environmental Studies: Definition, Scope and Importance
		4	Environmental Studies: Definition, Scope and Importance
		5	Group Discussion
		23 Nov	Sports Day
2	25-11-2019 To 29-11-2019		Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
3	01-12-2019 To 05-12-2019		Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
4	09-12-2019 To 13-12-2019	6	The Rightful inheritors of the Earth – Vaikom Muhammad Basheer
		7	The Rightful inheritors of the Earth – Vaikom Muhammad Basheer
		8	The Rightful inheritors of the Earth – Vaikom Muhammad Basheer
		9	Concept of an Ecosystem
		10	Concept of an Ecosystem
		11	Class Test
		12 Dec	Arts Day
		13 Dec	Arts Day
5	16-12-2019	12	The Fish – Elizabeth Bishop

No of Weeks	Dates	Session	Topic
	To 20-12-2019	13	The Fish – Elizabeth Bishop
		14	The Fish – Elizabeth Bishop
		15	Trophic Cascade – Camille T. Dungy
		16	Trophic Cascade – Camille T. Dungy
		20 Dec	Christmas Celebration
6	23-12-2019 To 28-12-2019		Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
7	30-12-2019 To 03-01-2020	17	Seminar
		18	Seminar
		19	Seminar
		20	Seminar
		21	Seminar
		02 Jan	Mannam Jayanthi – Holiday
		22	Biodiversity
8	06-01-2020 To 10-01-2020	23	Biodiversity
		24	Biodiversity
		25	Class Test
		26	Disaster Management: Floods, Earthquakes, Cyclones, Landslides
		27	Disaster Management: Floods, Earthquakes, Cyclones, Landslides
		28	Disaster Management: Floods, Earthquakes, Cyclones, Landslides
		29	Disaster Management: Floods, Earthquakes, Cyclones, Landslides
		30	Group Discussion
9	13-01-2020 To 17-01-2020	31	Real Estate – Sebastian
		32	Real Estate – Sebastian
		33	The Truth about the Floods – Nissim Ezekiel
		34	The Truth about the Floods – Nissim Ezekiel
		35	The Truth about the Floods – Nissim Ezekiel
		36	Matsyagandhi – M Sajitha
		37	Matsyagandhi – M Sajitha

No of Weeks	Dates	Session	Topic
		38	Matsyagandhi – M Sajitha
		39	Matsyagandhi – M Sajitha
10	20-01-2020 To 24-01-2020	20 Jan	First Internal II Semester UG
			First Internal II Semester UG
		22 Jan	First Internal II Semester UG
		40	Role of an Individual in Prevention of Pollution
		41	Role of an Individual in Prevention of Pollution
		42	Seminar
		43	Seminar
		44	Seminar
11	27-01-2020 To 31-01-2020	45	Seminar
		46	Environmental Values
		47	Environmental Values
		48	Environmental Values
		49	Class Test
		50	The End of Living – The Beginning of Survival: Chief of Seattle
		51	The End of Living – The Beginning of Survival: Chief of Seattle
12	03-02-2020 To 07-02-2020	52	The End of Living – The Beginning of Survival: Chief of Seattle
		53	The End of Living – The Beginning of Survival: Chief of Seattle
		54	Assignment
		55	Going Local – Helena Norberg-Hodge
		56	Going Local – Helena Norberg-Hodge
		57	Going Local – Helena Norberg-Hodge
13	10-02-2020 To 14-02-2020	58	Class Test
		59	Ralph Emerson Henry Thoreau John Muir
		60	People in Environment Ralph Emerson Henry Thoreau John Muir
		61	Edward Abbey Annie Dillard Leslie Marmon Silko
		62	Edward Abbey Annie Dillard Leslie Marmon Silko

No of Weeks	Dates	Session	Topic
		63	Aldo Leopald Rachel Carson E O Wilson
14	17-02-2020 To 22-02-2020	64	Aldo Leopald Rachel Carson E O Wilson
		65	Salim Ali Madhav Gadgil M C Mehta
		66	Salim Ali Madhav Gadgil M C Mehta
		21 Feb	Mahasivaratri – Holiday
		67	Group Discussion
15	24-02-2020 To 28-02-2020	24 Feb	College Day
		68	Anil Agarwal Medha Patkar Sunderlal Bahuguna
		69	Anil Agarwal Medha Patkar Sunderlal Bahuguna
		70	Kallen Pokkudan Sugathakumari Vandana Shiva
		71	Kallen Pokkudan Sugathakumari Vandana Shiva
		72	Sunita Narain Greta Thunberg
16	02-03-2020 To 07-03-2020	73	Sunita Narain Greta Thunberg
		74	Assignment
		75	Assignment
		76	Assignment
		77	Major environmental movements in India Chipko Movement
		78	Chipko Movement
17	09-03-2020 To 13-03-2020	79	Jungle Bachao Andholan
		80	Jungle Bachao Andholan
		81	Narmada Bachao Andholan
		82	Narmada Bachao Andholan
		83	Silent Valley Movement

No of Weeks	Dates	Session	Topic
		84	Silent Valley Movement
18	16-03-2020 To 20-03-2020	85	Question Paper Discussion
		86	Question Paper Discussion
		87	Question Paper Discussion
		88	Revision
		89	Revision
		90	Revision
19	23-03-2020 To 27-03-2020	23 Mar	Second Internal II Semester UG
			Second Internal II Semester UG
			Second Internal II Semester UG
			Second Internal II Semester UG
			Second Internal II Semester UG
			Second Internal II Semester UG
20	30-03-2020 To 03-04-2020		Study Leave
			Study Leave
			Study Leave
			Study Leave
			Study Leave
			Study Leave
21	06-04-2020	06 April	University Exam II Semester UG Begin

Subject Code:	**2A04 ENG**
Subject Name:	**Readings on Gender**
No. of Credits:	**3**
No. of Contact Hours:	**72**
Hours per Week:	**4**
Name of the Teacher:	**Amrutha Lakshmanan**

Objective:
To understand the basic gender issues faced by Kerala through articles, poems, stories, life writings and historical narratives.

Module I:
1. An Introduction - Kamala Das
2. Kitchen Rags - Vijila
3. Daskshayani Velayudhan - A Biographical Sketch – Meera Velayudhan
4. Learning to be a Mother - Shashi Deshpande
5. Is this Desirable? - Lalithambika Antharjanam

Module II:
1. Still I Rise - Maya Angelou
2. I Am Not That Woman - Kishwar Naheed
3. Structural Violence and the Trans Struggle for Dignity – Gee Imaan Semmalar
4. Gender Justice and the Media - Ammu Joseph
5. Clothing Matters: Visiting the Melmundusamaram in Keralam - Sheeba K M

Prescribed Textbook; Plural perspectives:
Readings on Gender by Rakhi Raghavan

TEACHING SCHEDULE

No of Weeks	Dates	Session	Topic
1	18-11-2019 To 23-11-2019	1	An Introduction - Kamala Das
		19 Nov	Union Inauguration
		2	An Introduction - Kamala Das
		3	An Introduction - Kamala Das
		4	An Introduction - Kamala Das
		5	An Introduction - Kamala Das
		23 Nov	Sports Day
2	25-11-2019 To 29-11-2019		Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
3	01-12-2019 To 05-12-2019		Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
4	09-12-2019 To 13-12-2019	6	An Introduction - Kamala Das
		7	Assignment
		8	**Class Test**
		9	Kitchen Rags-
		10	Kitchen Rags
		11	Kitchen Rags
		12 Dec	Arts Day
		13 Dec	Arts Day
5	16-12-2019 To	12	Kitchen Rags
		13	Assignment
		14	Revision

No of Weeks	Dates	Session	Topic
	20-12-2019	15	**Class Test**
		20 Dec	Christmas Celebration
6	23-12-2019 To 28-12-2019		Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
7	30-12-2019 To 03-01-2020	16	Daskshayani Velayudhan - A Biographical Sketch
		17	Daskshayani Velayudhan - A Biographical Sketch
		18	Daskshayani Velayudhan - A Biographical Sketch
		19	Daskshayani Velayudhan - A Biographical Sketch
		02 Jan	Mannam Jayanthi – Holiday
		20	Daskshayani Velayudhan - A Biographical Sketch
8	06-01-2020 To 10-01-2020	21	Assignment
		22	**Class Test**
		23	Learning to be a Mother
		24	Learning to be a Mother
		25	Learning to be a Mother
		26	Learning to be a Mother
9	13-01-2020 To 17-01-2020	27	Assignment
		28	**Class Test**
		29	Is this Desirable?
		30	Is this Desirable?
		31	Is this Desirable?
		32	Is this Desirable?
10	20-01-2020 To 24-01-2020	20 Jan	First Internal II Semester UG
			First Internal II Semester UG
		22 Jan	First Internal II Semester UG
		33	Is this Desirable?
		34	Is this Desirable?
		35	Assignment
11	27-01-2020 To 31-01-2020	36	**Class Test**
		37	I Am Not That Woman
		38	I Am Not That Woman
		39	I Am Not That Woman
		40	I Am Not That Woman

No of Weeks	Dates	Session	Topic
12	03-02-2020 To 07-02-2020	41	I Am Not That Woman
		42	Assignment
		43	Seminar
		44	**Class Test**
		45	Structural Violence and the Trans Struggle for Dignity
13	10-02-2020 To 14-02-2020	46	Structural Violence and the Trans Struggle for Dignity
		47	Structural Violence and the Trans Struggle for Dignity
		48	Structural Violence and the Trans Struggle for Dignity
		49	Structural Violence and the Trans Struggle for Dignity
14	17-02-2020 To 22-02-2020	50	Seminar
		51	**Class Test**
		52	Gender Justice and the Media
		21 Feb	Gender Justice and the Media
		53	**Mahasivaratri – Holiday**
15	24-02-2020 To 28-02-2020	**24 Feb**	Gender Justice and the Media
		54	**College Day**
		55	Gender Justice and the Media
		56	Gender Justice and the Media
		57	Gender Justice and the Media
16	02-03-2020 To 07-03-2020	58	Assignment
		59	Seminar
		60	**Class Test**
		61	Clothing Matters: Visiting the Melmundusamaram in Keralam
		62	Clothing Matters: Visiting the Melmundusamaram in Keralam
17	09-03-2020 To 13-03-2020	63	Clothing Matters: Visiting the Melmundusamaram in Keralam
		64	Clothing Matters: Visiting the Melmundusamaram in Keralam
		65	Clothing Matters: Visiting the Melmundusamaram in Keralam
		66	Clothing Matters: Visiting the Melmundusamaram in Keralam
		67	Clothing Matters: Visiting the Melmundusamaram in Keralam
18	16-03-2020 To	68	Assignment
		69	**Class Test**
		70	Revision

No of Weeks	Dates	Session	Topic
	20-03-2020	71	Revision
		72	Revision
19	23-03-2020 To 27-03-2020	23 Mar	
			Second Internal II Semester UG
			Second Internal II Semester UG
			Second Internal II Semester UG
			Second Internal II Semester UG
			Second Internal II Semester UG
20	30-03-2020 To 03-04-2020		Second Internal II Semester UG
			Study Leave
			Study Leave
			Study Leave
			Study Leave
			Study Leave
21	06-04-2020	06 April	Study Leave
			University Exam II Semester UG Begin

Subject Code:	**2B02 BCA**
Subject Name:	**Digital Systems**
No. of Credits:	**3**
No. of Contact Hours:	**54**
Hours per Week:	**3**
Name of the Teacher:	**Sruthi N.**

Objective: -

1: Introduce the basic and important concepts of Digital Principles and applications
2: Familiarize with basic building blocks of Digital systems, Digital Logic and Digital Circuits
3: Design simple combinational digital systems.
4: Familiarize different number systems, codes and data representation in digital systems

Module –I:

Introductory Digital Concepts: Digital and Analog Quantities – Binary Digits, Logic Levels and Digital Waveforms - Basic Logic - Digital IC. Number Systems: Decimal, Binary, Hexa-decimal and Octal – Conversions -CODES: BCD,ASCII, Excess-3, GRAY and UNICODE. BINARY ARITHMETIC: Addition, Subtraction. Data Representation(textbook 2): Data types - Complements (1's and 2's)– Fixed Point representation – Floating Point representation. **(10 Hrs)**

Module – II:

Logic Gates: Inverter-AND-OR-NAND-NOR-XOR-XNOR-positive and Negative logic- Examples of IC gates. Boolean Algebra and Logic simplification: Boolean operations and Expressions – Laws and Rules of Boolean Algebra – DeMorgan's Theorem – Boolean analysis of Logic Circuits – Simplification, Standard forms and Truth tables of Boolean Expressions – K-Map , SOP, POS Minimization. **(12 Hrs)**

Module – III:

Combinational Logic Circuits: Basic Combinational Logic Circuits – Implementing Combinational Logic – Universal Property of NAND and NOR gates. Functions of Combinational Logic: Basic overview – Basic Adders-Parallel Binary Adders Comparators-Decoders-Encoders-Code Converters – Multiplexers – Demultiplexers-Parity generators/checkers. **(12 Hrs)**

Module – IV:

Flip Flops: Latches – Edge triggered Flip flops – Master Slave Flip flops-operating characteristics. Counters: Asynchronous counters - Synchronous counters – UP/Down synchronous counters – Design of Synchronous counters **(10Hrs)**

Module – V:

Shift Registers: Basic Shift Registers Functions - Serial in/Serial Out Shift Registers - Parallel In/Parallel out Shift Registers Bidirectional Shift Registers – Shift Register Counters. Memory: Basics of Semiconductor memories – RAM – ROM – PROM – EPROM – Flash Memories **(10 Hrs)**

Prescribed Textbook

1. Thomas L. Floyd, Digital Fundamentals, 11th Ed, Pearson
2. M. Morris Mano, Computer System Architecture, 3rd Ed, Pearson

Books for Reference

1. Donald P. Leach, Albert Paul Malvino and Gautam Saha, Digital Principles and Applications, 8th Ed, TMH

TEACHING SCHEDULE

No of Weeks	Dates	Session	Topic
1	18-11-2019 To 23-11-2019	1	Introductory Digital Concepts
		19 Nov	Union Inauguration
		2	Digital and Analog Quantities
		3	Binary Digits, Logic Levels
		4	Digital Waveforms
		23 Nov	Sports Day
2	25-11-2019 To 29-11-2019		Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
3	01-12-2019 To 05-12-2019		Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
4	09-12-2019 To 13-12-2019	5	Basic Logic
		6	Digital IC
		7	Number Systems: Decimal, Binary Conversions
		8	Hexa-decimal and Octal Conversions
		12 Dec	Arts Day
		13 Dec	Arts Day
5	16-12-2019 To 20-12-2019	9	BCD,ASCII
		10	Excess-3, GRAY and UNICODE
		11	BINARY ARITHMETIC: Addition, Subtraction
		20 Dec	Christmas Celebration
6			Christmas – Holiday
			Christmas – Holiday

No of Weeks	Dates	Session	Topic
	23-12-2019 To 28-12-2019		Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
7	30-12-2019 To 03-01-2020	12	Data Representation
		13	Data types - Complements (1's and 2's)
		02 Jan	Mannam Jayanthi – Holiday
		14	Fixed Point representation – Floating Point representation.
8	06-01-2020 To 10-01-2020	15	Logic Gates: Inverter-AND-OR-NAND-NOR-XOR-XNOR
		16	Boolean Algebra and Logic simplification
		17	Class test Module 1
		18	DeMorgan's Theorem
9	13-01-2020 To 17-01-2020	19	Boolean analysis of Logic Circuits – Simplification
		20	Standard forms and Truth tables of Boolean Expressions – K-Map
		21	SOP, POS Minimization
		22	Combinational Logic Circuits: Basic Combinational Logic Circuits
10	20-01-2020 To 24-01-2020	20 Jan	First Internal II Semester UG
			First Internal II Semester UG
		22 Jan	First Internal II Semester UG
		23	Basic Adders
11	27-01-2020 To 31-01-2020	24	Parallel Binary Adders Comparators-Decoders-Encoders
		25	Code Converters – Multiplexers – Demultiplexers
		26	Parity generators/checkers
		27	Class test Module 2
12	03-02-2020 To 07-02-2020	28	Flip Flops: Latches – Edge triggered Flip flops
		29	Master Slave Flip flops-operating characteristics
		30	Counters: Asynchronous counters
		31	Synchronous counters
13	10-02-2020 To 14-02-2020	32	UP/Down synchronous counters
		33	Design of Synchronous counters
		34	Class test Module 4
		35	Shift Registers: Basic Shift Registers Functions
14	17-02-2020	36	Serial in/Serial Out Shift Registers
		37	Parallel In/Parallel out Shift Registers

No of Weeks	Dates	Session	Topic
	To 22-02-2020	21 Feb	Mahasivaratri – Holiday
		38	Bidirectional Shift Registers – Shift Register Counters.
15	24-02-2020 To 28-02-2020	24 Feb	College Day
		39	Basics of Semiconductor memories – RAM
		40	RAM – ROM
		41	EPROM – Flash Memories
		42	Class test module 5
16	02-03-2020 To 07-03-2020	43	Revision module 1
		44	Revision module 2
		45	Revision module 3
		46	Revision module 4
17	09-03-2020 To 13-03-2020	47	Revision module 5
		48	Class test module 1
		49	Class test module 2
		50	Class test module 3
18	16-03-2020 To 20-03-2020	51	Class test module 4
		52	Class test module 5
		53	Question paper discussion
		54	Question paper discussion
19	23-03-2020 To 27-03-2020	23 Mar	Second Internal II Semester UG
			Second Internal II Semester UG
			Second Internal II Semester UG
			Second Internal II Semester UG
			Second Internal II Semester UG
			Second Internal II Semester UG
20	30-03-2020 To 03-04-2020		Study Leave
			Study Leave
			Study Leave
			Study Leave
			Study Leave
			Study Leave
21	06-04-2020	06 April	University Exam II Semester UG Begin

Subject Code:	**2B03BCA**
Subject Name:	**Object Oriented Programming Using C++**
No. of Credits:	**2**
No. of Contact Hours:	**36**
Hours per Week:	**2**
Name of the Teacher:	**Sindhu P. M.**

Objective: -

1: Understanding OOPs concepts such as inheritance and polymorphism and their implementation using C++.
2: Ability to develop programs in C++

Module –I:

Principles of object-oriented programming; OOP paradigm; Basic concepts of OOP; Benefits; applications. Introduction to C++, Structure of C++ program; Tokens, Keywords, identifiers and constants; Data types, symbolic constants; type compatibility; declaration and dynamic initialization of variables; reference variables. Operators, manipulators; type cast operators; Expressions, implicit conversions; operator overloading; operator precedence; Control structures. **(9Hrs)**

Module – II:

Functions; function overloading; friend and virtual functions; Math library functions. Structures; Specifying a class; Defining member functions; making an outside function inline; nesting of member functions; private member functions; arrays within a class; memory allocation for objects; static data members; static member functions; arrays of objects; objects as function arguments; friendly functions; returning objects; const member functions; pointer to members; Local classes. **(7 Hrs)**

Module – III:

Constructors and destructors; dynamic initialization of objects; copy constructor; Dynamic constructors; const objects; Destructors. Operator overloading – definition; overloading unary operators; overloading binary operators; overloading binary operators using friends; manipulation of strings using operators; rules for overloading operators. Type conversions. **(7 Hrs)**

Module – IV:

Inheritance – defining derived classes; making a private member inheritance; Types of inheritance; virtual base classes; abstract classes; constructors in derived classes; Nesting of classes. Pointers; Pointers to objects; Pointers to derived classes; virtual functions; pure virtual functions. **(6 Hrs)**

Module – V:

C++ streams; stream classes; unformatted I/O operations; formatted console I/O operations; Managing output with manipulators. Files – classes for file stream operations; Opening and closing a file; file modes; file pointers and their manipulations; Sequential input and output operation. **(7 Hrs)**

Prescribed Textbook

1. E. Balagurusamy, Object Oriented Programming with C++, 7th Ed, TMH

Books for Reference

1. K R. Venugopal and Raj Kumar Buyya, Mastering C++, 2ndEd, TMH.
2. Ashok N. Kamthane, Object-Oriented Programming with ANSI and Turbo C++, Pearson
3. M. T. Somashekara, Programming in C++, 2009, PHI
4. Yeshavant Kanetkar , Let us C++, 2nd Ed, BPB

TEACHING SCHEDULE

No of Weeks	Dates	Session	Topic
1	18-11-2019 To 23-11-2019	1	Principles of object-oriented programming; OOP paradigm.
		19 Nov	Union Inauguration
		2	Basic concepts of OOP.
		3	Benefits; applications. Introduction to C++.
		23 Nov	Sports Day
2	25-11-2019 To 29-11-2019		Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
3	01-12-2019 To 05-12-2019		Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
4	09-12-2019 To 13-12-2019	4	Structure of C++ program, Tokens, Keywords, identifiers and constants.
		12 Dec	Arts Day
		13 Dec	Arts Day
5	16-12-2019 To 20-12-2019	5	Data types, symbolic constants; type compatibility. Declaration and dynamic initialization of variables. Reference variables.
		6	Operators, manipulators, type cast operators.
		20 Dec	Christmas Celebration
6	23-12-2019 To		Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday

No of Weeks	Dates	Session	Topic
	28-12-2019		Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
7	30-12-2019 To 03-01-2020	7	Expressions, implicit conversions. Operator overloading. Operator precedence.
		8	Control structures
		02 Jan	Mannam Jayanthi – Holiday
8	06-01-2020 To 10-01-2020	9	**MOULE 1 EXAM**
		10	Functions, function overloading.
		11	Friend and virtual functions.
9	13-01-2020 To 17-01-2020	12	Math library functions.
		13	Structures. Specifying a class. Defining member functions.
		14	Making an outside function inline. Nesting of member functions, Private member functions.
10	20-01-2020 To 24-01-2020	20 Jan	First Internal II Semester UG
			First Internal II Semester UG
		22 Jan	First Internal II Semester UG
11	27-01-2020 To 31-01-2020	15	Arrays within a class, memory allocation for objects. Static data members, static member functions. Arrays of objects.
		16	Objects as function arguments. Friendly functions.
		17	Returning objects, const member functions.
12	03-02-2020 To 07-02-2020	18	Pointer to members, Local classes.
		19	**MOULE 2 EXAM**
		20	Constructors and destructors, dynamic initialization of objects, copy constructor.
13	10-02-2020 To 14-02-2020	21	Dynamic constructors, const objects; Destructors.
		22	Operator overloading – definition, overloading unary operators; overloading binary operators.
		23	Overloading binary operators using friends; manipulation of strings using operators.
14	17-02-2020 To 22-02-2020	24	Rules for overloading operators. Type conversions
		21 Feb	Mahasivaratri – Holiday
		25	**MOULE 3 EXAM**
15	24-02-2020 To 28-02-2020	24 Feb	College Day
		26	Inheritance – defining derived classes, making a private member inheritance, Types of inheritance.
		27	Virtual base classes, abstract classes, constructors in

No of Weeks	Dates	Session	Topic
			derived classes; Nesting of classes.
16	02-03-2020 To 07-03-2020	28	Pointers; Pointers to objects. Pointers to derived classes.
		29	Virtual functions; pure virtual functions.
		30	**MOULE 4 EXAM**
17	09-03-2020 To 13-03-2020	31	C++ streams; stream classes, unformatted I/O, operations, formatted console I/O operations.
		32	Managing output with manipulators. Files – classes for file stream operations, Opening and closing a file.
		33	File modes, file pointers and their manipulations, Sequential input and output operation.
18	16-03-2020 To 20-03-2020	34	**MOULE 5 EXAM**
		35	QUESTION PAPER DISCUSSION
		36	QUESTION PAPER DISCUSSION
19	23-03-2020 To 27-03-2020	23 Mar	Second Internal II Semester UG
			Second Internal II Semester UG
			Second Internal II Semester UG
			Second Internal II Semester UG
			Second Internal II Semester UG
			Second Internal II Semester UG
20	30-03-2020 To 03-04-2020		Study Leave
			Study Leave
			Study Leave
			Study Leave
			Study Leave
			Study Leave
21	06-04-2020	06 April	University Exam II Semester UG Begin

Subject Code:	**2B05 BCA Lab I**
Subject Name:	**Programming in C++**
No. of Credits:	**1**
No. of Contact Hours:	**36**
Hours per Week:	**2**
Name of the Teacher:	**Sindhu P. M.**

Sample Program List

Students have to practice all programs and record a minimum 15 programs. All programs must be based on OOP concepts.

1. Program to find the factorial of a number using recursion.
2. Program to find whether the given number belongs to Fibonacci series.
3. Program to find whether the string is palindrome or not. Use pointers.
4. Write a program to sort n numbers.
5. Program to find biggest, smallest, sum and difference of two numbers using inline function.
6. Program to find the area and volume of respective figures using function overloading.
7. Program to add one day to a given date.
8. Program to add and subtract two matrices.
9. Program to multiply two matrices.
10. Program to find the trace and transpose of a matrix.
11. Program to show stack operations.
12. Create a class time comprises hr, min and sec.as member data and add() and display() as member functions. Use constructor to initialize the object. write a main function to add two time objects, store it in another time object and display the resultant time
13. Program to negate the elements of an array. Use operator overloading function with the operator-.
14. Program to compare two strings. Use operator overloading (==). Do not use any built in functions.
15. Define a class student with name, reg.no, date of birth and name of college as member data and functions to get and display these details. Design another class Test with subjects of study and grade for each subject as member data and corresponding input and output functions. Derive a class Result from both Student and Test classes and Print the Result of each student with relevant information.
16. Start with an array of pointers to strings representing the days of the week. Provide functions to sort the strings into alphabetical order. Use pointers
17. Create a class person with personal details. Define two functions, set details and print details. Declare array of pointers to person class and write a main function to set and print the details of n persons using pointers.
18. Design two classes A and B with member data n1 and n2 respectively. Set values for each one. Write a program to interchange the values of both A and B. Use friend function.

19. Design a class SHAPE with dimensions d1 and d2 as member data and area() as member functions to find the area of a shape. Derive three classes RECT,TRIANG and CIRCL from the class SHAPE and override the function area() of base class to find the area of individual shape. Use virtual function.
20. Write a program to show returning current object, accessing member data of current object and returning values of object using this pointer.
21. Design a class employee with relevant emp details. Read the details of n emp from the keyboard and write it into a File named empdetails. At the end of writing every n emp details read them back from the same file and display into the screen. Use separate functions to write and read into and out of the file.
22. Addition / Subtraction / Multiplication of complex numbers using classes.
23. Define a class to represent a bank account. Include the following members: Data Members:
1. Name of the depositor.
2. Account number.
3. Type of account.
4. Balance amount in the account.
Member Functions
1. To assign initial values.
2. To deposit an amount.
3. To withdraw an amount after checking the balance.
4. To display name and balance.
24. Assume that a bank maintain two types of accounts for customers, one called as saving account and the other as current account. The saving account provides compound interest and withdrawal facilities, but no check book facility. The current account provides check book facility but no interest. Current account holders should maintain a minimum balance and if the balance falls below this level, a service charge is imposed. Create a class ACCOUNT that stores customer name, account number and type of account. From this derive the classes CURR_ACCT and SAVE_ACCT to make them more specific to their requirements. Include necessary member functions in order to achieve the following tasks:
1. Accept deposit from a customer and update the balance.
2. Display the balance.
3. Compute and deposit interest.
4. Permit withdrawal and update balance.
5. Check for the minimum balance, impose penalty if necessary and update the balance.
Note: Do not use constructors. Use member functions to initialize the class members.
25. Create a base class called shape. Use this class to store two double type values that could be used to compute the area of figures. Derive two specific classes called TRIANGLE and RECTANGLE from the base SHAPE. Add to the base class, a member function get_data() to initialize base class data members and another member function display_area() to compute and display the area of figures. Make display_area() as a virtual function and redefine this function in the derived class to suite the requirements.

TEACHING SCHEDULE

No of Weeks	Dates	Session	Topic
1	18-11-2019 To 23-11-2019	1	Program to find the factorial of a number using recursion.
		19 Nov	Union Inauguration
		2	Program to find whether the given number belongs to Fibonacci series.
		3	Program to find whether the string is palindrome or not. Use pointers.
		23 Nov	Sports Day
2	25-11-2019 To 29-11-2019		Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
3	01-12-2019 To 05-12-2019		Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
4	09-12-2019 To 13-12-2019	4	Write a program to sort n numbers.
		12 Dec	Arts Day
		13 Dec	Arts Day
5	16-12-2019 To 20-12-2019	5	Program to find biggest, smallest, sum and difference of two numbers using inline function
		6	Program to find the area and volume of respective figures using function overloading
		20 Dec	Christmas Celebration
6	23-12-2019		Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday

No of Weeks	Dates	Session	Topic
	To 28-12-2019		Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
7	30-12-2019 To 03-01-2020	7	Program to add one day to a given date.
		8	Program to add one day to a given date.
		02 Jan	Mannam Jayanthi – Holiday
8	06-01-2020 To 10-01-2020	9	Program to add and subtract two matrices.
		10	Program to add and subtract two matrices.
		11	Program to show stack operations.
9	13-01-2020 To 17-01-2020	12	Create a class time comprises hr, min and sec. as member data and add() and display() as member functions. Use constructor to initialize the object. write a main function to add two time objects, store it in another time object and display the resultant time
		13	Create a class time comprises hr, min and sec. as member data and add() and display() as member functions. Use constructor to initialize the object. write a main function to add two time objects, store it in another time object and display the resultant time
		14	Program to negate the elements of an array. Use operator overloading function with the operator-.
10	20-01-2020 To 24-01-2020	20 Jan	First Internal II Semester UG
			First Internal II Semester UG
		22 Jan	First Internal II Semester UG
11	27-01-2020 To 31-01-2020	15	Program to negate the elements of an array. Use operator overloading function with the operator-.
		16	Define a class student with name, reg. no, date of birth and name of college as member data and functions to get and display these details. Design another class Test with subjects of study and grade for each subject as member data and corresponding input and output functions. Derive a class Result from both Student and Test classes and Print the Result of each student with relevant information.
		17	Define a class student with name, reg. no, date of birth and name of college as member data and functions to get and display these details. Design another class Test with subjects of study and grade for each subject as member data and corresponding input and output functions. Derive a class Result from both Student and Test classes and Print the Result of each student with relevant information.
12	03-02-2020	18	Start with an array of pointers to strings representing the

No of Weeks	Dates	Session	Topic
	To 07-02-2020		days of the week. Provide functions to sort the strings into alphabetical order. Use pointers.
		19	Start with an array of pointers to strings representing the days of the week .Provide functions to sort the strings into alphabetical order. Use pointers
		20	Create a class person with personal details. Define two functions, set details and print details. Declare array of pointers to person class and write a main function to set and print the details of n persons using pointers.
13	10-02-2020 To 14-02-2020	21	Create a class person with personal details. Define two functions, set details and print details. Declare array of pointers to person class and write a main function to set and print the details of n persons using pointers
		22	Design two classes A and B with member data n1 and n2 respectively. Set values for each one. Write a program to interchange the values of both A and B. Use friend function
		23	Design two classes A and B with member data n1 and n2 respectively. Set values for each one. Write a program to interchange the values of both A and B. Use friend function
14	17-02-2020 To 22-02-2020	24	Design a class SHAPE with dimensions d1 and d2 as member data and area() as member functions to find the area of a shape. Derive three classes RECT,TRIANG and CIRCL from the class SHAPE and override the function area() of base class to find the area of individual shape. Use virtual function.
		21 Feb	Mahasivaratri – Holiday
		25	Design a class SHAPE with dimensions d1 and d2 as member data and area() as member functions to find the area of a shape. Derive three classes RECT,TRIANG and CIRCL from the class SHAPE and override the function area () of base class to find the area of individual shape. Use virtual function.
15	24-02-2020 To 28-02-2020	24 Feb	College Day
		26	Write a program to show returning current object, accessing member data of current object and returning values of object using this pointer.
		27	Write a program to show returning current object accessing member data of current object and returning values of object using this pointer.
16	02-03-2020 To	28	Design a class employee with relevant emp details. Read the details of n emp from the keyboard and write it into a File named emp details. At the end of writing every n emp details read them back

No of Weeks	Dates	Session	Topic
	07-03-2020		from the same file and display into the screen. Use separate functions to write and read into and out of the file
		29	Design a class employee with relevant emp details. Read the details of n emp from the keyboard and write it into a File named emp details. At the end of writing every n emp details read them back from the same file and display into the screen. Use separate functions to write and read into and out of the file.
		30	Addition / Subtraction / Multiplication of complex numbers using classes
17	09-03-2020 To 13-03-2020	31	Addition / Subtraction / Multiplication of complex numbers using classes
		32	Define a class to represent a bank account. Include the following members: Data Members: 1. Name of the depositor. 2. Account number. 3. Type of account. 4. Balance amount in the account. Member Functions 1. To assign initial values. 2. To deposit an amount. 3. To withdraw an amount after checking the balance. 4. To display name and balance.
		33	Assume that a bank maintain two types of accounts for customers, one called as saving account and the other as current account. The saving account provides compound interest and withdrawal facilities, but no check book facility. The current account provides check book facility but no interest. Current account holders should maintain a minimum balance and if the balance falls below this level, a service charge is imposed. Create a class ACCOUNT that stores customer name, account number and type of account. From this derive the classes CURR_ACCT and SAVE_ACCT to make them more specific to their requirements. Include necessary member functions in order to achieve the following tasks: 1. Accept deposit from a customer and update the balance. 2. Display the balance. 3. Compute and deposit interest. 4. Permit withdrawal and update balance. 5. Check for the minimum balance, impose penalty if necessary and update the balance. Note: Do not use constructors. Use member functions to initialize the class members.
18	16-03-2020	34	Create a base class called shape. Use this class to store

No of Weeks	Dates	Session	Topic
	To 20-03-2020		two double type values that could be used to compute the area of figures. Derive two specific classes called TRIANGLE and RECTANGLE from the base SHAPE. Add to the base class, a member function get data() to initialize base class data members and another member function display area() to compute and display the area of figures. Make display area() as a virtual function and redefine this function in the derived class to suite the requirements.
		35	Create a base class called shape. Use this class to store two double type values that could be used to compute the area of figures. Derive two specific classes called TRIANGLE and RECTANGLE from the base SHAPE. Add to the base class, a member function get data() to initialize base class data members and another member function display area() to compute and display the area of figures. Make display area() as a virtual function and redefine this function in the derived class to suite the requirements.
		36	PRACTICAL MODEL EXAM
19	23-03-2020 To 27-03-2020	23 Mar	Second Internal II Semester UG
			Second Internal II Semester UG
			Second Internal II Semester UG
			Second Internal II Semester UG
			Second Internal II Semester UG
			Second Internal II Semester UG
20	30-03-2020 To 03-04-2020		Study Leave
			Study Leave
			Study Leave
			Study Leave
			Study Leave
			Study Leave
21	06-04-2020	06 April	University Exam II Semester UG Begin

Subject Code:	**2C02 MAT-BCA**
Subject Name:	**Mathematics for BCA II**
No. of Credits:	**4**
No. of Contact Hours:	**72**
Hours per Week:	**4**
Name of the Teacher:	**Remya Raj**

Objective: -

1: Understand Functions of two or more variables, limits and continuity.
2: Understand partial derivatives, homogeneous functions, Euler's theorem on homogeneous functions, total derivative, differentiation of implicit functions and change of variables.
3: Understand basics of integration, Integration by parts, trigonometric integrals, trigonometric substitutions and integration of rational functions by partial fractions.
4: Understand Polar co-ordinates.
5: Understand Reduction formulae for trigonometric functions and evaluation of definite integrals
6: Understand Double and Iterated Integrals over rectangles, double integrals over general regions and triple integrals in rectangular coordinates.
7: Understand Eigen values, Eigen vectors, properties of Eigen values, Cayley-Hamilton theorem, reduction to diagonal form, similarity of matrices, powers of a matrix, reduction of quadratic form to canonical form and nature of a quadratic form

Module –I:

Differential Calculus - Partial Differentiation (16 hours)
Text: Higher Engineering Mathematics (41st edition), B.S. Grewal
Functions of two or more variables, limits, continuity, partial derivatives, homogeneous functions, Euler's theorem on homogeneous functions, total derivative, differentiation of implicit functions, change of variables. (Sections 5.1, 5.2, 5.4, 5.5, 5.6)

Module – II:

Integral Calculus – Integration and Integration by Successive Reduction (20 hours)
Text: Integral Calculus, Santhi Narayanan and P.K. Mittal, S. Chand
Basics of Integration – Integration by parts, trigonometric integrals, trigonometric substitutions, integration of rational functions by partial fractions (Sections 8.1, 8.2, 8.3, 8.4, 8.5)

Integration of Trigonometric Functions: Integration of $\sin^n x$ where n is a positive integer $\sin^n x$, Integration of evaluation of the definite integral $\int_0^{\pi/2} sin^n\, x\, dx$, Integration of $\cos^n x$, evaluation of the definite integral $\int_0^{\pi/2} cos^n\, x\, dx$,Integration of $\sin^n x \cos^n x$ evaluation of the definite integral $\int_0^{\pi/2} sin^n\, x\, cos^n\, x\, dx$, integration of $\tan^n x$ (Derivation of formulae omitted) (Sections 4.1, 4.1.1, 4.2, 4.2.1, 4.3, 4.3.1, 4.4.1)

Module – III:

Integral Calculus – Multiple Integrals (14 hours)
Text: Thomas' Calculus (12th edition), Maurice D. Weir and Joel Hass, Pearson India Education Services, 2016
Polar co-ordinates, Double and Iterated Integrals over rectangles, double integrals over general regions, triple integrals in rectangular co-ordinates (Sections 11.3, 15.1, 15.2, 15.5)

Module – IV:

Linear Algebra - Eigen Values and Cayley-Hamilton Theorem (22 hrs)
Text: Higher Engineering Mathematics (41st edition), B.S. Grewal
Eigen values, eigen vectors, properties of eigen values, Cayley- Hamilton theorem (without proof),reduction to diagonal form, similarity of matrices, powers of a matrix, reduction of quadratic form to canonical form, nature of a quadratic form, **(**Sections 2.13, 2.14, 2.15, 2.16, 2.17, 2.18)

Books for Reference

1. Differential and Integral Calculus, S. Narayanan and T.K.M. Pillay, S. Viswanathan Printers and Publishers, Chennai
2. Calculus (10th edition), Anton, Bivens, Davis, Wiley-India
3. A Textbook of Matrices, Shanti Narayan and P.K. Mittal, S. Chand & Co
4. Theory of and Problems of Matrices, Frank Ayres JR, Schaum's Outline Series, McGraw- Hill Book Company
5. Advanced Engineering Mathematics (10th edition), E. Kreyszig, Wiley

TEACHING SCHEDULE

No of Weeks	Dates	Session	Topic
1	18-11-2019 To 23-11-2019	1	Functions of two or rmore variables, introduction, examples
		19 Nov	Union Inauguration
		2	Limits,continuity, examples
		3	Problems
		4	Partial derivatives, examples
		5	Problems
		23 Nov	Sports Day
2	25-11-2019 To 29-11-2019		Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
3	01-12-2019 To 05-12-2019		Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
			Semester Break
4	09-12-2019 To 13-12-2019	6	Homogeneous functions, examples, problems
		7	Problems
		8	Euler'stheorem on homogeneous functions, problems
		9	Problems
		10	Total derivative, problems
		11	Problems
		12 Dec	Arts Day

No of Weeks	Dates	Session	Topic
		13 Dec	**Arts Day**
5	**16-12-2019 To 20-12-2019**	12	Differentiation of implicit functions, problems
		13	Problems
		14	Change of variables, problems
		15	Problems
		20 Dec	**Christmas Celebration**
6	**23-12-2019 To 28-12-2019**		**Christmas – Holiday**
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
			Christmas – Holiday
7	**30-12-2019 To 03-01-2020**	16	**Class test**
		17	Module 2- Basics of Integration, introduction
		18	Integration by parts, problems
		19	Problems
		02 Jan	**MannamJayanthi – Holiday**
		20	Trigonometric integrals, problems
8	**06-01-2020 To 10-01-2020**	21	Problems
		22	Trigonometric substitutions, problems
		23	Problems
		24	Integration of rational functions by partial fraction, problems
		25	Problems
		26	Integration of sin*nx* where *n* is a positive integer, problems
9	**13-01-2020 To 17-01-2020**	27	Problems
		28	Evaluation of the definite integral $\int_0^{\pi/2} sin^n\, x\, dx$, problems
		29	Problems
		30	Integration of cos^n *x*,*problems*
		31	Problems
		32	Evaluation of the definite integral $\int_0^{\pi/2} cos^n\, x\, dx$,problems
10	**20-01-2020 To**	**20 Jan**	**First Internal II Semester UG**
			First Internal II Semester UG
		22 Jan	**First Internal II Semester UG**

No of Weeks	Dates	Session	Topic
	24-01-2020	33	Integration of $\sin^n x \cos^n x$,*problems*
		34	Evaluation of the definite integral $\int_0^{\pi/2} sin^n\ x\ cos^n\ x\ dx$,problems
		35	Integration of $\tan^n x$,*problems*
11	27-01-2020 To 31-01-2020	36	**Class test**
		37	Polar co-ordinates, introduction, examples
		38	Double and Iterated Integrals over rectangles, problems
		39	Problems
		40	Problems
12	03-02-2020 To 07-02-2020	41	Double integrals over general regions, problems
		42	Problems
		43	Problems
		44	Triple integrals in rectangular co-ordinates, problems
		45	Problems
13	10-02-2020 To 14-02-2020	46	Problems
		47	Problems
		48	**Revision**
		49	**Class test**
14	17-02-2020 To 22-02-2020	50	Eigen values, examples
		51	Problems
		52	Eigen vectors, examples
		21 Feb	**Mahasivaratri – Holiday**
		53	Problems
15	24-02-2020 To 28-02-2020	24 Feb	**College Day**
		54	Properties of eigen values, examples
		55	Cayley-Hamilton theorem,problems
		56	Problems
		57	Reduction to diagonal form, problems
16	02-03-2020 To 07-03-2020	58	Problems
		59	Problems
		60	Similarity of matrices, problems
		61	Problems
		62	Powers of a matrix, examples
17	09-03-2020 To 13-03-2020	63	Reduction of quadratic form to canonical form, problems
		64	Problems
		65	Problems
		66	Nature of a quadratic form, problems
		67	Problems

No of Weeks	Dates	Session	Topic
18	16-03-2020 To 20-03-2020	68	Problems
		69	Problems
		70	**Revision**
		71	**Revision**
		72	**Class test**
19	23-03-2020 To 27-03-2020	23 Mar	**Second Internal II Semester UG**
			Second Internal II Semester UG
			Second Internal II Semester UG
			Second Internal II Semester UG
			Second Internal II Semester UG
			Second Internal II Semester UG
20	30-03-2020 To 03-04-2020		**Study Leave**
			Study Leave
			Study Leave
			Study Leave
			Study Leave
			Study Leave
21	06-04-2020	06 April	**University Exam II Semester UG Begin**