RAMAIAH
College of Arts, Science & Commerce

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M S Ramaiah College of Arts, Science and Commerce
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Ref. No. MSRCASC/BTG/2023-24/38 **Date: 08-12-2023**

CIRCULAR

Department of Biotechnology & Genetics
(An IQAC Initiative)

The Department of Biotechnology & Genetics is organising a Guest lecture on **"Multimodal Functional Brain Imaging and Neuromodulation"** by **Prof. Dr. Ranganatha Sitaram,** Director, Multimodal Functional Brain Imaging Hub working at St. Jude Children's Research Hospital, United States, from 10.30am to 11.30am on Dec 11, 2023. The faculty and students belonging to Science stream are the targeted audience and request you to attend the lecture.

Venue: APJ Abdul Kalam auditorium,

MSRCASC campus

Dr. Radha Dayanidhi,
Dr. Pramod Desai
Conveners,
Dept. of Biotechnology & Genetics

Dr. Lakshmikanth R.N.
HOD,
Dept. of Biotechnology & Genetics

Dr. Pushpa H.
Vice Principal

Dr. Vatsala G.
Principal
Principal,
M.S. Ramaiah College of Arts, Science & Commerce
MSRIT Post, MSR Nagar
Bangalore - 560 054

Organizing Committee

Dr. Vatsala G
Principal
Dr. Pushpa H
Vice Principal
Dr. Channarayappa
Professor & Research Head
Dr. Lakshmikanth R N
HOD & Associate Professor
Dr. Savitha
Research Team
Dr. Ramesha N
Research Team
Dr. D R Jayashree, Professor
Dr. Ramakrishnaiah T N, Assistant Professor
Dr Sowbhagya R, Assistant Professor
Dr. Radha Dayanidhi, Assistant Professor
Dr. Geetika Pant, Assistant Professor
Dr. Vinutha M, Assistant Professor
Dr. Pramod Desai, Assistant Professor
Dr. Rashmi Nagesh, Assistant Professor
Ms. Beaulah Angel, Assistant Professor
Dr. PavithraKumari H, Assistant Professor
Dr. Muktha, Assistant Professor
Dr. Sathish Babu H, Assistant Professor
Dr. Vijaylakshmi, Assistant Professor

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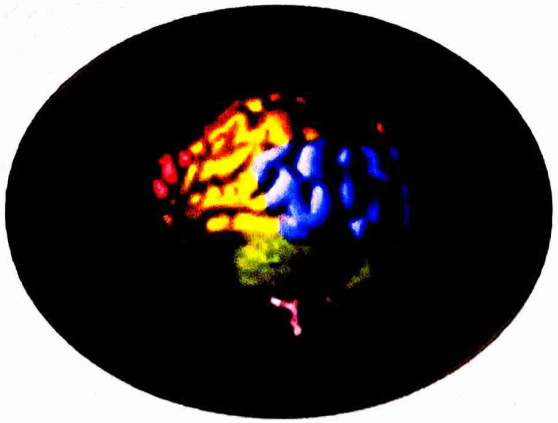
Patrons

Dr. M R Jayaram
Hon'ble Chairman, GEF
Sri. M R Janakiram
Hon'ble Director, GEF
Sri. M R Kodandaram
Hon'ble Director, GEF
Sri. B S Ramaprasad
Chief Executive, GEF (Eng. & GS)
Sri. G Ramachandra
Chief of Finance, GEF (Eng. & GS)



DEPARTMENT OF BIOTECHNOLOGY AND GENETICS

Organizing Guest Lecture

(An IQAC initiative)

on

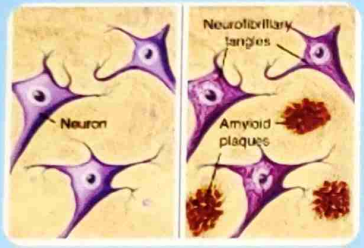
"Multimodal Functional Brain Imaging and Neuromodulation"

RESOURCE PERSON

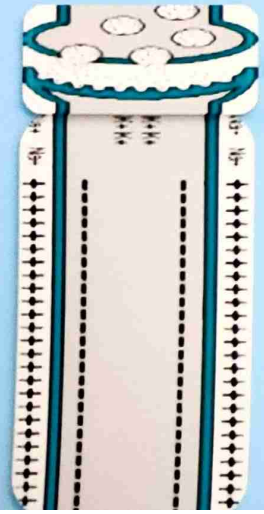
Prof. Ranganatha Sitaram ME, PhD
Director,
Multimodal Functional Brain Imaging Hub
ST. JUDE CHILDREN'S RESEARCH HOSPITAL, USA

Date: December 11, 2023
Time: 10.30am - 11.30am
Venue: APJ Abdul Kalam auditorium, MSRCASC

"MULTIMODAL FUNCTIONAL BRAIN IMAGING AND NEUROMODULATION"



Brain is a complex organ that controls thought, memory, emotion, touch, motor skills, vision, breathing, temperature, hunger and every process that regulates our body. Together, the brain and spinal cord that extends from it make up the central nervous system, or CNS.

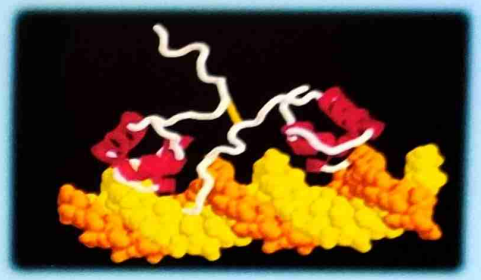


ABOUT THE COLLEGE

Dr. MS Ramaiah, a visionary and philanthropist established "Gokula Education Foundation (GEF)", in the year 1962, to deliver education and healthcare for the betterment of mankind. Under the tutelage of GEF, M. S. Ramaiah College of Arts, Science and Commerce (MSRCASC) was established in 1994. MSRCASC is Re -accredited with "A" Grade by NAAC, permanently affiliated to Bengaluru City University (BCU), and approved by AICTE. It is also recognized under section 2 (f) & 12(B) of the UGC Act 1956. The College has a legacy of organizing workshops, international and national conferences in various disciplines of Science, Commerce and Management in addition to Quality Initiatives in Higher Education.

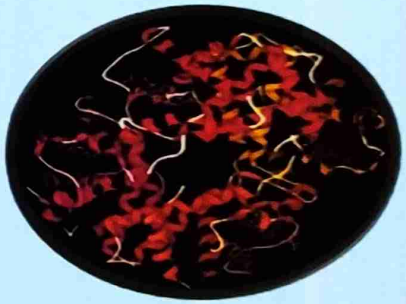
ABOUT THE DEPARTMENT / OBJECTIVES OF THE PROGRAM

Department of Biotechnology and Genetics in the M S Ramaiah College of Arts, Science and Commerce, was established in the year 2000 offering both UG and PG programs. The main objective of the programs is to provide conducive learning environment for the students and to mitigate the shortage of biotechnologists in the field of food, agriculture, medicine and environmental management. Highly qualified and experienced faculty members deliver the lectures and conduct the practical in various subjects of as per the curriculum developed by the Bangalore City University. The department focuses mainly on teaching the basics, applications and hands-on training in a state-of-the-art classroom and laboratory environment. It also facilitates students to broaden their knowledge for multitasking.



Programme Outcome

This talk will focus on Applied level understanding on fundamentals and computational simulation applications of Brain modeling in making students familiar with imaging and multimodal resources available on the web to do multiple tasks.



Programme Convenors

Dr. Radha Dayanidhi

Dr. Pramod Prakash Desai

Department of

Biotechnology and Genetics

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Report on Guest lecture,

'Multimodal Functional Brain Imaging and Neuromodulation'

(An IQAC initiative)

Title: ***'Multimodal Functional Brain Imaging and Neuromodulation'***

Resource Person: Dr. Ranganatha Sitaram, Director at Multimodal Functional Brain Imaging Hub, St. Jude Children's Research Hospital, Memphis, Tennessee, United States

Organizer: Dept. of Biotechnology and Genetics

Date and time: December 11, 2023, 10.30 am-11.30 am

Venue: APJ Abdul Kalam auditorium, MSRCASC, Bengaluru

Participants: UG & PG students (Science stream) and Faculty of Science, M S Ramaiah College of Arts, Science and Commerce, Bengaluru

Objectives

1. To inculcate the students with effective learning and critical thinking
2. To revive the interest of students and provides the opportunity to interact with expertise
3. To foster the students with communication skill and enhance their knowledge
4. The guest lectures was more approachable and appealing to the students

The department of Biotechnology and Genetics organized a Guest lecture for the students belonging to Science stream on December 11, 2023. The guest lecture programme commenced with the welcome address by Dr. Channarayappa, Research Head, and Professor. The resource person was welcomed with the sapling by Dr. Savitha. Later, Dr. Lakshmikanth R.N., Head of the dept. of Biotechnology & Genetics, briefed about the guest lecture. Later Dr. Radha Dayanidhi, Assistant Professor, Dept. of Biotechnology & Genetics introduced the resource person- Dr. Ranganatha Sitaram who had vast international experience besides bestowed with the Indian Prime Minister's

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Bangalore 560 054

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W www.msrcasc.edu.in

Principal,
M.S. Ramaiah College of Arts, Science & Commerce
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Bangalore - 560 054

Special Award called Vajra for Visiting Professorship in Neuroscience, the Indian President's Award for Visiting Professorship in Neuroscience and Neuroimaging. With this brief introduction, called upon the guest Dr. Dr. Ranganatha Sitaram to deliver the lecture. Tejaswini, BSc V sem student anchored the entire program. Dr. Sitaram explained his work about the developing novel scientific techniques for modulating brain activity in selected brain regions and networks to bring about specific changes in sensation, perception, cognition, and action in health and disease. His research combined innovative developments in functional and structural brain imaging, physiological measurement technology, and computational algorithms. He explained his research program at St. Jude integrated multimodal functional brain imaging with experimental and computational neuroscience techniques to understand and characterize adverse changes in brain function and network dynamics due to paediatric cancer and its treatment and to innovate novel techniques of neurorehabilitation to mitigate the effects.

The lecture was informative and ended up with the good interactive session which had good number of queries from students and faculty. The lecture was thought-provoking with research data and examples. The session ended up with whole-hearted thanks speech delivered by Dr. Ramakrishnaiah T.N., Assistant Professor, Dept. of Biotechnology and Genetics, acknowledged the speaker with memento as a token of respect. The feedback form link was sent to students to understand the benefit of the lecture gained by them.

Glimpses of the guest lecture


3
GPS Map Camera
Bengaluru, Karnataka, India
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Lat 13.032011°
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Google


4
GPS Map Camera
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Diagnostic
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Bengaluru, Karnataka, India
Gate No:10, Level 3, A-Block, Ramaiah Institute Of Technology Ms Ramaiah College Of Arts Science & Commerce, above RCASC, M S Ramaiah Nagar, Mathikere, Bengaluru, Karnataka 560054, India
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GPS Map Camera
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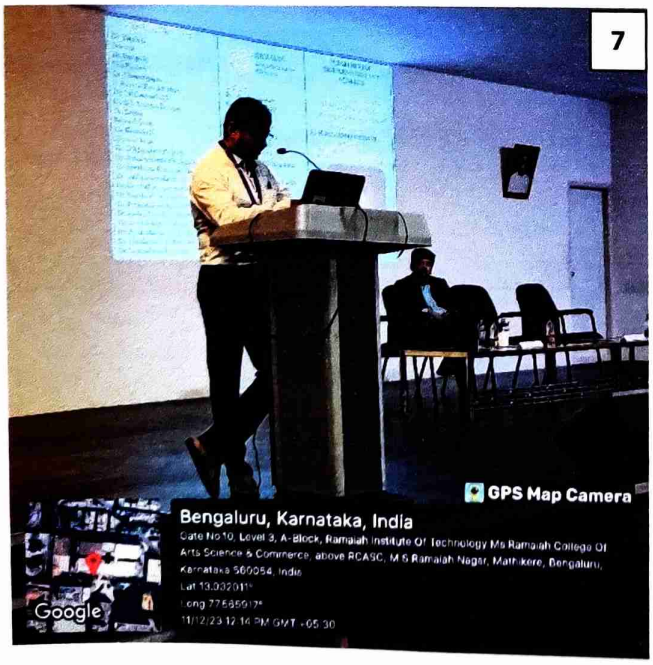
7
GPS Map Camera
Bengaluru, Karnataka, India
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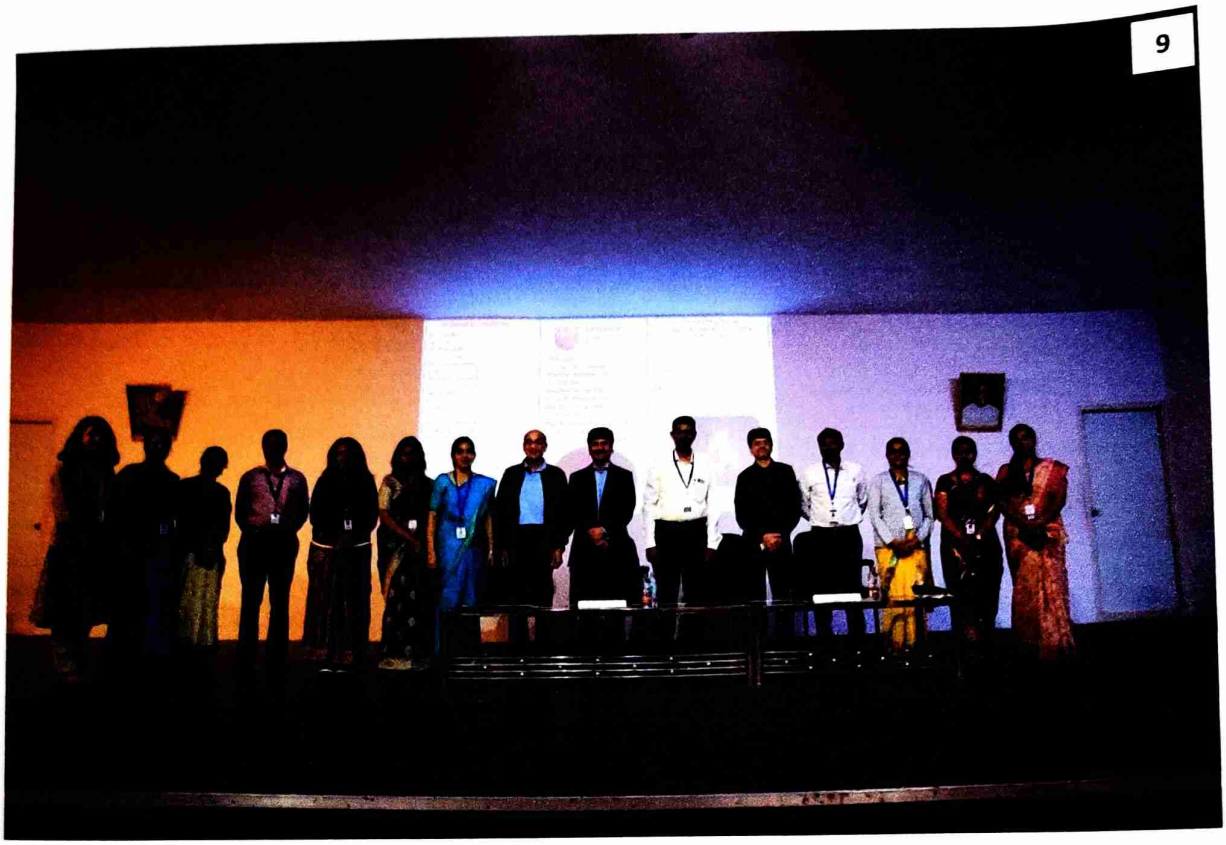
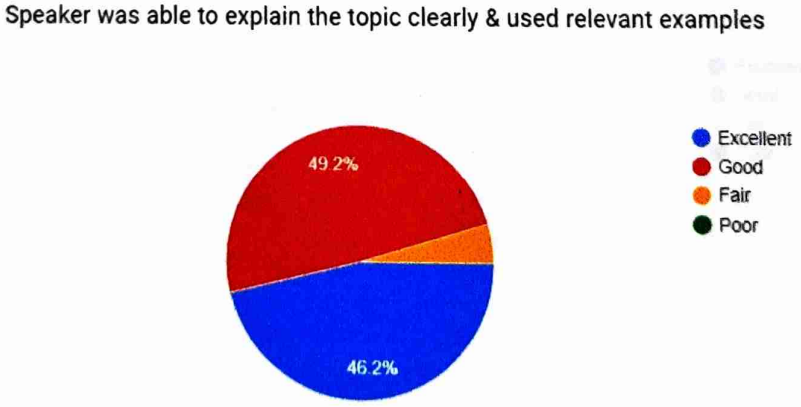
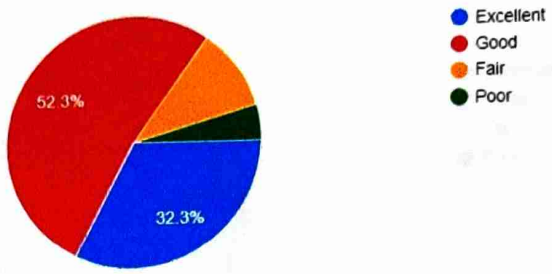


1. Welcome address by Dr. Channarayappa Professor, Research Head, MSRCASC
2. Dr. Lakshmikanth R.N., HOD, Dept. of Biotechnology & Genetics, briefed about guest lecture
3. Students assembled at the auditorium to witness the talk
4. Dr. Radha Dayanidhi, introduced the resource person
5. Dr. Ranganatha Sitaram delivering the lecture
6. Interaction with students (Q & A session)
7. Vote of thanks delivered by Dr. Ramakrishnaiah
8. Token of appreciation presented to Dr. Ranganatha Sitaram
9. Faculty and student of Science stream with Dr. Ranganatha Sitaram

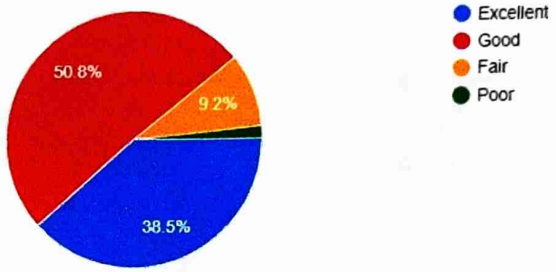
Feedback analysis



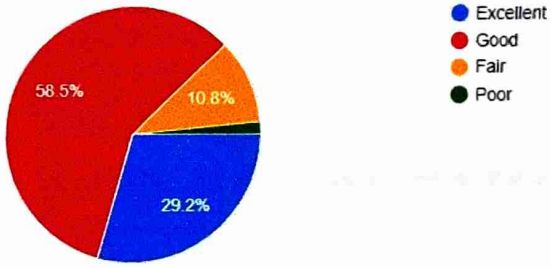
Speaker was able to make the lecture interactive



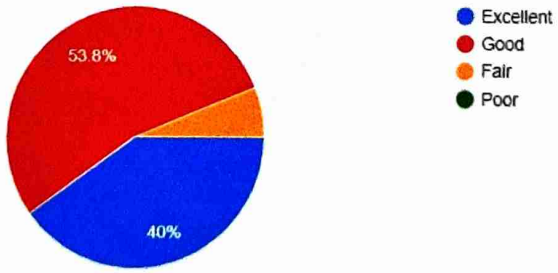
Points presented in logical easy-to-follow sequence?



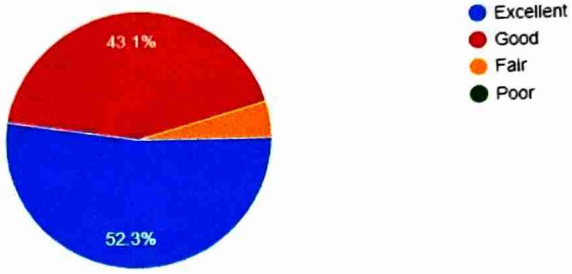
Terminology and the degree of technical detail suitable to this audience?



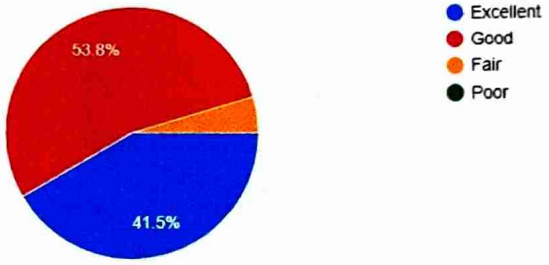
Relevance of material to topic set:



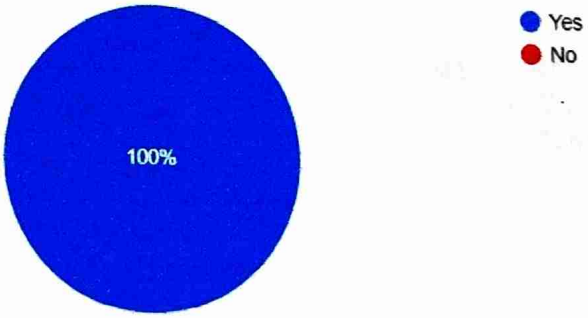
The presentation indicates the speaker's knowledge and understanding of the subject was:



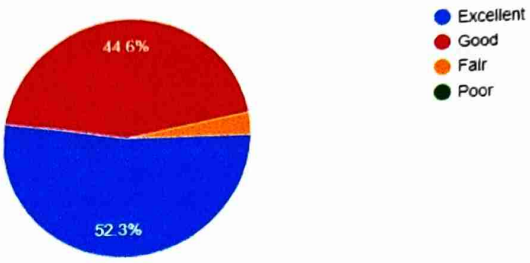
Did the speaker answer the questions well, giving concise and informative replies?



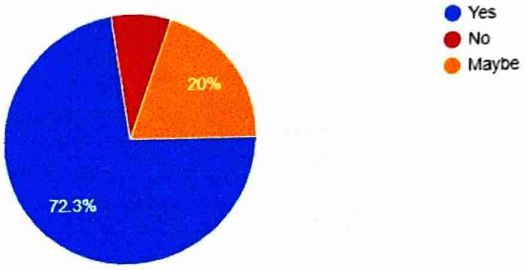
Speaker was able to positively influence my views towards the topic



Verbal communication



In near future, I would like to attend more lectures from the same Speaker



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Guest Lecture on **"Multimodal Functional Brain Imaging and Neuromodulation"**

Organised by

Department of Biotechnology & Genetics

Time: 10.30am-11.30am

Date: Dec 11, 2023

Students' Attendance

Sl. No.	Student name	Class	Signature
1)	MOHAMMED FAIZAN	8th Sem	
2)	Prabhudeva. O	6th Sem	
3)	Prakash	V Sem	
4)	Megha P Ghatnatti	III sem MSc BT	
5)	Sakshi Mathpati	"	
6)	Keerthi·S	MSC BT	
7)	Bindu shree·C·M	MSC BT	
8)	Bhuvana·V	MSC BT	
9)	Mandara·C·A	III SEM BSc	Mandara.C.A
10)	Sakshi·A	III Sem BSc	
11)	Aditi.S	III Sem BSc	
12)	Sanjana.S.B	III Sem BSc	
13.	Reshma·S	III Sem MSc	Reshma.
14	FAYAZ SIRCAR	V SEM BSc	
15	AARUSHI K P	V SEM BSc	
16	NIDHI VERMA	V SEM BSc	
17	THANUJA V S	"	
18	INDERJEET J.S	"	Inderjeet.J.S
19	ARYAN RAGHU	"	Aryan R.
20	VISHWAJIT MAHESH	"	V. Mahesh
21	MUKTHA GOWDA·K R	BSC-BIA 3rd sem	

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Date: Dec 11, 2023

Students' Attendance

Sl. No.	Student name	Class	Signature
1.	N. Anushadevi	BSc. BT-A	Anusha
2.	Aryadhilkumar	MSc BC	Arya
3.	Aardra. R.S	MSc BC	
4.	Yukta. S	MSc BC	Yukta
5	Dakshitha.	MSc BC	Daksh
6.	Swathi R	MSc BC	
7.	Logavarshini. S	MSc BC	
8.	Bhaamika. S	MSc BC	
9.	Jalaja B.S	MSc BC	Jalaja
10.	Anusha. S	MSc BC.	Anusha. S
11.	Sanchita Singh	BSc Bt -B	Singh
12	Shalini S	BSc Bt -B	Shal
13.	Shravya MV	BSc Bt -B	Shravya
14.	Akshitha. E	BSc Bt - A	Akshitha E
15.	Nandini. R	BSc Bt - A	Nandini. R
16	Dhanya Reddy G.P	BSC Bt A	Dhanya Reddy
17	Rithvik	BSC Bt-A	
18	Nachiketa	BSC Bt-B	Nachiketa
19	Mohit Jen	BSC MCJ	
20	Navya N	BSc Bt-C	Navya
21	Syed Naleed Ashraf	BSc Bt-B	Naleed
22	Saion Roy	BSc Bt-B	SR
23.	Ria Raghu	BSC Bt -B	
24.	Ranjitha R.	BSC Bt -B	
25.	Himanshu M.	BSC Bt - A	Himanshu
26.	Varsha. V	MSC BT	Varsha
27	Tharadevi J.S.	MSC- Bt 3rd Sem	Thara

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Department of Biotechnology & Genetics

Time: 10.30am-11.30am Date: Dec 11, 2023

Students' Attendance

Sl. No.	Student name	Class	Signature
1.	Kenz Rahman	BCA 5th sem	
2.	Nived Sreepal	BCA 5th sem	
3.	Abdulla Fahmi	BSC EMCS 5th sem	
4.	Varun. M	BCA 5th sem	
5.	Sumith Kumar	BCA 5th sem	
6.	P. Deepak Dion	BCA 5th sem	
7.	Yeswanth	BCA 5th sem	
8.	Sujay Kumar	BCA 5th	
9.	Yuvraj Narendraswamy	BCA 5th sem	
10.	Prajwal D.D	BCA 5th sem	
11.	Tanisha G	BCA 5th sem	
12.	Chandan S	BCA 5th sem	
13.	Niranjan T. S	BCA 5th sem	
14.	Ashish Ujjini	BCA 5th sem	
15.	Pruthvi. M	BCA 5th sem	
16.	Kushal Kumar	BCA 5th sem	
17	Likith. Abhinav	BCA 5th sem	
18	Harshith K.	BCA 5th sem	
19	Hemanth. B	BCA 5th sem	
20	Sreeraj	BCA 5th sem	
21	Surya Simha reddy.	BCA 5th sem	
22	RajniKanth.	BCA (agnd.	
23	C.R Sujay Reddy	BCA 5th sem	
24	Maruthi	BCA 5th sem	
25	Jesson Samuel Roji	BCA 5th Sem	
26	Sooraj Satheesh	BCA 5th sem	
27	Ajay Krishna	BCA 5th sem	
28	A. Lohith	BCA 5th sem	
29	B. charukesh	BCA 5th sem	
30	Prashant	BCA 5th Sem	

(31)	prasuriya sarma	BCA 5th sem	
(59)	Bhavya Bedi	BCA 5th sem	
~~(33)~~	~~[redacted]~~		
40	Aaron VS	BCA 5th Sem	
41	Harikesh EL	BCA 5th Sem	

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Students' Attendance

Sl. No.	Student name	Class	Signature
01.	Sowjanya. C	M.Sc Bt	
02.	Prasanna. C	M.Sc Bt	
03.	Shashanth. K	M.Sc Bt	
04.	Nandana. S	M.Sc Bt	
05.	Sneha. S	M.Sc Bt	Sneha. S
06.	Chaitra. S	M.Sc Bt	
07.	Dekshithaa. A	M.Sc Bt	
08.	Shilpashree. PV.	M.Sc BT	Shilpa PV.
09.	Varshitha Raju R.	M.Sc BT	
10.	Dhivyalakshmi. k	M.Sc BT	
11.	Fadeeh Farooque.	M.Sc BT	
12.	Gaurav Singh. R	BSc. BT-A 3rd Yr	
13.	Md. Jawad. S.	BSC. BT. A 3rd Yr	
14.	AFRAN PASHA	BSc BT - 3rd Yr 'A'	
15.	CHIRAG V.K	BSc BT- 3rd Yr 'A'	
16.	P. Anvesh	BSC BT- 3rd Yr A	
17	AMRUTH. N	B.SC BT A Sec	
18.	Faesal Khan. M	M.Sc BT III	
19	Nidhi Pandey	Msc BT II nd yr	
20	Naik Sarsha	Msc BT (II nd yr)	
21	Kruthi Km	MSc BT (II nd yr)	
22	Prawallika S.	MSc BT (II nd yr)	
	Scanned doc		
23	Syed Issam	MSc BT (II nd yr)	
24	Keerthana	MSc BT (II nd yr)	
25	Padma Shree	Msc BT (II nd yr)	
26.	Rekha Lohar	BSc BT/MB (III Sem)	

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Guest Lecture on **"Multimodal Functional Brain Imaging and Neuromodulation"**

Organised by

Department of Biotechnology & Genetics

Time: 10.30am-11.30am

Date: Dec 11, 2023

Students' Attendance

Sl. No.	Student name	Class	Signature
1	Y. keerthana	BCA - 5th sem	
2.	S. Jagruthi	BCA - 5th sem	S. Jagruthi
3.	Anaiwara. S	BCA - 5th sem	Anaiwara. S.
4.	Aakanksha. V	BCA - 5th sem	
5.	Thanu Shree MP	BCA - 5th sem	
6.	Gagana Shree	BCA - 5th sem	
7.	Spandana Lokesh	BCA - 5th sem	Spandhana
8.	Varshini. N	BCA - 5th sem	Varshini. N
9.	kavana	BCA - 5th sem	kavana
10.	Deepika krishna	BCA - 5th sem	
11.	Navya	BCA - 5th sem	
12.	Janani	BCA - 5th sem	Janani
13.	Amrutha	BCA - 5th sem	Amrutha
14.	G.K Deepika	BCA - 5th sem	Deepika
15.	Anamika	BCA - 5th sem	Anamika
16.	Jeevitha	BCA - 5th sem	Jeevitha. K.R
17.	Neha	BCA - 5th sem	Neha
18.	Tanya	BCA - 5th sem	
19.	Srijha	BCA - 5th sem	
20.	Arya	BCA - 5th sem	Arya
21.	Bhoomika. s patil	BCA - 5th sem	Bhoomika. S. Patil
22.	Deepak S	BCA - 5th Sem	
23.	J. Nagavardhan Reddy	BCA - 5th sem	
24.	Shivaramakrishna. P	BCA - 5th sem	
25.	Dharushkumar	BCA - 5th Sem	
26.	Mohit Raj	BCA - 5th Sem	Mohit Raj
27.	Harsh Tiwari	BCA - 5th Sem	Harsh

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Department of Biotechnology & Genetics

Time: 10.30am-11.30am

Date: Dec 11, 2023

Students' Attendance

Sl. No.	Student name	Class	Signature
1.	K. LALITH KRISHNA	3rd semester A BSC BT/MB	Lalith krishna
2.	Deekshitha. MS	3rd sem A BSC BT/MB	
3.	Hastha. D	3rd sem A BSC BT/MB	
4.	Ananya. S	3rd sem A BSC BT/MB	
5.	Jishnu Roberta	3rd sem A BSC BT/MB	
6.	Sri Vidya. KK	3rd sem A BSC BT/MB	
7.	Nihaarika SN	3rd sem A BSC BT/MB	
8.	Nischal	3rd sem A BSC BT/MB	
9.	Lakshmi Srauya	BSC BT/MB	
10.	Janika. N.D	BSC BT/MB	
11	Saman Tahniat	BSC BT/MB	
12	Rovoori Vedakshavi	BSC BT/MB	
13	N. Ajay Amirtharaj	BSC BT/CHEM	
14	Arnab Saha	BSC BT/MB	
15.)	Nandu krishna	BSC BT/MB	
16.)	Eshwar K.M	BSC BT/MB	
17.)	Rahul S	BSC BT/MB	
18.)	Mohammed Zain	BSC BT/MB	
19.)	Ashmith Ashok	BSC BT/MB	
20.)	Saptarshee Das	BSC BT/MB	
21.	Chandana. N.L	BSC MB/Gen	
22.	Vasavi. H	BSC MB/Gen	
23.	Poorvitha. R	BSC MB/Gen	
24.	Kavanya DM	BSC MB/Gen	
25.	Supritha M	BSC MB/Gen	
26.	Vaibhavi Lakshmi	BSC MB/Gen	
27.	Abhishek.	BSC - Biochem MB	

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Department of Biotechnology & Genetics

Time: 10.30am-11.30am

Date: Dec 11, 2023

Students' Attendance

Sl. No.	Student name	Class	Signature
1	Suchita Kumari	BSc [Gen] V th sem	Suchita
2	Sneha G.	BSc [Gen] V th sem	
3	Avani Shibu	BSc [BT] V th sem	
4	Abhikhyaa	BSc [Gen] V th sem	Abhikhyaa
5.	Chahat Singh	BSc [BT] 5th sem	Chahat Singh
6.	Gurpreet Kaur	BSC [BT] 5th sem	G. Kaur
7.	Sangeetha. V	BSc BT MB 3rd sem	
8	Varsha. P	BSc BT 5th sem	Varsha. P
9	Tejesmini. P	BSc BT 5th sem	Tejesmini P
10	Jyothishmitha	Bsc Gen 5th sem	Jyothi
11	Rituja Biswas	Bsc Gen 5th sem	Rituja
12	Samreen. A. Patel	BSc Gen 5th sem	Patel
13	Shilpy Chandra	Bsc Gen 5th sem	Shilpy
14	M. Lavanya	B.Sc Gen 5th sem	Lavanya
15	P.L. Sai Niruksha	B.Sc Gen 5th sem	Niruksha
16	Aditi. C. Yere Kuppi	BSc Gen 5th sem	Aditi
17	Simran	BSc [Gen] 5th sem 'C'	
18	Faiza Khan	BSc BT 5th sem 'A'	Faiza
19	Aliya Khan	" " "	
20	Nejuma. N	BSc BT 5th sem 'A'	
21	Chinali Urs CM	BSc Gen 5th sem 'C'	
22	Roopa CH	BSc Gen 5th sem 'C'	
23	Naga keerthi	BSc Gen 5th sem 'C'	
24	Goneri. U	BSc Gen 5th sem 'C'	Goneri U
25	Akshitha. J	BSc Gen 5th sem 'C'	Akshitha J
26.	Sameesha. S	Bsc. Gen 5th sem 'C'	Sameesha S
27.	Pragna. D.S	Bsc. Gen 5th sem 'C'	Pragna D.S

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Organised by

Department of Biotechnology & Genetics

Time: 10.30am-11.30am

Date: Dec 11, 2023

Students' Attendance

Sl. No.	Student name	Class	Signature
1.	Bindu Vaishnavi. M	3rd year. BSc (CMB, BC)	Bindu
2.	Deepthangi .P.	3rd year BScBT	Deeptangi
3	Varsha. S.R	3rd year BScBT	Varsha
4	Trupthi. M	3rd year BSc.BT	Trup
5.	Shreya. K	3rd year, BSc, (BC)	Shreya
6.	GOKULKRISHNA	3rd year, BSc	Gokul
7	Karthik N.R	3rd year BSc	Karthik
8	Abhishek (from BSC BC)	3rd year BSc	Abhishek
9	Shreyas. S Hegde	3rd year BSC (MBPC)	Shr
1.	Sayata Choudhury	MSC - BT	Sayata
2.	Kausceika Roy	MSc - BT	[illegible]
3	Bhoomika. N	MSc - BT	Bhoomika. N
4.	Jai Shree. R	MSc - BT	[illegible]
5	Nandini. G	MSc - BT	Nandini
6	Likhitha. P	MSc - BT	[illegible]
7	Mithali. M	MSc BT	Mithali
8.	Sireesha D	MSc BT	[illegible]
9.	Nithyashree M.S	MSc BT	Nithya
10.	Adarsh Tamang	"	A
11.	Hariharan	"	Ha
12.	Anas	"	Anas
13	Keerthana. S.N	"	Ket
14	Adarsh. A. C	"	Adarsh
15.	Yashaswini. V	MSc BT	Yashaswini. V
16.	Thanushree. R	MSc BT	Thanushree. R
17.	Kavya Shree. B.T.	MSc BT	Kavya Shree B.T.

(Margin note beside rows 1–17: 1st Year MSC BT)

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Organised by

Department of Biotechnology & Genetics

Time: 10.30am-11.30am

Date: Dec 11, 2023

Students' Attendance

Sl. No.	Student name	Class	Signature
01	Vasudha K	5th sem B'Sc BTMB	Vasudhak
02	Yashaswini KN	BSc BT MB 5th sem B'Sc	Yashaswini K.N
03	Ankitha.B	BSc BT MB 5th Sec A-Sec	Ankitha.B
04	Megha. H.R	BSc BT MB 5th A-Sec	Megha.H.R
05	Nayanashree S.N	BSc. BT. MB V th A-Sec. Sem	
06	Nisarga. B.	—11—	Nisarga.B.
07	Gnani Akhila	—11—	
08	Lavanya. A. K	—11—	Lavanya
09	Kruthi. N. Sharma	—11—	Kruthi. N. Sharma
10	Dashini. G	—11—	Dashini
11	Kavya Somshekar Jhetar	—11—	Kavya
12	Chavitha. P	BSc-BT 5th sem	Chavitha.P
13	M. Lavanya	B.Sc Gen 5th Sem C-ca	Lavanya
14	MICHELLE SARAH ROY	BSc BT/MB 5th sem	MICHELLE
15	~~P.E~~. Ananya. G	BSc BT/MB 5th sem	Ananya.G
16	Kavya. M	—11—	
17	Lekhana. V	—11—	V
18	Aathira. S	—11—	Aathira
19	Alaina Khan	—11—	Alaina K
20	Karthik. U	—11—	
21	Tejaswini. P	—11—	Tejaswini
22	Varsha. P	—11—	Varsha
23	Bipasha Singh	11	
24	Prathyusha. C	MSc BT - 1st sem	
25	Yashaswini. N	11	Yashaswini
26	Prathiksha. M	11	
27	Mala. S	MSc BT - 1st sem	

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Guest Lecture on **"Multimodal Functional Brain Imaging and Neuromodulation"**

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Department of Biotechnology & Genetics

Time: 10.30am-11.30am

Date: Dec 11, 2023

Students' Attendance

Sl. No.	Student name	Class	Signature
	B B. Madhu Meghana	IV^th sem 'A'	
	N. Lakshmi Bhavani	I Sem A	
	P. V. Deepika	I Sem A	
	JOYSRI DEY	M.Sc BC	Joysri.
	SANDHYA. J	M.Sc BC	Sandhya. J
	JYOTHIKA. A	Msc-BC	
	H V Vijayalakshmi	MSC - Bt	
	Shubhashree P.m	MSC - Bt	
	Anusha kumari	11	
	Ashwini	11	
	Anushree	11	
	Lekhana	11	
	Janani	11	
	Deeksha. N	V sem 'C'	Deeksha. N
	A. Sandhya	V sem 'C'	
	Jyothi Smitha	V sem 'C'	
	Rithuja Biswas	V sem 'C'	
	Khadeejathul Safwana	V sem 'C'	
	Gauri krishna	V sem 'C'	
	Susmina P.S	V sem 'C'	
	Roopa Shree. G	V Sem BSc 'B'	RoopaShreeG
	Sushma. N	V Sem BSc 'B'	Sushma. N
	Sheetal. K	11	Sheetal. K
	Shreya. JM	11	
	Queeney Raina	11	
	SNEHA VARADARAJ	V SEM BSc 'C'	
	Chiranjeevi Sai Deva PK	I Sem BSc	

Principal,
M.S. Ramaiah College of Arts, Science & Commerce
MSRIT Post, MSR Nagar
Bangalore - 560 054

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MSRCASC/Chem-Bio/24-25/

Date: 17/05/2024

CIRCULAR

Department of Chemistry and Biochemistry organizes a guest lecture on 'Exploring Cutting-Edge Research in Elementary Particles: Quarks and Leptons' by Mr. Ranit Banerjee, PMRF, IISc., on 18th May 2024. I request all MSc. Chemistry students to participate actively and make the program successful.

Thanking you.

Co-coordinator

Head of the Department

Head of the Department
CHEMISTRY / BIO-CHEMISTRY
M.S. Ramaiah College of Arts,
Science & Commerce
Bangalore - 560 054

Principal

20/05/24

Principal,
M.S. Ramaiah College of Arts, Science & Commerce
MSRIT Post, MSR Nagar
Bangalore - 560 054

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College of Arts, Science
& Commerce - Autonomous

Guest lecture

on

Exploring Cutting-Edge Research in Elementary particles: Quarks and Leptons'

Speaker

Mr. Ranit Banerjee,

PMRF, IPC Department, IISC.

18 May 2024 | 10.30 am

Co-Ordinator : Dr. Ashly P. C.

Organised by

Department of Chemistry & Biochemistry

M. S. Ramaiah College of Arts, Science and Commerce- Autonomous

MSRIT Post, Bengaluru-54.

RAMAIAH College of Arts, Science & Commerce - Autonomous

DEPARTMENT OF CHEMISTRY & BIOCHEMISTRY

M. S. RAMAIAH COLLEGE OF ARTS, SCIENCE AND COMMERCE-AUTONOMOUS

(Affiliated to Bengaluru city University)

A Report on

The guest lecture on 'Exploring Cutting-Edge Research in Elementary Particles: Quarks and Leptons'

Date: 18 May 2024

Venue: Lecture hall- 404, Department of Chemistry & Biochemistry, MSRCASC

No. of Participants : 18

Speaker: Mr. Ranit Banerjee, PMRF, Department of Inorganic and Physical Chemistry, IISc.

Co-ordinator of the program: Dr. Ashly P. C., Department of Chemistry &Biochemistry, MSRCASC

Introduction:

On May 18, 2024, the Department of Chemistry/Biochemistry organized a highly anticipated guest lecture focusing on elementary particles, with a particular emphasis on research on quarks and leptons. The lecture was delivered by Mr. Ranit Banerjee, an esteemed researcher affiliated with the Department of Inorganic and Physical Chemistry at the prestigious Indian Institute of Science (IISc). The aim of the lecture was to provide attendees with a profound understanding of these fundamental constituents of matter, exploring their properties, interactions, significance in comprehending the universe at its most fundamental level and exploring the cutting edge research on them. The targeted audience were 1st year MSc. Chemistry students.

Overview of the research on Elementary Particles:

The lecture commenced with an elucidation of elementary particles, the building blocks of matter, which are categorized into two main groups: fermions and bosons. Fermions, characterized by their half-integer spin, include quarks and leptons, while bosons, with integer spin, mediate fundamental forces such as the photon and the Higgs boson.

Quarks: Quarks, as elucidated in the lecture, are the constituents of composite particles called hadrons, including protons and neutrons. The Standard Model identifies six types of quarks: up, down, charm, strange, top, and bottom. These quarks possess fractional electric charges and experience the strong nuclear force mediated by gluons, making them subject to the phenomenon of confinement, whereby they are perpetually bound within hadrons.

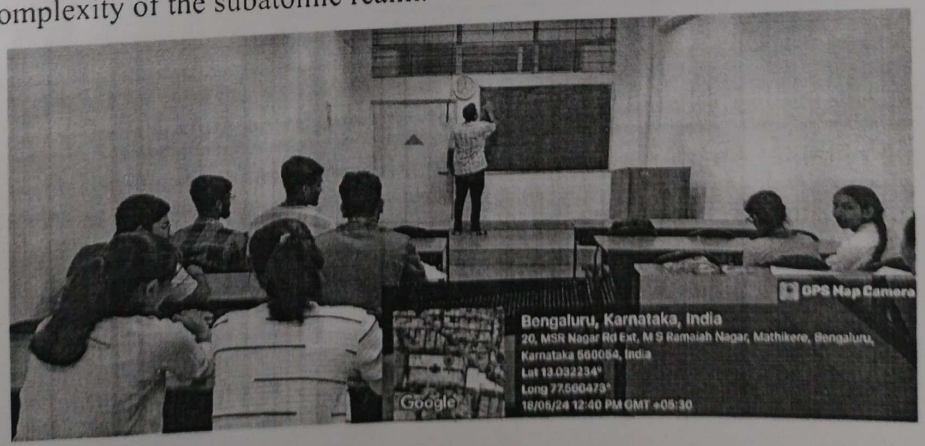
The lecturer delved into the fascinating concept of color charge, an attribute of quarks analogous to electric charge but associated with the strong force. Quarks possess three types of color charge: red,

green, and blue, or their corresponding anticolors (antired, antigreen, antiblue). This concept formed the basis for understanding the behavior of quarks within the framework of quantum chromodynamics (QCD), the theory governing the strong nuclear force.

Leptons: Following the discussion on quarks, the lecture transitioned to leptons, another category of elementary particles. Leptons, unlike quarks, do not experience the strong nuclear force and are not subject to confinement. They include the electron, muon, tau, and their corresponding neutrinos. Leptons have integer electric charges and are governed by the weak nuclear force, responsible for processes such as beta decay. The lecturer emphasized the significance of neutrinos, which possess tiny, if not zero, masses and interact extremely weakly with matter. Neutrino oscillation, a phenomenon observed in recent experiments, suggests that neutrinos can change flavor as they propagate, indicating that they are not massless as previously assumed, but rather undergo quantum mechanical mixing.

Conclusion:

In conclusion, the guest lecture provided a comprehensive overview of the research on elementary particles, focusing on quarks and leptons, their properties, interactions, and implications in our understanding of the universe. The elucidation of these fundamental constituents of matter sheds light on the intricacies of particle physics, contributing to the ongoing quest to unravel the mysteries of the cosmos at its most fundamental level. The insights gleaned from the lecture serve to inspire further exploration and research in the field of particle physics, fuelling the curiosity and passion of both seasoned physicists and aspiring scientists alike. Overall, the guest lecture proved to be an enlightening and intellectually stimulating experience, deepening our appreciation for the profound beauty and complexity of the subatomic realm.



Signature of the Co-ordinator : Dr. Ashly P. C.

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DEPARTMENT OF CHEMISTRY & BIOCHEMISTRY

M. S. RAMAIAH COLLEGE OF ARTS, SCIENCE AND COMMERCE-AUTONOMOUS

(Affiliated to Bengaluru city University)

Attendance Report

of the Guest lecture on 'Exploring Cutting-Edge Research in Elementary Particles: Quarks and Leptons'

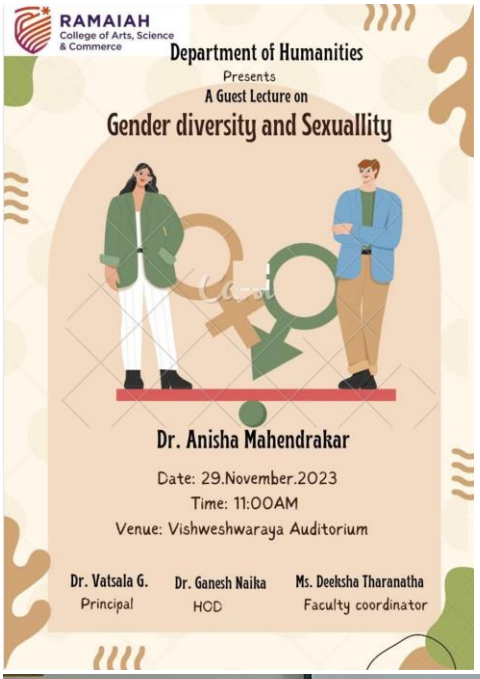
On 18/05/2024

Time: 10.30 am - 12.30 pm

SI No.	Reg. No	Name	Signature
1	P18EV23S032001	Sujith K P	Sujith. K.P
2	P18EV23S032002	Shambu Basavaraj Telagi	Shambu
3	P18EV23S032003	Mangala Gowri S A	Mangala Gowri. S. A
4	P18EV23S032004	Nethravathi K N	Nethravathi. N
5	P18EV23S032005	Kounain	Kounain.
6	P18EV23S032006	Sahana P	Sahana. P.
7	P18EV23S032007	Geethashree P M	Geethashree PM
8	P18EV23S032008	Ramitha E Singh	Ramitha Singh
9	P18EV23S032009	Apoorva S. O	Apoorva S. O
10	P18EV23S032010	Muniraju R	Muniraju R
11	P18EV23S032012	Ananya S. S	Ananya
12	P18EV23S032013	Abhinandan K V	Absent
13	P18EV23S032014	Tarun Y	Tarun. Y
14	P18EV23S032015	B H Shreya	Shreya. B. H
15	P18EV23S032016	Chandrakala P C	Chandrakala P C
16	P18EV23S032017	Pallavi N	Pallavi. N
17	P18EV23S032018	K Bollurappa	B
18	P18EV23S032019	Chandana N J	Chandu. J

Gender Diversity and Sexuality

Date: 27-11-23
Time: 2:30 PM -3:00 PM
Venue: APJ Abdul Kalam Auditorium
Quarter- III
No of Students present - 120
No of Faculty - **6**



On 29th November 2023, Thursday the Department of Humanities, had a guest lecturer seminar. Dr Anisha Mahendrakar was invited to speak on gender diversity and sexuality. The guest lecture took place in the Vishweshwaraya auditorium at 11 am. The seminar was open to departments of all years. BA., B.com, BBA, and B.Sc students were present for the lecture. Nafiya and Likitha of 1st year B.A. welcomed the gathered and addressed the topic of the seminar. Ananya Takuri of B.A. 1st semester introduced the guest Dr Anisha Mahendrakar,

Founder Director of The new age therapist, a psychologist service consultancy located in Bangalore. She is a UNO(2018- youngest achiever award) awardee for her exemplary world in the field of school of counselling and sex education.

The lecture began with how gender is not the same as sex. Sex is the biological makeup of a person, while gender is a social construct. The lecture continued with different genders, LGBTQL+ and intersex. Intersex are people born with both male and female genital organs but develop as females. She further spoke about the complications of going through surgery to change gender. She stressed how dangerous it is to one's body and how expensive it is. She further spoke about the influence of social media on how we view gender.

Department of Management Studies-MBA

Event report on " KNOW YOUR RIGHTS: UNDERSTANDING CONSUMER PROTECTION LAWS"

Resource person: Adv. Abhay
Event coordinator: Dr.Shaista B Harris
Date: 16.05.2024
Time: 12.15 PM
Number of participants: 57

Brief about the activity: law

A Guest Lecture on**" Know your Rights: Understanding Consumer Protection Laws"** was organized by the department of management studies – MBA on 16th May 2024 between 12.15 pm to 1.40. The session was conducted by Advocate Abhay, an expert in consumer protection laws. The primary focus of the lecture was to educate and create awareness among the students about the Consumer Protection Act 1986 and 2019 and the importance of understanding cyber laws in today's digital age.

Advocate Abhay, with extensive knowledge and experience in consumer protection and cyber laws, conducted the guest lecture. He shared practical insights, case studies, and relevant examples to enrich the learning experience.

Topic Coverage:

a) Consumer Protection Act 2019: The lecture provided a comprehensive understanding of the Consumer Protection Act 2019, its key provisions, and the rights and responsibilities of consumers. Advocate Abhay explained how the act safeguards consumer interests and ensures fair trade practices.

The lecture was designed to be highly interactive, with students actively participating in discussions and asking questions related to consumer protection and cyber laws. Advocate Abhay addressed the queries, providing clarifications and practical insights.

Case Studies and Examples: To enhance understanding, Advocate Abhay presented real-life case studies and examples related to consumer rights violations and cybercrimes. This allowed students to analyze practical scenarios and gain insights into the application of legal provisions.

Benefits to Participants:

The guest lecture provided the following benefits to the participants:

a) Enhanced Knowledge: Students gained a deeper understanding of the Consumer Protection Act 2019.

b) Awareness: The session created awareness about consumer rights and the importance of protecting personal information in the digital realm.

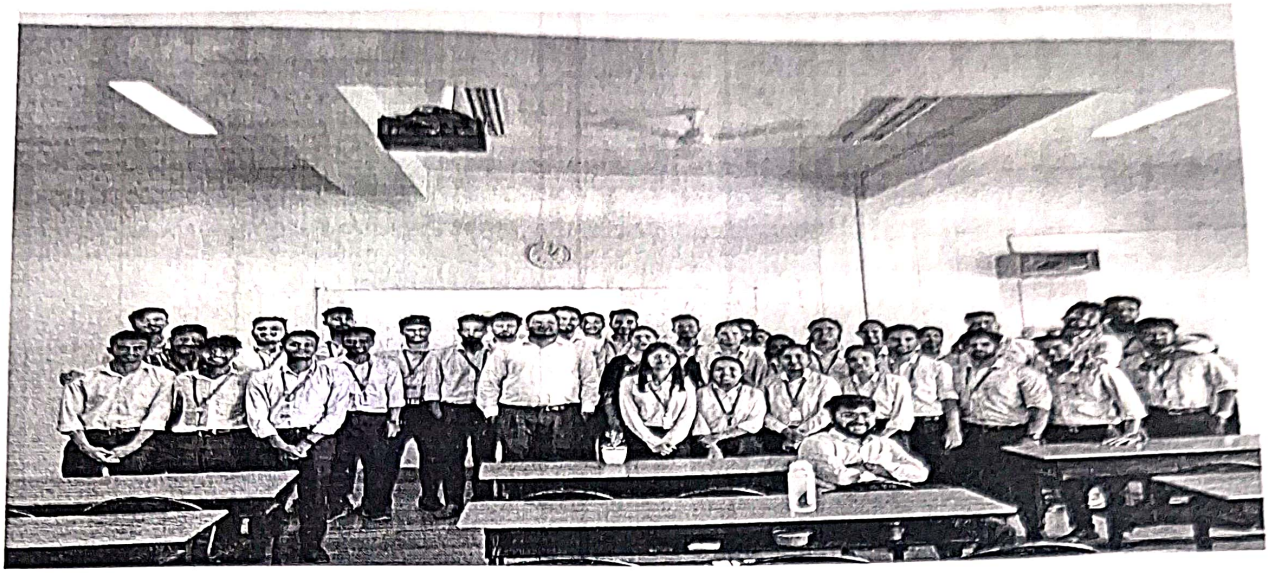
c) Practical Insights: The case studies and examples shared by Advocate Abhay offered practical insights into the application of consumer protection

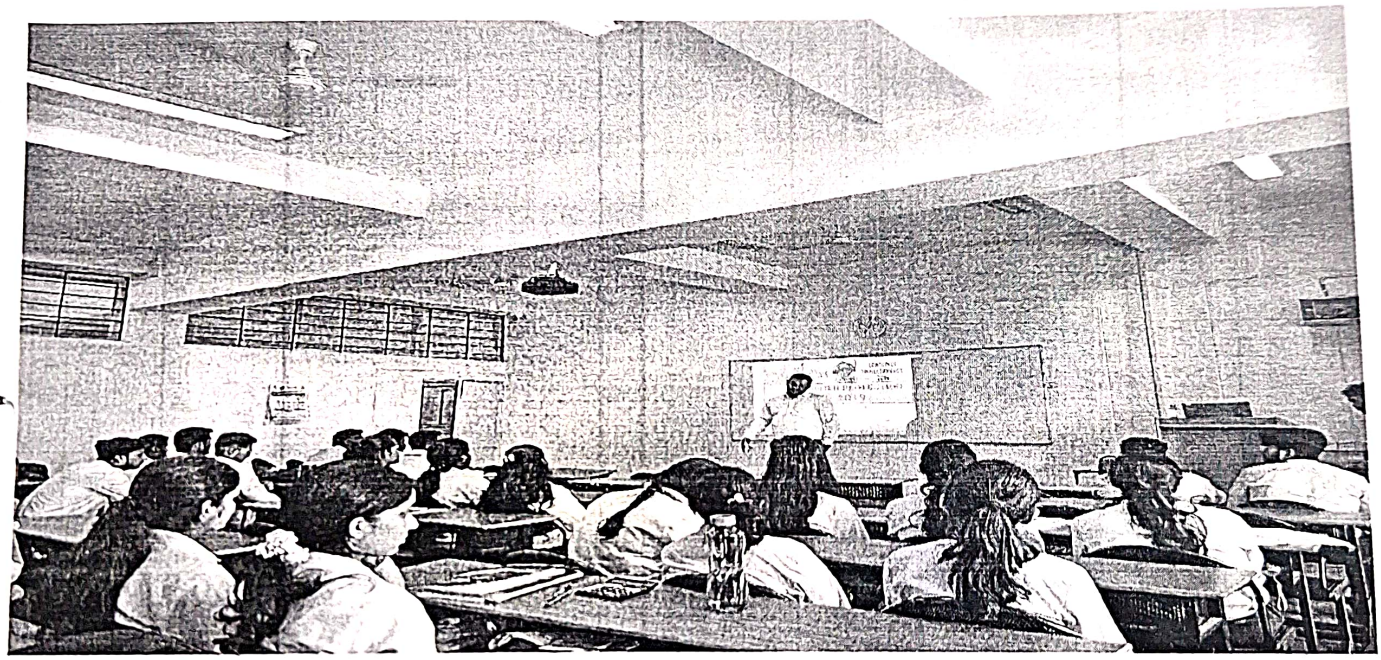
d) Interactive Learning: The interactive nature of the session encouraged active participation, fostering critical thinking and engagement among the students.

Conclusion:

The guest lecture conducted by Advocate Abhay on the Consumer Protection Act 2019 and cyber laws was highly informative and engaging. The session equipped the first-semester MBA student with a better understanding of consumer rights, the legal framework for consumer protection, an the need to be vigilant in the digital space. The insights gained from the lecture will contribute t their overall knowledge and preparedness as future business professionals.

PHOTOS OF THE EVENT





Dr. Shaista B Harris

Event Coordinator

M.S. RAMAIAH COLLEGE OF ARTS, SCIENCE & COMMERCE
DEPARTMENT OF MANAGEMENT

Dr. Akshay

Hod- MBA

Principal
M.S Ramaiah College of Arts, Sci
MSRIT Post, MSR
Bangalore 56 0

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College of Arts, Science & Commerce

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Department of Biochemistry
MSRCASC

Value-added program on

"Hands-on training in Basic Molecular Biology Techniques: Enhancing Research Skills"
in collaboration with
Medauxin, Bengaluru
(An IQAC initiative)

Ref. No: Chem/BC/PG-2024-01 **Date: 02/01/2024**

Circular

Department of Biochemistry is organizing a VAP on "Hands-on training in Basic Molecular Biology Techniques: Enhancing Research Skills" in collaboration with Medauxin, Bengaluru from Jan 4th -7th 2024 for M.Sc. 2nd year Biochemistry students and from 25th- 28th, 2024 for M.Sc. 1st year Biochemistry students at Medauxin.

Dr. Suveditha S.
Assistant Professor &
Convenor
MSRCASC

Dr. Surendra A. S. (HoD)
Department of Chemistry
and Biochemistry
MSRCASC

Head of the Department
CHEMISTRY / BIO-CHEMISTRY
M S. Ramaiah College of Arts,
Science & Commerce
Bangalore - 560 054

Dr. Pushpa H.
Vice Principal
MSRCASC

Dr. Vatsala G
Principal
MSRCASC

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College of Arts, Science & Commerce

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MEDAUXIN

HANDS-ON TRAINING ON

"BASIC MOLECULAR BIOLOGY TECHNIQUES: ENHANCING RESEARCH SKILLS"

Value-added program

organized by

Department of Chemistry & Biochemistry

M. S. Ramaiah College of Arts, Science and Commerce

In collaboration with

Medauxin, Bengaluru

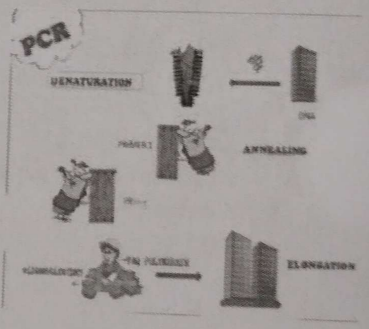
(An IQAC initiative)

DATE: 4/01/2024 to 7/01/2024

VENUE: MSRCASC and MEDAUXIN

COURSE OUTLINE:

- Laboratory safety procedures & good laboratory practices
- The use & proper handling of molecular biology lab equipments
- Sample collection & storage
- Nucleic acid extraction: DNA from various samples
- Nucleic acid quantification
- Polymerase chain reaction (PCR) amplification
- Agarose gel electrophoresis and elution (PCR product purification)
- Data interpretation and troubleshooting
- Basics of primer designing
- DNA sequencing & introduction to bioinformatics tools



Convenory

Dr. Suveditha S.
Asst. Professor, Dept. of Biochemistry
M.S.R.C.A.S.C

Ms. Kavya Lakshmikanth
Molecular Biologist
Medauxin

Mr. Ajay Babu Nekkanti
Chief Executive Officer
Medauxin

Student Coordinatory

Mr. Sulthan Pasha

Ms. Dhamini C.N

Ms. Sandhya J.

Ms. Jalaja B.S.

Advisory Committee

HOD of Chemistry & Biochemistry
Dr. Surendra A. S.

Vice Principal
Dr. Pushpa H.

Principal
Dr. Vatsala G.

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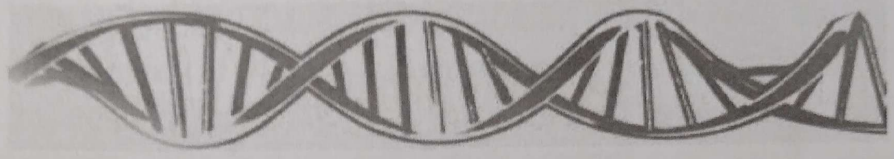
MEDAUXIN

Hands-On Training On "Basic Molecular Biology Techniques: Enhancing Research Skills"

A VALUE-ADDED PROGRAM,
ORGANIZED BY

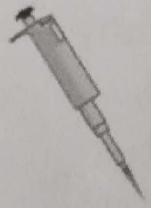
Department of Chemistry and Biochemistry,
M. S. Ramaiah College of Arts, Science and Commerce
In Collaboration With
Medauxin, Bengaluru
(An IQAC Initiative)



DATE: 01/02/2024 TO 04/02/2024 VENUE: MSRCASC AND MEDAUXIN

COURSE OUTLINE:

Laboratory Safety Procedures and Good Laboratory Practices
The Use and Proper Handling of Molecular Biology Lab Equipment
Sample Collection and Storage
Nucleic Acid Extraction: DNA from Various Samples
Nucleic Acid Quantification
Polymerase Chain Reaction (PCR) Amplification
Agarose Gel Electrophoresis and Elution (PCR Product Purification)
Data Interpretation and Troubleshooting
Basics Of Primer Designing
DNA Sequencing and Introduction to Bioinformatics Tools



CONVENORS

Dr. Suveditha S
Asst. Professor, Dept of Biochemistry
M.S.R.C.A.S.C

Ms. KAVYA Lakshmikanth
Medauxin

Mr. Ajay Babu Nekkanti
CEO, Medauxin

STUDENT CO-ORDINATORS

Mr. Sulthan Pasha **Ms. Dhamini C.N.** **Ms. Sandhya J.** **Ms. Jalaja B. S.**

ADVISORY COMMITTEE

Hod Of Biochemistry
Dr. Surendra. A. S

Vice Principal
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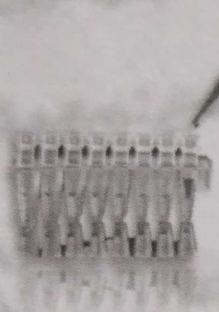
MEDAUXIN

"HANDS-ON TRAINING ON BASIC MOLECULAR BIOLOGY TECHNIQUES: ENHANCING RESEARCH SKILLS"

(An IQAC initiative)



Value-added program
organized by
Department of Chemistry & Biochemistry
M. S. RAMAIAH COLLEGE OF ARTS,
SCIENCE, AND COMMERCE

In collaboration with

MEDAUXIN, Bengaluru

4^{th}-7^{th} JANUARY 2024 Batch 1

1^{st}-4^{th} FEBRUARY 2024 Batch 2

MSRCASC AND MEDAUXIN

ABOUT MSRCASC

M. S. Ramaiah College of Arts, Science, and Commerce, established in 1994 by the late Dr. M. S. Ramaiah, provides a diverse range of undergraduate and postgraduate degree programs in arts, science, commerce, and management. The institution is affiliated with Bengaluru City University. Authorized by AICTE in New Delhi and recognized by the Government of Karnataka, the college holds accreditation from the UGC under Sections 2(f) and 12(B) of the UGC Act of 1956. Notably, it has received an "A" grade reaccreditation from NAAC, showcasing its commitment to academic excellence. A pioneer in education, continuously striving to incorporate innovative teaching methods to foster the development of students into future professionals.

ABOUT THE DEPARTMENT

Established in 1994, the Department of Chemistry & Biochemistry at M.S Ramaiah College of Arts, Science, and Commerce offers both undergraduate (UG) and postgraduate (PG) programs in Chemistry & Biochemistry. Our highly qualified faculty employs contemporary teaching tools, including ICT-enabled learning and molecular models, to enhance conceptual understanding. Recognized under the DBT-STAR college scheme, our department has a track record of securing university ranks. Research initiatives include projects supported by seed money grants, KSCST, SERB-TARE, and KSTA. Department also has collaboration with Biocon Academy to train postgraduates with job assistance.

ABOUT MEDAUXIN

Medauxin, established in 2015, aims to deliver high-quality services and genomic solutions in the field of biotechnology. Headquartered in Bengaluru, with a network of distributors across the country, Medauxin specializes in genomics R&D services. The company offers genomic sequencing and bioinformatics services to global life sciences, healthcare businesses, academic and government institutions in India. Medauxin is actively involved in marketing, selling, and servicing a diverse range of technological products widely utilized by clinical diagnostics and life sciences organizations. With a strong focus on customer satisfaction, Medauxin is well-positioned to quickly establish leadership in its markets.

ABOUT THE VAP

Department of Chemistry & Biochemistry is organizing a four-day VAP on "Hands-on training on Basic Molecular Biology Techniques: Enhancing Research Skills ". Students will engage in hands-on activities to enhance their skills and understanding of various molecular biology techniques. The VAP aims to equip M.Sc. Biochemistry students of I & III semesters with the necessary knowledge for research endeavours and industry-ready jobs. The program, held in collaboration with Medauxin, underscores a hands-on and practical approach to acquiring vital molecular biology techniques, coupled with industry exposure.

OBJECTIVE

1. Improve students proficiency in fundamental molecular biology techniques through practical, hands-on learning experiences.
2. Provide exposure to real-world applications in the industry.
3. Equip students with the skills necessary for engaging in research activities.

COURSE OUTLINE

1. Laboratory safety procedures and good laboratory practices
2. The use and proper handling of molecular biology lab equipment
3. Sample collection and storage
4. Nucleic acid extraction: DNA from various samples
5. Nucleic acid quantification
6. Polymerase Chain Reaction (PCR) amplification
7. Agarose gel electrophoresis and elution (PCR product purification)
8. Data interpretation and troubleshooting
9. Basics of primer designing
10. DNA sequencing and introduction to bioinformatics tools

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PATRONS

Dr. M.R. JAYARAM
Hon'ble Chairman, GEF

SRI. M.R. JANAKIRAM
Hon'ble Director, GEF

SRI. M.R. KODANDARAM
Hon'ble Director, GEF

SRI. B.S. RAMAPRASAD
Chief Executive, GEF (Eng... & GS)

SRI. G. RAMACHANDRA
Chief Executive, GEF (Eng... & GS)

ADVISORY COMMITTEE

Dr. VATSALA G.
Principal
MSRCASC

Dr. PUSHPA H.
Vice Principal
MSRCASC

Dr. SURENDRA A. S.
HoD Biochemistry/Chemistry
MSRCASC

CONVENORS

Dr. SUVEDITHA S.
Asst. Professor
MSRCASC

Mr. AJAY BABU NEKKANTI
Chief Executive Officer
Medauxin

Ms. KAVYA LAKSHMIKANTH
Molecular Biologist
Medauxin

Ms. VIDHYA GURIKAR
Sr. Molecular Biologist
Medauxin

STUDENT COORDINATORS

Ms. JALAJA B. S.
Ms. SANDHYA J.

Ms. DHAMINI C. N.
Mr. SULTHAN PASHA

Report on Value-Added Program on

"Hands-on training in Basic Molecular Biology Techniques: Enhancing Research Skills"

(An IQAC Initiative)

Title: Hands-on training in basic molecular biology techniques: Enhancing Research Skills"

Resource person: Mr. Ajay Babu Nekkanti, Chief Executive Director, Medauxin

Organizer: Dr. Suveditha, Asst. Professor, MSRCASC

Dr. Surendra A. S, HoD Dept of Biochemistry/Chemistry

Date: 4th - 7th January, 2024 (Batch 1), 1st – 4th February, 20204 (Batch 2)

Venue: MSRCASC and Medauxin, Bengaluru

Participants: M.Sc. Biochemistry I and II-year students, MSRCASC

Objectives:

1. Improve students' proficiency in fundamental molecular biology techniques through practical, hands-on learning experiences.
2. Provide exposure to real-world applications in the industry.
3. Equip students with the skills necessary for engaging in research activities.

Details:

The Department of Chemistry & Biochemistry organized a four-day Value-Added Program (VAP) on "Hands-on Training on Basic Molecular Biology Techniques: Enhancing Research Skills." Students engaged in hands-on activities to enhance their skills and understanding of various molecular biology techniques. The VAP aimed to equip M.Sc. Biochemistry students of I & III semesters with the necessary knowledge for research endeavors and industry-ready jobs. The program, held in collaboration with Medauxin, underscored a hands-on and practical approach to acquiring vital molecular biology techniques, coupled with industry exposure.

Day 1:

The reporting time at Medauxin was 9:30 am, the students gathered at the college by 8:45 am and proceeded to Medauxin. Upon arrival, there was a brief introduction about Medauxin and the services provided, by the Director Mr. Ajay Babu Nekkanti. The trainers for the program, Ms. Kavya Lakshmikanth, a molecular biologist, and Mrs. Vidhya Gurikar, a

senior molecular biologist at Medauxin, were introduced. The participants were divided into two batches under the trainers.

Good laboratory practices (GLP) were explained in detail, including one-way entry to the lab and the proper usage and disposal of gloves. The storage of samples and the laboratory setup were also discussed. Before starting the experiments, the usage of all instruments was explained thoroughly. Gel preparation and the role of reagents used in gel electrophoresis, such as loading dye and EtBr, were detailed. The instrumentation of PCR and setting up the PCR reaction for the bacterial 16s gene were also explained.

The experiment began with buffer preparation, specifically 50X TAE buffer and CTAB buffer, by the two batches. The afternoon session included the DNA extraction from a bacterial culture containing the 16s gene. The use of the Bio Safety Cabinet and the precautions necessary while handling it were explained.

Pipetting skills were tested, and guidance was provided during the DNA extraction steps. Finally, the DNA was precipitated and stored at -20°C to run gel electrophoresis the next day. A question-and-answer session concluded the day, and the group left Medauxin at 6:30 pm, returning to the college.

Day 2:

On the second day, the laboratory was reached at 9:30 am. Upon entering, strict adherence to Good Laboratory Practices (GLP) was maintained. Ms. Kavya conducted a session covering 11 conceptual calculations, including 50X TAE buffer, CTAB, chloroform isoamyl alcohol preparation, and normality problems. Knowledge was imparted regarding different bands of PCR, distinguishing between sheared, intact, and high-concentration bands. Building on the previous day's DNA extraction session, principles and procedures of Polymerase Chain Reaction (PCR) were explored.

Understanding the components of PCR, such as template DNA, forward and reverse primers, and emerald buffer, was emphasized, along with their function in PCR. Details on programming PCR, from setup to execution, were provided. Insights were gained into the preparation and role of loading dye, as well as the types of primers used in PCR. Ms. Vidya guided everyone individually in performing the PCR reaction.

Further theory covered the aspects like PCR melting temperature gradient steps, primer dilution, and the protocol for gel purification, slated for the next session on Day 3. The day concluded with departure from the lab at 6:30 pm, heading back to college.

Day 3:

On the final day at Medauxin, the lab was reached on time. Upon arrival, Ms. Kavya reviewed the work and topics covered in the previous days. She provided insights into industrial applications and issues faced with customer samples and shared information about research fields that could be pursued after graduation. Several questions were asked and answered accordingly.

After this session, the group returned to the extraction room to begin gel extraction. The gel was purified and the samples were loaded onto the gel for analysis under the guidance of facilitators. Following this, primer-designing using the Primer-Blast tool was learned, along with watching a few YouTube videos on molecular biology techniques. The group was taught how to analyze gel images based on the type of band formed, learned about multiple band formation under certain circumstances, and methods of troubleshooting.

At the end of the program, feedback forms regarding the VAP from Medauxin were handed out, filled in, and submitted. The training concluded in the evening, and everyone headed back to the college.

Day 4:

On the fourth day, the session at MSRCASC facilitated an interactive discussion where students actively participated in discussions about our comprehensive training program, the latest advancements in molecular biology techniques, and the diverse career opportunities available in the field. Insightful questions from students fostered a dynamic exchange of ideas and knowledge.

Following the interactive session at MSRCASC, a valedictory function was organized to mark the culmination of the hands-on training program. The event was attended by the resource person from Medauxin, the principal of MSRCASC, the registrar, the vice principal, HoD of Biochemistry, and other faculty members.

During the function, the principal addressed the gathering, highlighting the significance of the hands-on training program and its impact on the students' learning journey. Certificates of participation were awarded to all student participants, recognizing their commitment and dedication throughout the program.

The valedictory session provided an opportunity for students and faculty to reflect on the knowledge gained and experiences shared during the hands-on training. It concluded on a celebratory note with a high tea, allowing participants to interact informally and discuss their future aspirations in the field of molecular biology.

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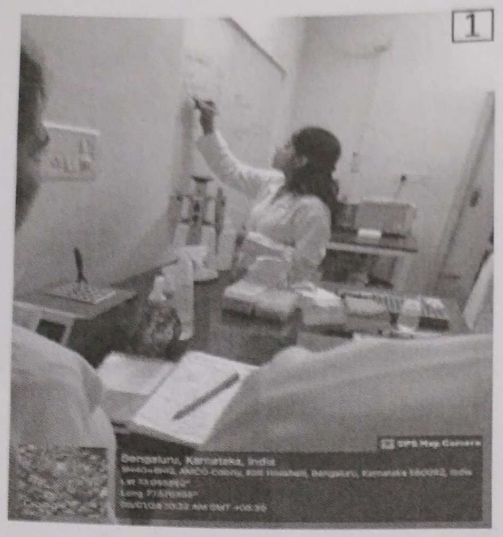
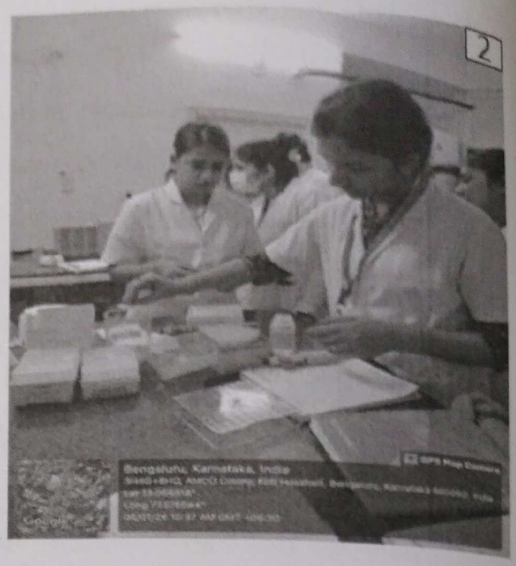
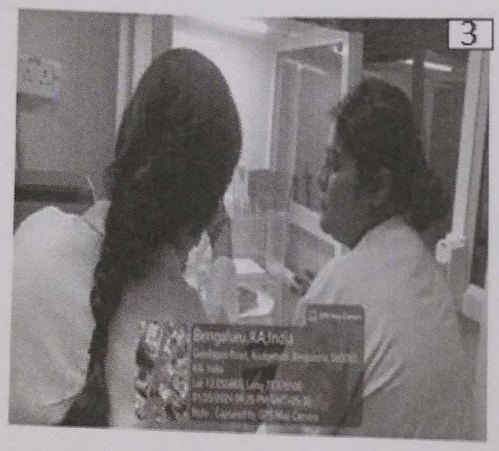
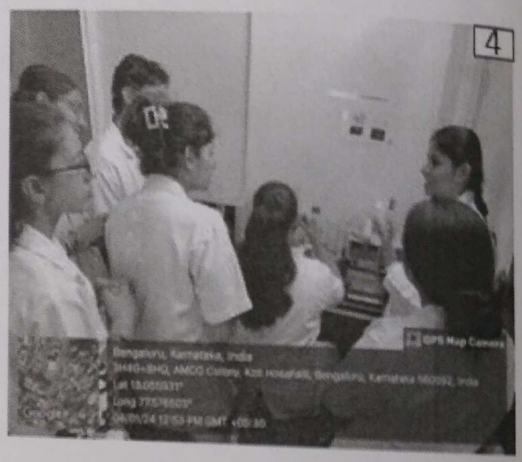
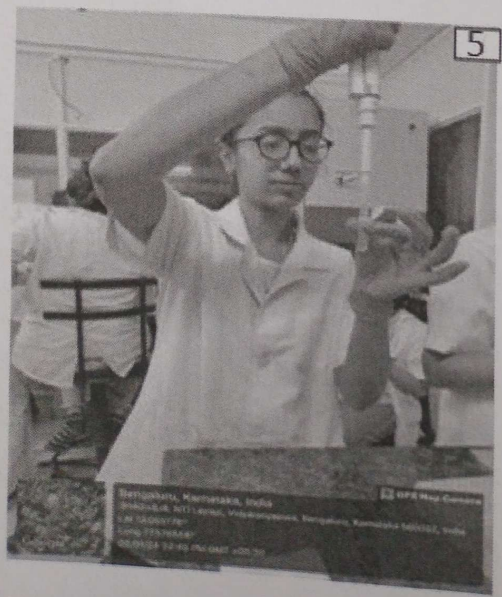
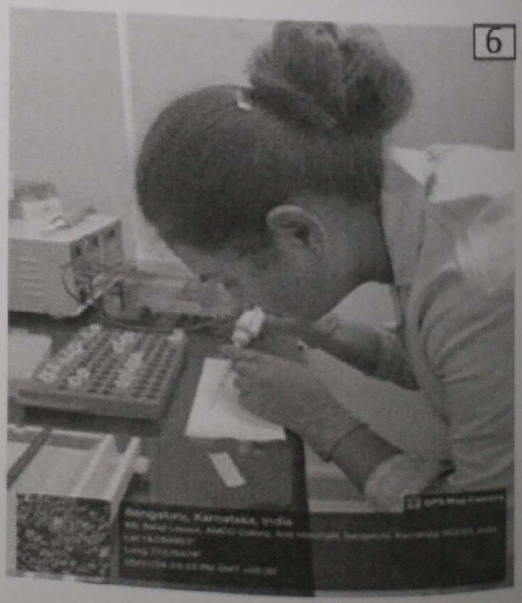


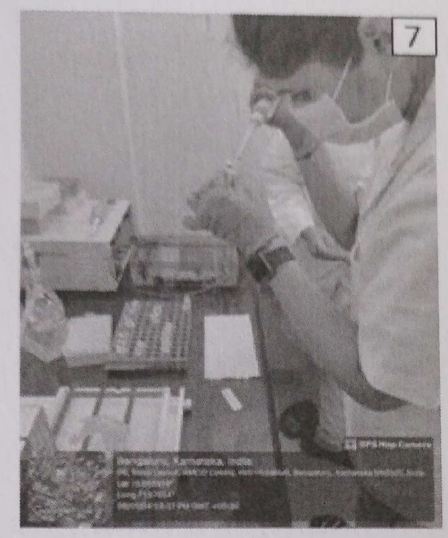


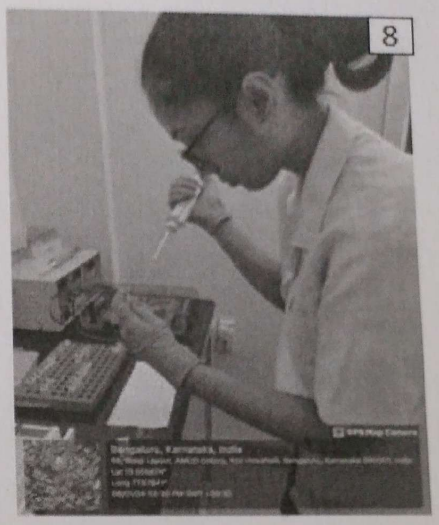


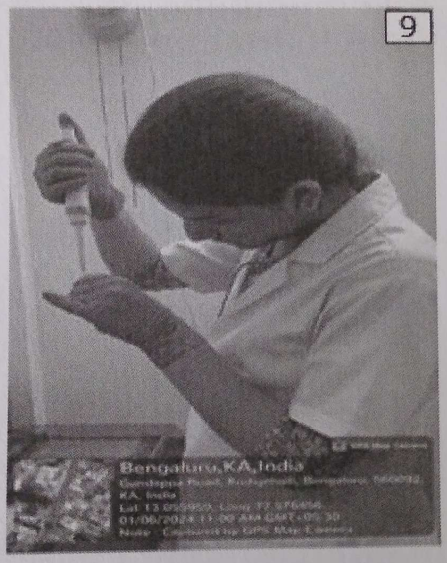


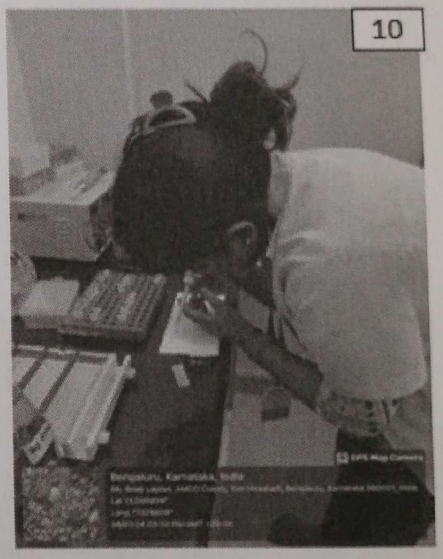


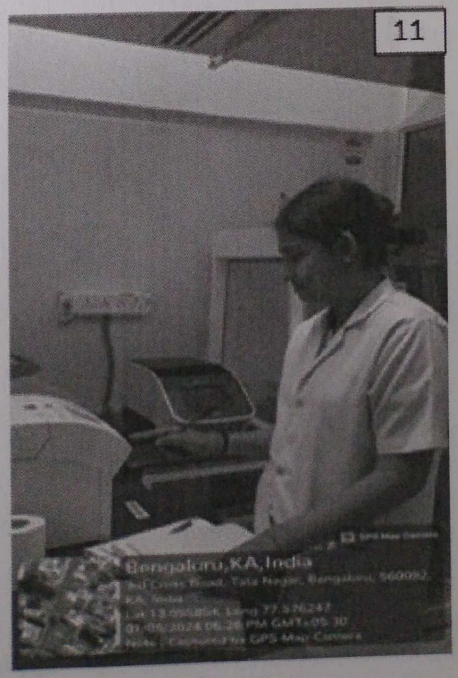


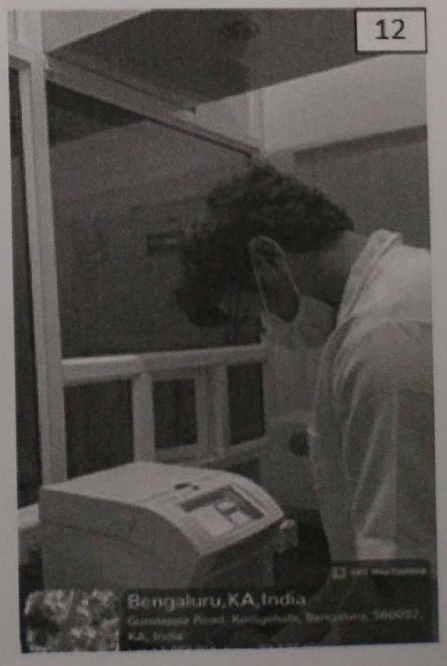


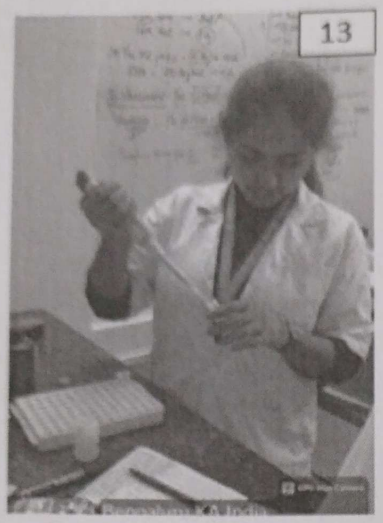


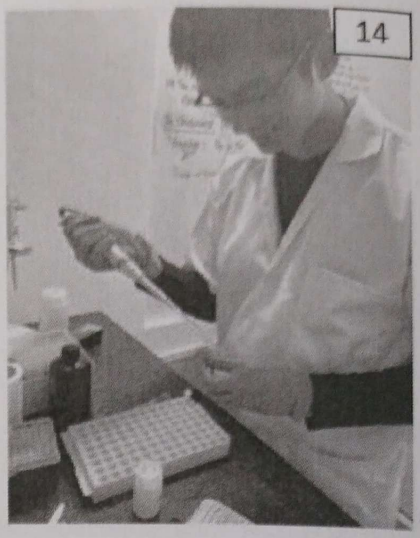


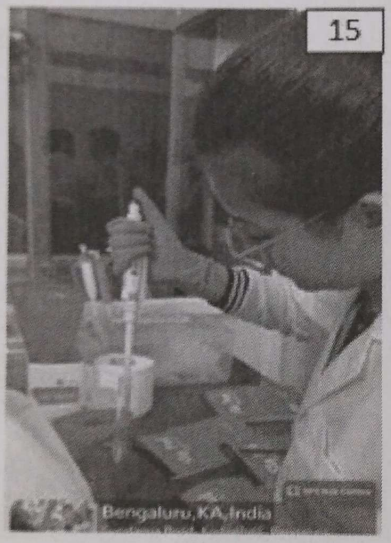


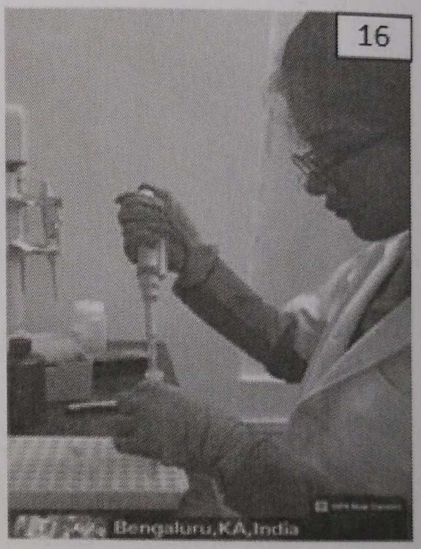


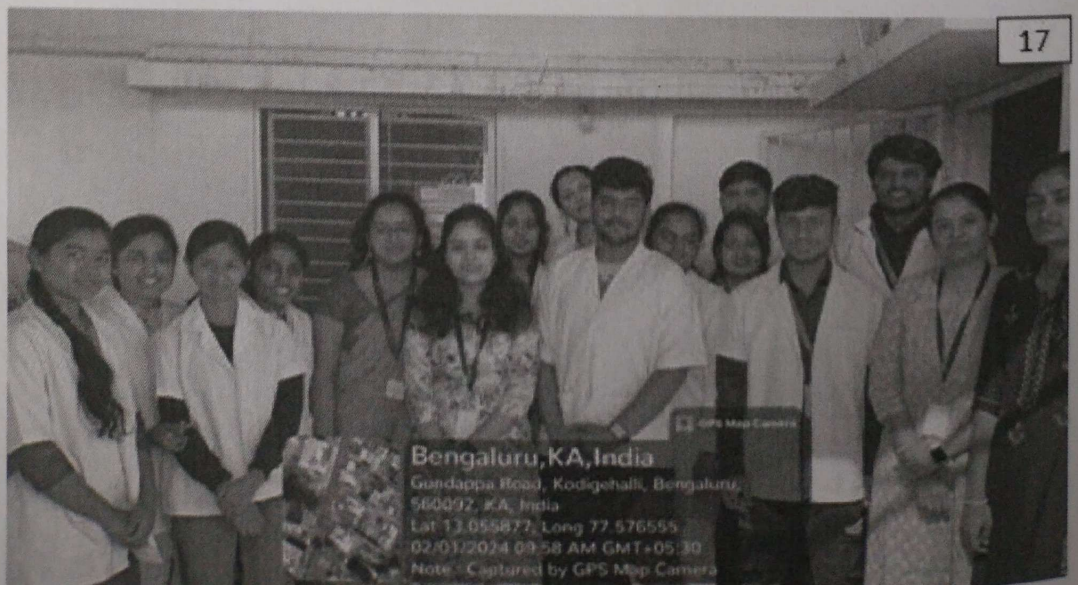






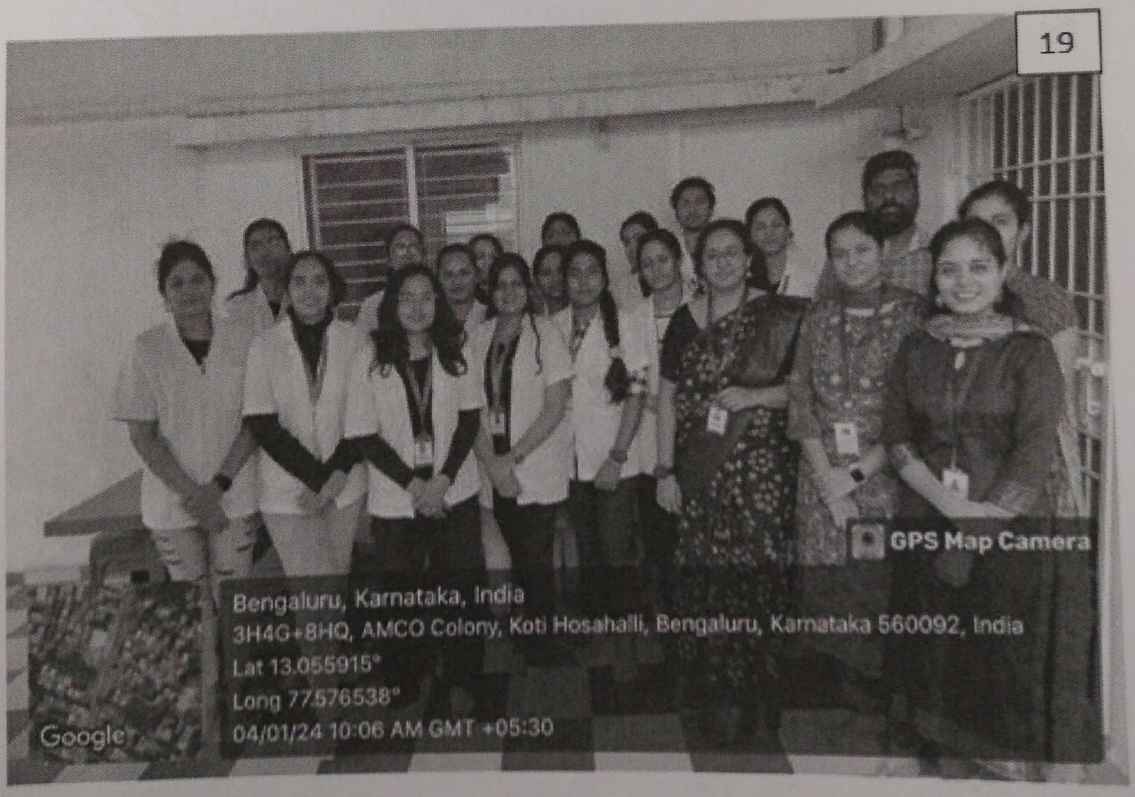




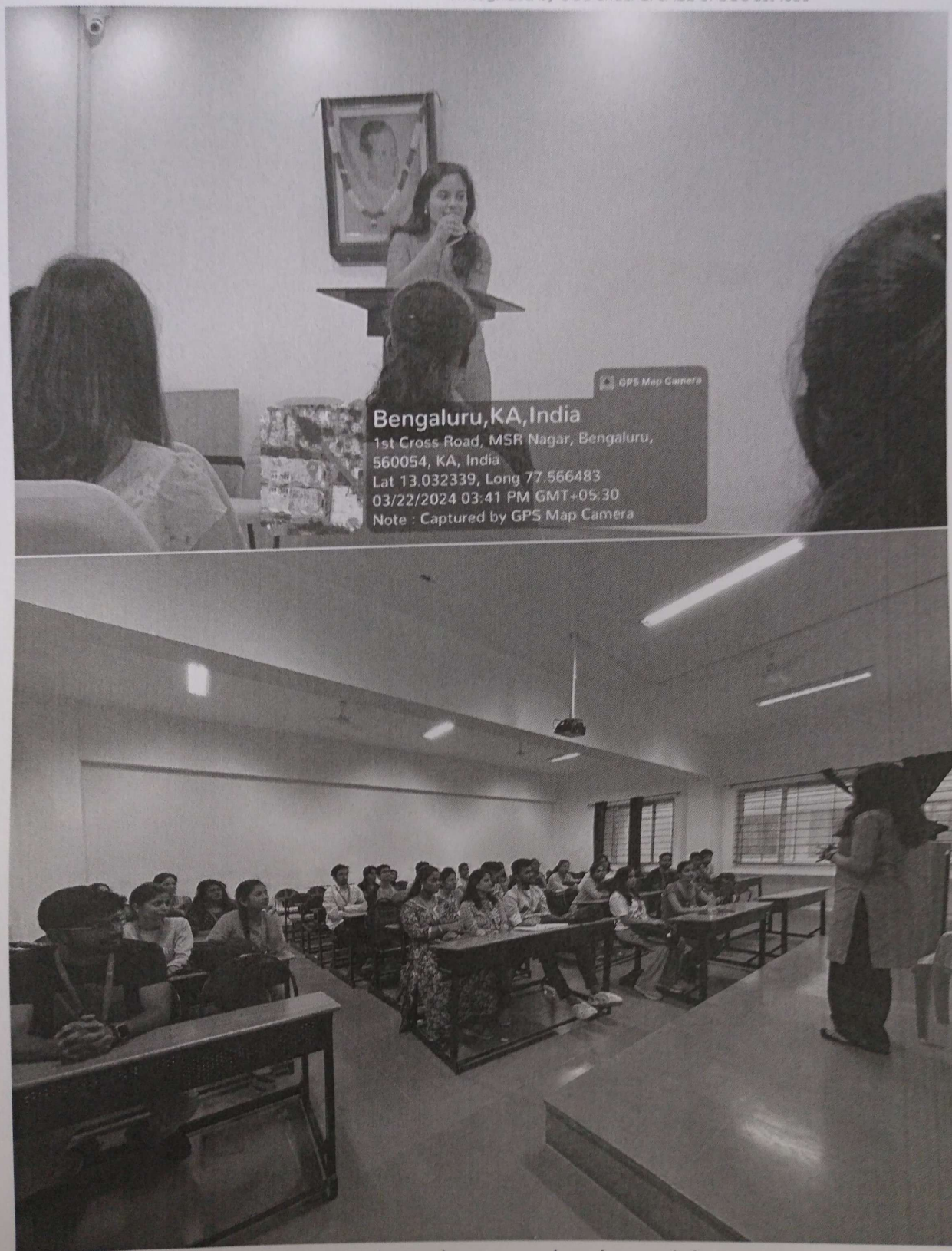


18

19



1. Ms. Kavya giving insights on buffer preparation
2. Students working on DNA extraction
3. Ms. Vidhya guiding a student in PCR sample preparation
4. Ms. Vidhya explaining sample loading in gel electrophoresis
5. A student extracting a DNA sample
6, 7, 8, 9, 10. Students working on sample loading in agarose gel electrophoresis
11, 12. Students working in the PCR room
13, 14. Students working on DNA precipitation
15, 16. Students loading DNA samples onto gel electrophoresis.
17,18. MSc Biochemistry I year students, faculty with the Medauxin team
19. MSc Biochemistry II year students and faculty with the Medauxin team.



Day 4: Engaging with students about the comprehensive training program, the newest advancements in molecular biology techniques, and potential career paths in the field

Valedictory function

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M S Ramaiah College of Arts, Science and Commerce
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Recognized by UGC under 2f & 12B of UGC act 1956

M.Sc. 2nd Year Biochemistry

Value-added program on "Hands-on training on Basic Molecular Biology Techniques: Enhancing Research Skills"

Jan 4th- 7th 2024

Sl. No.	Students Name	04-01-2024	05-01-2024	06-01-2024	07-01-2024
1.	Chandana A.				
2.	Dhamini C N.				
3.	Sireesha N.				
4.	Sulthan Pasha.				
5.	Keerthana K.				
6.	Vaishnavi N.				
7.	Sumithra V.				
8.	Sharvani Deshpande.				
9.	Amrutha Rangashree.				
10.	Yashaswini K S.				
11.	Sahana L J.				
12.	Payal V.				
13.	Sreelakshmi E V.				
14.	Durga Hyndavi Vakkalanka.				
15.	Monisha P.				

M.Sc. 1st Year Biochemistry

Value-added program on "Hands-on training on Basic Molecular Biology Techniques: Enhancing Research Skills"

Feb 1st -4th, 2024

Sl. No.	Students Name	01/02/2024	02/02/2024	03/04/2024	04/04/2024
1	Amrutha V.				
2	Reddaiah Rohith P.				
3	Logavarshini S.				
4	Varun N M.				
5	Vishwajeet U R.				
6	Sai Charan A.				
7	Aardra R S.				
8	Pooja T.				
9	Arya Anil Kumar				
10	Jyothika A.				
11	Joysri Dey				
12	Jalaja B S.	Jalaja.B.S	Jalaja.B.S	Jalaja.B.S	Jalaja.B.S
13	Syed Umar				
14	Sudeep S.				
15	Jayanth H.				
16	Anusha S.				
17	Bhumika S.				
18	Brundha H N.				
19	Sandhya J.				
20	Deekshitha G.				

21	Swathi R.				
22	Srujana Patel				
23	Manoj C R.				
24	Yukta S				
25	Ananya Choudhury				

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REF: MSRCASC/MB/2023-2024/

Date: 25.04.2024

CIRCULAR

DEPARTMENT OF MICROBIOLOGY

Guest Lecture on:

"Principles and Applications of Spectroscopy"

This is to inform all I and II year BSc students of M. S. Ramaiah College of Arts, Science and Commerce that Department of Microbiology under DBT Star College Scheme is organizing a guest lecture on the topic **"Principles and Applications of Spectroscopy" by "Dr. Sudeeksha"** - application Scientist, Head-Application and Business Support (Life Sciences), HORIBA India Pvt. Ltd., Bangalore, on 30th April 2024

Time: 02:30 pm to 04.30pm

Venue: Dr. Mother Theresa Auditorium.

25/4/24 25/4/24 25/4 25/04/24

HOD **Vice Principal** **Registrar (Academics)** **Principal**

Principal,
M.S. Ramaiah College of Arts, Science & Commerce
MSRIT Post, MSR Nagar
Bangalore - 560 054

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जैवप्रौद्योगिकी विभाग
DEPARTMENT OF
BIOTECHNOLOGY
सत्यमेव जयते

Department of Microbiology

Organizes

Guest Lecture

On

Principle & Applications of Spectroscopy

Dr. Sudeeksha H C
Application Scientist, Head-Application
and Business Support (Life Sciences),
HORIBA India Pvt. Ltd. Bangalore

Objectives:

- The primary objective of a guest lecture is to share knowledge, expertise, or insights on a topic.
- To provide valuable information to the audience, enhancing their understanding of the topic

Outcome:

- The lecture will encourage critical thinking and analytical skills among students
- Motivate students to explore research in future and pursue related interests.

Date: 30th April 2024 **Time: 3:00pm to 4:30pm**

Venue: Mother Theresa Auditorium

Head of the Department	Vice Principal	Principal
Mrs. Soumya S Shanbhag	Dr. Pushpa H	Dr. Vatsala G

Coordinator: Dr. Vemula Vani,
Associate Professor, Dept. of Microbiology, MSRCASCA

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DEPARTMENT OF MICROBIOLOGY

REPORT ON GUEST LECTURE

Title: Guest Lecture on "Principle & Applications of Spectroscopy"

Date: 30th April 2024

Venue: Mother Theresa Auditorium

Participants: I and II Year BSc students

Resource Persons:

Dr. Sudeeksha HC

Application Scientist, Head-Application and Business Support (Life Sciences), HORIBA India Pvt. Ltd. Bangalore

No. of Participants: 99

Objective:

- **The primary objective of a guest lecture is to share knowledge, expertise, or insights on a topic.**
- **To provide valuable information to the audience, enhancing their understanding of the topic.**
- **To provide networking opportunities for students. Interacting with professionals in various fields can help students build connections that may be valuable for internships, job opportunities, or further education.**
- **To introduce students to the fundamental principles of spectroscopy.**
- **To explore different spectroscopic techniques and their applications in chemistry, physics, and other fields.**
- **To inspire students to pursue further study or research in spectroscopy-related areas.**

On 30th April 2024, Department of Microbiology, MSRCASC hosted a guest lecture on "Principle and Applications of Spectroscopy" delivered by Dr. Sudeeksha H C, an esteemed professional with over a decade of experience in the field of spectroscopy for I and II-year BSc

students. Ninety-nine students from I and II-year B. Sc., participated in the event. The lectureaimed to provide students with basic principles and applications of spectroscopy.

The lecture was started by providing an overview of spectroscopy, emphasizing its role in analysing the interaction between matter and electromagnetic radiation. He elucidated the principles behind various spectroscopic methods, including florescence, phosphorescence, and Raman spectroscopy.

Throughout the lecture, Dr. Sudeeksha presented case studies and examples to illustrate the wide-ranging applications of spectroscopy in diverse fields such as organic chemistry, materials science, environmental analysis, and biomedical research. He also discussed recent advances in spectroscopic instrumentation and data analysis techniques, showcasing the evolving landscape of spectroscopic research.

The interactive session allowed students to engage with Dr. Sudeeksha H C, asking questions and sharing their perspectives about Raman spectroscopy and instrumentation. The audience response to the lecture was overwhelmingly positive, with students actively participating in discussions and expressing enthusiasm for learning spectroscopy and instrumentation in their future careers.

The guest lecture had a significant impact on students' appreciation for spectroscopy as a powerful analytical tool. It deepened their understanding of the underlying principles and broadened their awareness of the diverse applications of spectroscopic techniques in research and industry settings.

We extend our sincere gratitude to Dr. Sudeeksha H C for his informative and engaging lecture, as well as Mr. Suresh Kumar, National Business Manager, HORIBA India Pvt. Ltd. A Special thanks to all the students and the faculty members who participated in making the guest lecture a memorable experience.

Outcome:

This guest lecture sparked interest and curiosity among the students and highlighted the relevance of spectroscopy in advancing scientific knowledge and addressing real-world challenges.

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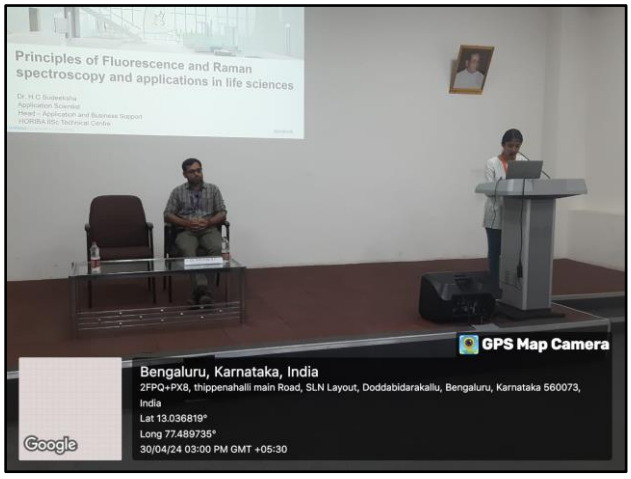
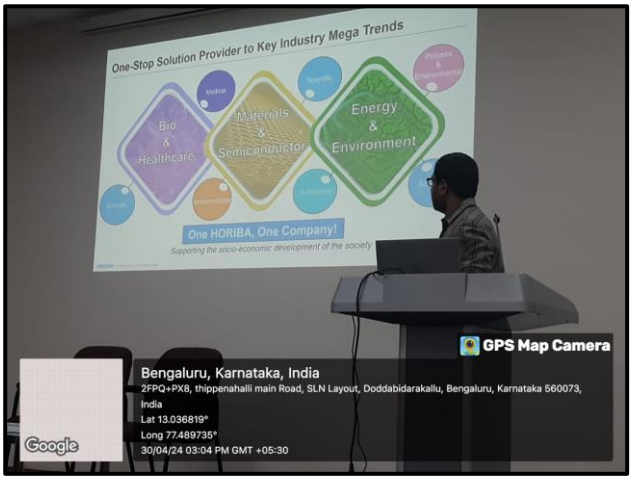
Glimpse of the event





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DEPARTMENT OF MICROBIOLOGY
ATTENDANCE FOR GUEST LECTURE
30TH APRIL 2024

SL. NO.	NAME OF THE STUDENT	REGISTRATION NUMBER	SIGANTURE	FEEDBACK (5-EXCELLENT, 4-VERY GOOD, 3-GOOD, 2-SATISFACTORY, 1-POOR)
1.	MANASA S	U18EV23S0135	Manasa.S	5
2	Priyadarshini.K	U18EV23S0157	Priyadarshi	5
3)	Aishwarya.V.S	U18EV23S0006	Aishwarya	5
4)	Amal Krishna	U18EV23S0158	Amal	5
5)	Arya.K	U18EV23S0038	Arya	5
6)	Farseen	U18EV23S0149	Farseen	4

30/4/24

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DEPARTMENT OF MICROBIOLOGY
ATTENDANCE FOR GUEST LECTURE
30TH APRIL 2024

SL. NO.	NAME OF THE STUDENT	REGISTRATION NUMBER	SIGANTURE	FEEDBACK (5-EXCELLENT, 4-VERY GOOD, 3-GOOD, 2-SATISFACTORY, 1-POOR)
1	Arthi S	U18EV23S0021	Arthi S	3
2	Tamushree	U18EV23S0057	Tamushree	4
3	Bidhisa Das	U18EV23S0078	Bidhisa Das	5
4	Surya Srikar	U18EV23S00102	surya	3 ☆
5	Sayani Barua	U18EV23S0030	Barua	5 ☺
6	Yuvika Saxena	U18EV23S0086	yuvika	4 !

Surya
30/4/24

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DEPARTMENT OF MICROBIOLOGY
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30TH APRIL 2024

SL. NO.	NAME OF THE STUDENT	REGISTRATION NUMBER	SIGANTURE	FEEDBACK (5-EXCELLENT, 4-VERY GOOD, 3-GOOD, 2-SATISFACTORY, 1-POOR)
1	Sufyan Ahmed . k	U18EV23S0058		4
2	Poornachandra HM	U18EV23S0071		4
3	Bhushan Basavaraj	U18EV23S0061		5
4	vibhashree	U18EV23S0059		3
5	Arkapbabha Deb	U18EV23S0131		4

30/4/24

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1.	Tanya Chirpal S	U18EV22S0264		5
2.	Vadridhi Dalwai	U18EV22S0087		5
3.	Soha Khanum	U18EV22S0075		5
4.	Nikitha BM	U18EV22S0226		5
5.	Shubi J Parekh	U18EV22S0266		5
6.	Rakesh	U18EV22S0364		5
7.	Krishnapriya	U18EV22S0100		5

30/4/24

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1	SANDYA SONI	U18EV23S0171		Excellent
2	RUCHI SRIVASTAVA	U18EV23S0012		satisfactory
3.	YUKTHA L	U18EV2250369		Very good
4.	M.N. BHAVANA	U18EV2250101	Bhavana	Good & Informative
5.	MANDARA. K	U18EV2250099		Good
6.	SNIGDHA. A	U18EV2250097		Very good

30/4/24

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DEPARTMENT OF MICROBIOLOGY
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30TH APRIL 2024

SL. NO.	NAME OF THE STUDENT	REGISTRATION NUMBER	SIGANTURE	FEEDBACK (5-EXCELLENT, 4-VERY GOOD, 3-GOOD, 2-SATISFACTORY, 1-POOR)
01	Varsha. M	U18EV2350146		Very Good
02	Priyanka S	U18EV23S0175		Very good
03	Yashaswini UM	U18EV23S0050		Very good
04	Sandhya. S	U18EV2350173		Very good
05	Sinchana K	U18EV2250152		very good
06	Nandana G	U18EV2250003		very good
07	Swapna Sahoo	U18EV2250294		very good
08	Neha Kurian	U18EV2250228		Very good.

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30TH APRIL 2024

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1.	SAMAN TAHNIET	U18EV22S0351		5
2.	ACHISSA BEDAMATTA	U18EV22S0343		4.
3.	V. Archana	U18EV22S0~~301~~ 170		4
4.	Sharanya. C. Dabral	U18EV22S0301		4
5	Fahwaz K. M	U18EV22S0254		3
6	Sasi Kiran S	U18EV22S0316		4
7.	Charan Kumar. R	U18EV22S0397		5

30/4/24

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01.	KOKILA.G	U18EV23S0152	Kokila.G	5
02.	PRIYA.N	U18EV23S0066		5
03.	K.M.CHINAMBIKA	U18EV23S0392.		5
04	Vaishnavi	U18EV23S0085	vaishnavi	5
05	Shriya Gejjehalli	U18EV23S0084		5
06	Sri Lalitha Hiramai	U18EV22S0103		5
07	Vibha vadlagunti	U18EV22S0102	Vibha	4
08.	G. Baby Tejaswini	U18EV22S0104		5

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1.	Simran Yasmin	U18EV23S0021	Simra.	Excellent
2.	Beenish Javied	U18EV23S0376	BJ	excellent.
3.	Seerat Aziz	U18EV23S0124	Seerat.	Excellent
4.	Anitha	U18EV23S0166	Anitha.	Excellent.
5	Bhanushree H.R	U18EV23S0088		Excellent
6	AKKA MAHADEVI. D	U18EV23S0134		Okay.
7	Channabasava	U18EV23S0139		Excellent
8				

Divya.
30/4/24

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1.	Chinmaye B.M	U18EV23S0047		4
2.	K. Amoolya	U18EV23S0386	Amoolya	4.
3.	Sandeep Kumar Behera	U18EV22S0116		5
4.	DEEKSHA.B-M	U18EV22S0270		5
5.	BARSHA SARKAR	U18EV22S0115	Barsha	5
6.	DEVIKA SANTOSH	U18EV22S0272		4.
7.	RAMYA. N MURTHY	U18EV22S0305	Ramya murthy	4
8.	Keerthana. S	U18EV22S0358		5
9	Manasa. V	U18EV22S0222		5

Ramya
30/4/24

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1)	Tanishka Dewangan	U18EV22S0392		Excellent
2)	Trishala Chakraborty	U18EV22S0284		Excellent.
3)	Angel Immaculate.S	U18EV22S0385		quite informative
4)	Ananya Bharadwaj	U18EV22S0273		Very Good.
5)	Yazhini.S	U18EV22S0279		Awesome
6)	Laya.N	U18EV22S0221		very good
7)	Hanumantha	U18EV22S0096		Good
8)	Anusha.R	U18EV22S095		Very good.
9)	Akshitha Prakash	U18EV22S0262		Peaceful.

30/4/24

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1.	S. ABINEHA	U18EV22S0260	S. Abin	EXCELLENT
2	Arya Arun kumar	U18EV22S0378		EXCELLENT
3.	Swathi K	U18EV22S0307	Swathi	EXCELLENT
4	Chandni Gupta	U18EV22S0387	Chan	EXCELLENT.
5	Nikitha Ajith	U18EVNS0117		EXCELLENT
6	DAISY DOMINIC	U18EV22S0L53		EXCELLENT
7	Agnishwar Das	U18EV23S0109		4
8.	Alfin. B. George	U18EV23S0D05		4
9.	Laxmi sharma	U18EV23S0032		4
10	Megha. A	U18EV23S023		4
11	Tanmay Kumari	U18EV23S0999	Tanmay	4

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1.	Hafsa H.S	U18EV22S0261		very good
2.	Mohammed Zain	U18EV22S0208		3
3.	Saptarshee Das	U18EV22S0300		2.
4.	Bhadrath K M	U18EV23S0106		4
5	Arnab Saha	U18EV22S0155		3
6.	Sidharth.S	U18EV22S0169		3
7.	K. Anuragh	U18EV22S0293		3
8.	K.K. Srindya	U18EV22S0310		5
9.	Hastha.D	U18EV22S0168		5
10.	Lakshmi Sravya	U18EV22S0282		4

30/4/24

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1.	S. ABINEHA	U18EV22S0260	S. Abi	EXCELLENT
2	Arya Arun kumar	U18EV22S037K		EXCELLENT
3.	Swathi K	U18EV22S0307	Swathi	EXCELLENT
4.	Chandni Gupta	U18EV22S0389	Chan	EXCELLENT.
5	Nikitha Ajith	U18EVNS0117		EXCELLENT
6	DAISY DOMINIC	U18EV22S0L53	Daisy Dominic	EXCELLENT
7	Agnishwar Das	U18EV23S0109		4
8.	Alfin. B. George	U18EV23S0D05		4
9.	Laxmi sharma	U18EV23S0032		4
10	Megha. A	U18EV23S033		4
11	Tanmay kumar	U18EV23S0999	Tanmay	4

30/4/24

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REF: MSRCASC/BTG/23-24/36 **27/07/2023**

CIRCULAR

Department of Biotechnology & Genetics is organizing a Guest Lecture on **"RNA in gene expression"** by Prof. Dr. Cletus J.M. D'Souza, Adjunct Professor, Dept. of Biochemistry, Mangalore University, from 11.00am to 1.00pm on Aug 02, 2023. The undergraduate (BSc IV, II sem) and postgraduate (MSc II & IV sem) students belonging to the Life Science are the main targeted audience.

Venue: A.P.J. Abdul Kalam Auditorium

28/7/2023

With regards,

Dr. Radha Dayanidhi,
Dr.Rashmi Nagesh
(Coordinators)

Prof. Pushpa H
Vice Principal

Dr. Vatsala G
Principal

Principal,
M.S. Ramaiah College of Arts, Science & Commerce
MSRIT Post, MSR Nagar
Bangalore - 560 054

M S Ramaiah Nagar
MSRIT Post
Bangalore 560 054

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+91 80 2360 6905
F +91 80 2360 6213

E principal.msrcasc@gmail.com
W www.msrcasc.edu.in

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Sri B.S. Ramaprasad, CE, GEF
Sri G. Ramachandra, COF, GEF
Dr. Vatsala G, Principal, MSRCASC
Prof. Jayarama B S, Vice Principal
Dr. Puspha H, Vice Principal

ORGANIZING COMMITTEE

Dr. Lakshmikanth R N, Associate Prof & Head
Dr. Channarayappa. Professor
Dr. D.R. Jayashree, Associate Professor
Dr. Ramakrishnaiah T N, Assistant Professor
Dr. Sowbhagya R., Assistant Professor
Dr. Radha Dayanidhi, Assistant Professor
Dr. Geetika Pant, Assistant Professor
Dr. Vinutha M., Assistant Professor
Dr. Rashmi Nagesh, Assistant Professor
Ms.Beaulah Angel, Assistant Professor
Dr. Pramod Prakash Desai, Assistant Professor
Dr. Pavithra Kumari H G, Assistant Professor
Dr. Muktha H, Assistant Professor
Dr. Satish Babu, Assistant Professor
Dr. Ramesha N, Assistant Professor
Dr. Vijayalakshmi T N, Assistant Professor

ABOUT THE GUEST LECTURE:

The guest lecture is an initiative to educate the Life science students and enhance their knowledge in the field of Molecular Biology besides to update the recent advances in the field.

Objectives

1. The guest lecture inculcates students with effective learning and critical thinking
2. To revive the interest of students and provides the opportunity to interact with expertise
3. To foster the students with communication skills and enhance their knowledge
4. Lectures are more approachable and appealing to students

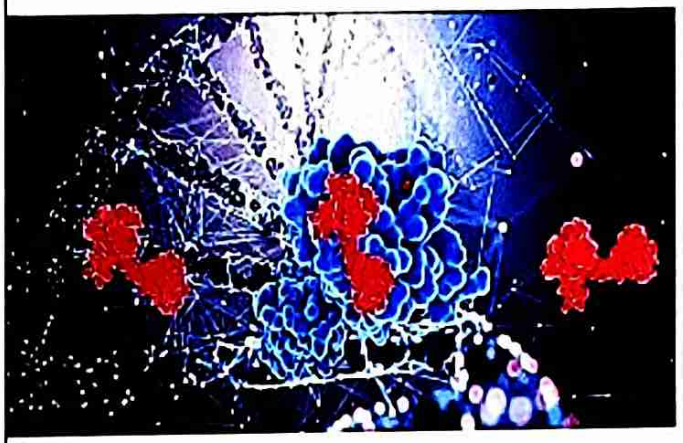
Co-ordinator
Dr. Radha Dayanidhi
Email: radha_biotech@msrcasc.edu.in

RAMAIAH
College of Arts, Science & Commerce

DEPARTMENT OF BIOTECHNOLOGY
GOVERNMENT OF INDIA

Guest Lecture on "RNA in Gene Expression"

AN IQAC INTIATIVE



August 2, 2023

Venue: A P J Abdul Kalam Auditorium
Time 11.00am- 1.00pm

Organized by
Department of Biotechnology and Genetics
M S Ramaiah College of Arts, Science and Commerce

https://msrcasc.edu.in
https://msrcasc.edu.in/ls-biotechnology-applied-genetics

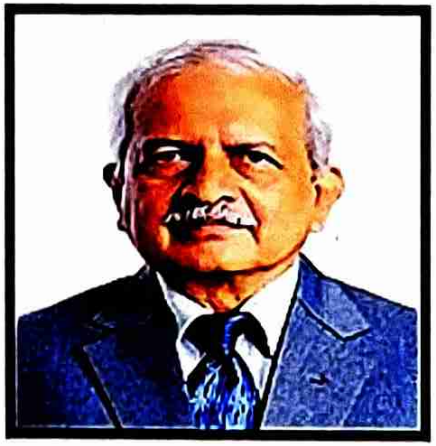
ABOUT THE COLLEGE:

Dr. M S Ramaiah, a visionary and philanthropist established "Gokula Education Foundation (GEF)", in the year 1962, to deliver education and healthcare for the betterment of mankind. Under the tutelage of GEF, M S Ramaiah College of Arts, Science and Commerce (MSRCASC) was established in 1994. MSRCASC is Re-accredited with "A" Grade by NAAC, Permanently affiliated to Bengaluru City University (BCU), and approved by AICTE. It is also recognized under section 2(f) & 12(B) of the UGC Act 1956. It has produced several rank holders and has alumni in distinguished institutions all over the world. The College has a legacy of organizing workshops, international and national conferences in various disciplines of Science, Commerce and Management in addition to Quality Initiatives in Higher Education.

ABOUT THE DEPARTMENT:

Department of Biotechnology and Genetics in the M S Ramaiah College of Arts, Science and Commerce, was established in the year 2000 offering both UG and PG programs. The main objective of the programs is to provide conducive learning environment for the students and to mitigate the shortage of biotechnologists in the field of food, agriculture, medicine and environmental management. Highly qualified and experienced faculty members deliver the lectures and conduct the practical in various subjects of as per the curriculum developed by the Bangalore City University. The department focuses mainly on teaching the basics, applications and hands-on-training in a state-of-the-art classroom and laboratory environment. It also facilitates students to broaden their knowledge for multitasking opportunities by conducting various curricular and extracurricular activities.

Resource Person



Dr. Cletus J M D'Souza

Adjunct Professor
Department of Biochemistry
Mangalore University

Report on Guest lecture, 'RNA in gene expression'

(An IQAC initiative)

Title: 'RNA in gene expression'

Resource Person: Dr. Cletus J.M. D'Souza, Adjunct Professor, Dept. of Biochemistry, Mangalore University, Mangalore

Organizer: Dept. of Biotechnology and Genetics

Date and time: August 2, 2023, 11.00 PM-1.00 PM

Venue: APJ Abdul Kalam auditorium, MSRCASC, Bengaluru

Participants: UG & PG students of Life Science, Faculty of Life Science, MS Ramaiah college of Arts, Science and Commerce, Bangalore

Objectives

1. To inculcate the students with effective learning and critical thinking
2. To revive the interest of students and provides the opportunity to interact with expertise
3. To foster the students with communication skill and enhance their knowledge
4. The guest lectures was more approachable and appealing to the students

The department of Biotechnology and Genetics organized a Guest lecture for Life Science students on August 2, 2023. The guest lecture programme commenced with the welcome address by Dr. Jayashree D.R., Associate Professor. The resource person was welcomed with the sapling by the Principal. Later, Dr. Lakshmikanth R.N., Head of the dept. of Biotechnology & Genetics, briefed about the guest lecture. Dr. Vatsala G., Principal addressed the gathering through which the message was delivered to students to inculcate the critical thinking and motivated to update their knowledge from guest lecture. Tejaswini, BSc IV sem student anchored the entire program.

Dr. Sathish Babu, Assistant Professor, Dept. of Biotechnology & Genetics introduced the resource person- Dr Cletus accomplished his Masters and Doctorate in Biochemistry from

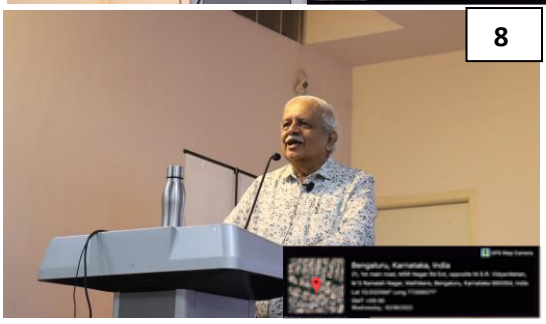
the University of Mysore. He pursued his Post-doctoral research at Dalhousie University, Canada for two years and joined the department of Biochemistry, University of Mysore as a lecturer followed by positions such as Reader and Professor, retired during the year 2013. He was awarded the Emeritus professor position from the UGC for two years which he completed in February 2017. He currently working as Adjunct Professor at Dept. of Biochemistry, Mangalore University, and Mangalore. He is a 'Visiting Professor' at Cardiovascular Research and Training Institute at Salt Lake city, USA. He has received the International Union of Biochemistry award. He was the president of the Mysore branch of the Society of Biological Chemists, India; served as an Academic Council member, member of the Research Advisory council, and as a member of Boards of selection. In addition, he was the Chairman, Committee for Development of Science in schools and University of Mysore. Added to his credits, he had Research grants from DST, DBT, UGC, ICMR and CSIR, and also from Erwin Braun Foundation from Switzerland. He has published 70 papers, three book chapters and has made over 120 presentations at National and International conferences. He is the director of a Biotechnology company. With this brief introduction, called upon the guest Dr. Cletus JM D'Souza to deliver the lecture.

Dr. Cletus explained about genes and their expression leading to the formation of proteins. Further, the control of gene expression can occur at transcription, RNA processing and translation level. He explained about the non-coding RNA which constituted 53% of junk DNA. Besides the nucleus, a compartment to which is overcrowded with the DNA with histones finally packed into chromosomes. The transcription has to happen by breaking the histone-DNA interaction. The histone has tails and got c-terminal and amino-terminal tails. The post-translational modifications take place by acetylation or methylation or phosphorylation. However the tailless histones function equally. The histone modifying enzymes aid in this process, Acetylases write the code & deacetylase remove the code added and also activate the gene or deactivate by shutting off the genes. The transcription factors and RNA polymerase bind to the chromatin during the time of expression of genes by modification of histone tails. The chromatin modifying complexes by non-coding RNA to make the genes expressed, favours the transcription. The long non-coding RNA act as decoy molecules bind to the sequester proteins thereby inhibiting the gene expression. The gene silencing by antisense RNA was discovered. The RNA silencing can happen by microRNAs

and also micro RNA are there to mop off micro RNAs. TmRNA has properties of tRNA and mRNA. CRISPR CAS has a family of DNA repeats found in most bacteria and archaeal genomes. The application of CRISPR-CAS technology in gene knock-out and knock-in was explained and can be also used *in vivo* and *ex vivo* gene editing.

The lecture was informative and ended up with the good interactive session which had good number of queries from students and faculty. The lecture was interesting with research data and examples. The session ended with whole-hearted thanks speech delivered by Dr. Radha Dayanidhi, Assistant Professor, Dept. of Biotechnology and Genetics, acknowledged the speaker with memento as a token of respect. The feedback form link was sent to students to understand the benefit of the lecture gained by them.

Glimpses of the guest lecture



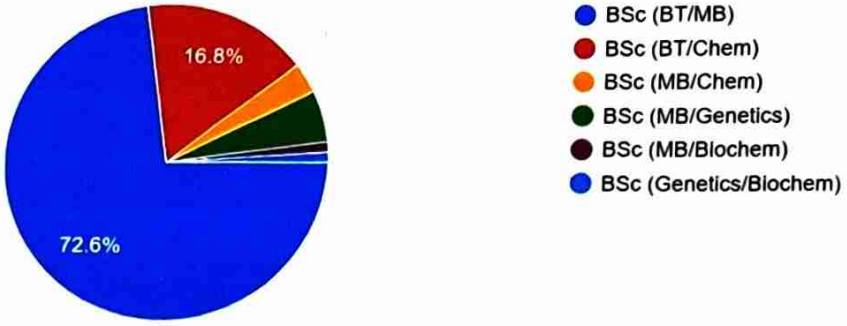
1. Anchoring by Tejaswini, BSc IV sem student
2. Welcome address by Dr. Jayashree D.R., Associate Professor, Dept. of Biotechnology & Genetics
3. Address by Vatsala G., Principal, MSRCASC
4. Dignitaries seated on the dais
5. Dr. Lakshmikanth R.N., HOD, Dept. of Biotechnology & Genetics
6. Introduction of the resource person by Dr. Sathish Babu
7. Dr. Cletus delivering the lecture
8. Dr. Cletus delivering the lecture
9. Student with a query
10. Vote of thanks by Dr. Radha Dayanidhi

Faculty of Life Science, BSc students on August 2, 2023

Feedback analysis

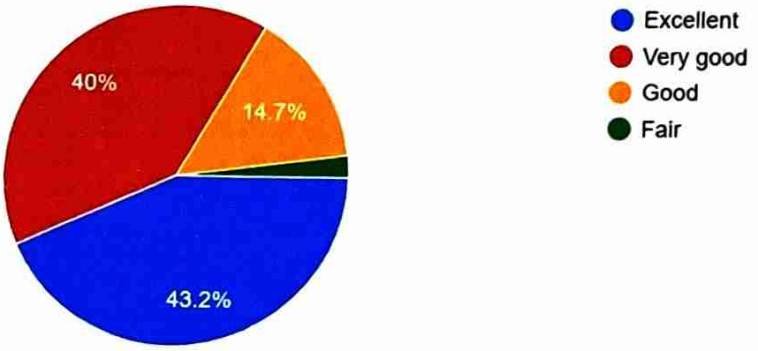
Course

95 responses



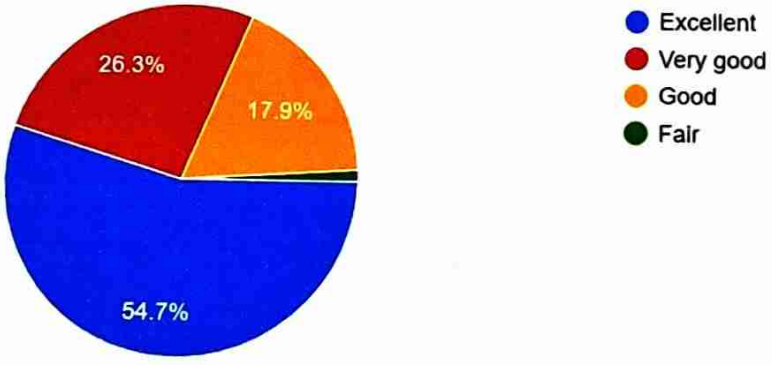
Effectiveness of the presentation

95 responses



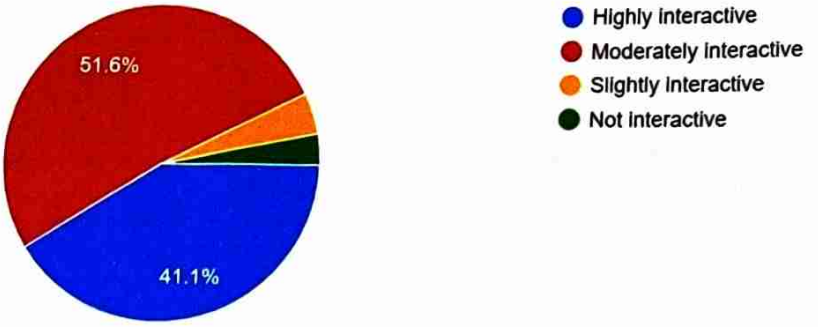
Relevance of the Topic chosen

95 responses



How would you rate the level of interaction and engagement during the seminar sessions?

95 responses



Did the guest lecture adequately address the latest advancements and trends in the life science field?

95 responses

How would you rate the overall organization and planning of the life science seminar?

95 responses

Principal,
M.S. Ramaiah College of Arts, Science & Commerce
MSRIT Post, MSR Nagar
Bangalore - 560 054

RAMAIAH College of Arts, Science & Commerce

Guest Lecture on **"RNA in gene expression"**

Organised by

Department of Biotechnology & Genetics

Time: 11.00-1.00

Date: Aug 2, 2023

Students' Attendance

Sl. No.	Student name	Class	Signature
1.	Nihaarika SN	2nd sem BT/MB	Nihaarika
2.	Jeshiny Poberta	2nd sem BT/MB	Jeshiny Poberta
3.	Harsha. D	2nd sem BT/MB	Harsha
4.	K. Lalithkrishna	2nd sem BT/MB	Lalithkrishna
5.	Lahasika V.	2nd SEM BT/MB	Lahasika V.
6.	Anavya. S	2nd Sem BT/MB	Anavya. S
7.	Deekshitha. M.S	2nd sem BT/MB	Deekshitha. M.S
8.	Sangeetha. V	2nd Sem BT/MB	Sangeetha
9.	Amoghavarsha. B.S	4th Sem BT/MB	Amoghavarsha
10.	Chethan. G 'A' sec	4th SEM BT/MB	Chethan. G
11.	Gowtham. R 'A' Sec	4th sem BT/MB	Gowtham. R.
12	Govardhana. V - 'A' Sec	4th Sem BT/MB	Govardhana. V.
13.	Megha Raj 'B' sec	2nd sem BT/chem	Megha.
14.	Lakshmi. A.S 'B' sec	2nd Sem BT/che	Lakshmi
15.	Niveditha. R 'B' sec	2nd sem BT/chem	Niveditha. R
16	Devika. d 'B' sec	2nd sem BT/chem	Devika
17.	Tejaswini. S 'B' sec	2nd sem BT/CHEM	Tejaswini
18.	Keziya. G. S. 'B' sec	2nd sem BT/Chem	Keziya. G.S
19.	Narya. L 'B' sec	2nd sem BT/Chem	Narya
20	Nagalakshmi M 'B sec'	2nd sem MB/chem	Nagalakshmi M
21	Gita Anjali. B 'A Sec'	2nd Sem BT/MB	Gita Anjali. B
22	B. Janani 'A Sec'	2nd Sem BT/MB	B. Janani
23	Prakruthi. R 'B Sec'	1st Sem BT/MB	Prakruthi. R
24	Priyadarshini. K 'B sec'	1st Sem BT/MB	Priyadarshini. K
25	Varsha. M 'B sec'	1st sem BT/MB	Varsha. M
26	Prajna. G 'B Sec'	1st sem BT/MB	Prajna.

RAMAIAH College of Arts, Science & Commerce

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Students' Attendance

Sl. No.	Student name	Class	Signature
1.	Rakshitha B.R	BSc IV MB/GTT	
2.	AKKA MAHADEVI.D	Bsc IV MB/BC	
3.	TEJASHREE.S	BSc BC/Gen	
4.	NANDINI.A	BSc BC/GEN	
5.	DEVIKA.V	BSC BC/GEN	
6.	INDHUJA.U	BSc BC/GEN	
7.	Deepika (IV).Sem	BSC BT/MB	
8.	N.Lakshmi Bharani (IV Sem)	BSc BT/MB	
9.	M. Karthikeya (IV) Sem)	"	
10.	Varsha.M	B.Sc BT/MB	
11.	Keerthi.R.P	B.Sc BT/MB	
12.	Prajna.G	B.Sc BT/MB	
13.	Amalkrishna.C	B.Sc MB/BT	
14	Aishwarya.V.S	B.Sc BT/MB	
15.	ARYA.K	BSc BT/MB	
16.	KEERTHANA.I.S	BSc BT/MB	
17.	Varsha.K.V	BSc BT/MB	
18.	Tejasvini K.S	BSc BT/MB	
19.	Sanjana N Raj	BSc BT/MB	
20	Mitali Prasad	BSC BT/Chem	
21	Divyanshi Singh	BSc BT/MB	
22	Shraddha Sudharshan	BSc BC/Gen	
23	S. Abineha	BSc BT/MB	
24	Syed Nabul Ahmed	BSc BT/MB IV Sem	
25.	Fyaz Sircar	BSC MB/GEN	
26.	Saptarshee Das	BSC BT/MB	

RAMAIAH
College of Arts, Science & Commerce

Guest Lecture on **"RNA in gene expression"**

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Department of Biotechnology & Genetics

Time: 11.00-1.00 Date: Aug 2, 2023

Students' Attendance

Sl. No.	Student name	Class	Signature
1.	ARTHI. S.	I Sem - B	
2.	PAVITHRA. S	I Sem - B	
3.	RIYA KUMARI	I Sem - B	
4.	NEHA C.M.	I Sem - B	
5.	MAHATHNINI. G.A.	I Sem - A	
6.	LISHA. S.	I Sem - A	
7.	SHRIYA GEJJEHALLI	I Sem - C	
8.	AISHWARYA. S.V.	I Sem - C	
9.	VAISHNAVI G. HEGDE.	I Sem - C	
10.	BIDHISA DAS	I Sem - C	
11.	TANUSHREE. R.	I Sem - C	
12.	SAYANT	I Sem - B	
13.	SPOORTHY. P.	I Sem - B	
14.	CHANDRIKA.	I Sem - B	
15.	NEELAM KUMARI	I Sem - B	
16.	RAJESWARY MUKHERJEE	I Sem - B	
17.	SONA KUMARI	I Sem - B	
18.	SNEHA. M.	I Sem - B	
19.	RIDHIKA JAMWAL	I Sem - B	
20.	K. SURYA SRIKAR	I Sem - C	
21.	M.D. SAHIL HASRAT	I Sem - C	
22.	SANJIT BAIN	I Sem - C	
23.	SUFYAN AHMED. K.	I Sem - C	
24.	BUSHAN. B.	I Sem - C	
25.	H.M. POORNA CHANDRA	I Sem - C	
26.	ARELAPRABHA DEB	I Sem - C	

RAMAIAH
College of Arts, Science & Commerce

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Department of Biotechnology & Genetics

Time: 11.00-1.00 Date: Aug 2, 2023

Students' Attendance

Sl. No.	Student name	Class	Signature
	RANJITHA·M.	IV Sem - B	
	YASHASWINI·K.N.	IV Sem - B	
	VASUDHA·K.	IV Sem - B	
	SRI VIDYA·S.	IV Sem - B	
	VAIBHAV G·P.	IV Sem - B	
	VARADA SRI LAXMI KRUTI	IV Sem - B	
	MEGHA KEDIA	IV Sem - B	
	VARSHA·S·R.	IV Sem - B	
	YASHASWINI·C·R.	IV Sem - B	
	PRAJWAL·M.	IV Sem - B	
	RIA RAGHU	IV Sem - B	
	SHREYA J.M.	IV Sem - B	
	SHEETAL·K.	IV Sem - B	
	SUSHMA·N.	IV Sem - B	
	QUEENCY RAINA	IV Sem - B	
	SHRAVYA M.V.	IV Sem - B	
	SANCHITHA SINGH	IV Sem - B	
	ROOPA SHREE·G.	IV Sem - B	
	SHALINI·S.	IV Sem - B	
	RANJITHA·R.	IV Sem - B	
	SPOORTHI·P.	IV Sem - B	
	PUJITHA·D.V.	IV Sem - B	
	MEGHANA KONDARAJU	IV Sem - B	
	KEERTHI·M.	IV Sem - B	
	SAION ROY	IV Sem - B	
	RAHUL·M.	IV Sem - B	

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College of Arts, Science & Commerce

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Students' Attendance

Sl. No.	Student name	Class	Signature
	NISARGA·B	IV Sem – A	
	NAYANASHREE·S·N·	IV Sem – A	
	ANANYA·G·	IV Sem – A	
	DHANUSHREE·N·K·	IV Sem – A	
	GOWTHAMI·M·	IV Sem – A	
	DEEPTANGI·P·	IV Sem – A	
	N·ANUSHA DEVI	IV Sem – A	
	FAIZA KHAN	IV Sem – A	
	NEJUMA·N·	IV Sem – A	
	NIHA FATHIMA·	IV Sem – A	
	ALIYA KHAN	IV Sem – A	
	GURUPREET KAUR	IV Sem – A	
	CHAITANYA·M·	IV Sem – A	
	ARPITHA·S·DANDIN	IV Sem – A	
	KAVYA·M·	IV sem – A	
	KARTHIK·U·	IV sem – A	
	AFRAN PASHA	IV Sem – A	
	CHIRAG·U·K·	IV Sem – A	
	B·B·MADHU MEGHANA	IV Sem – A	
	MUKTHA SHREE·K·R·	IV Sem – A	
	AKSHITHA·E·	IV Sem – A	
	GOPIKA·G·	IV Sem – A	
	NANDINI·R·	IV Sem – A	
	DHANYA·REDDY·G·P·	IV Sem A	
	ALAINA KHAN	IV Sem A	
	AATHIRA SUNIL	IV Sem A	

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College of Arts, Science & Commerce

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Students' Attendance

Sl. No.	Student name	Class	Signature
	SAHASRAMSHU	II nd Sem -	
	SASI KIRAN	II Sem -	Sasi Kiran
	UJWAL · R ·	II Sem -	Ujwal R
	PREETHAM	II Sem -	
	PRAJWAL AKAMBAR	II Sem -	
	BEESAM NAVDEEP	II Sem -	
	KHIZAV HUSSAIN	II Sem -	
	ASHMITH ASOK	II Sem -	
	ESHWAR K.M.	II Sem -	E Shwar
	HAFSA · H · S ·	II Sem -	H · S · HAFSA
	MOHAMMED ZAIN	II Sem -	
	JEZREEL JOHN JOHNSON	II SEM - B	
	DEEKSHA · D · KASHYAP ·	II Sem - C	
	KEERTHANA · S ·	II Sem - C	Keerthana S
	MANASA · V ·	II Sem - C	Manasa · V ·
	LAYA · N ·	II Sem - C	
	RAMYA · N · MURTHY	II Sem - C	
	AINRILA	II Sem - C	
	KOUSHIK	II Sem - C	Koushik
	MANISHA KUMARI	II Sem - C	Manisha kumari
	MANSI SINGH	II Sem - C	
	SNIGHDHA AMARNADH	II Sem - C	
	MANDARA · K ·	II Sem - C	K · Mandara
	SRI LALITHA HIRANMAI	II Sem - B	
	M · N · BHAVANA ·	II Sem - B	
	G · BABY TEJASWINI	II Sem - B	

RAMAIAH
College of Arts, Science & Commerce

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Students' Attendance

Sl. No.	Student name	Class	Signature
	C. THANUJA	I Sem - C	Thanuja. C.
	ANANDA KUMARA	I Sem - C	Ananda K
	GOWTHAM KUMAR GUPTA	I Sem - C -	Gowtham KG

RAMAIAH College of Arts, Science & Commerce

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Sl. No.	Student name	Class	Signature
	CHANDANA · V · R ·	II Sem - B	
	SHARANYA · C · DALAWAI	II Sem - B	
	V. ARCHANA ·	II Sem - B	
	N. AJAY AMIRTHARAJ	II Sem - B	
	RENUSRI DANDI	II Sem - A	
	NISCHAL · B · RUDRASWAMY	II Sem - A	
	AMRUTHAPRIYA · C ·	II Sem - A ·	
	R · VAISHNAVI	II Sem -	
	CHARAN · R ·	II Sem -	
	DEBJIT BANERJEE	II Sem	
	MOHAMMED ISMAIL	II Sem - B	
	NIKHITHA AJITH	II Sem - B	
	ARYA ARUN KUMAR	II Sem - B	
	DAISY DOMINIC	II Sem - A	
	KUSHI BAGEECHA	II sem - A	
	SREEJASHE BASU	II Sem - C	
	P. LAKSHMI SRAVYA	II Sem -	

RAMAIAH
College of Arts, Science & Commerce

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Students' Attendance

Sl. No.	Student name	Class	Signature
	Aayushi Indla	IV sem-A	Aayushi
	lekhana. V.	IV sem-A	Lekhana. V.
	Mythri	IV sem-A	Mythri M
	Sudheer	IV sem-A	K. Sudheer
	Anvesh	IV sem-A	Anvesh P.

RAMAIAH
College of Arts, Science & Commerce

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Time: 11.00-1.00 Date: Aug 2, 2023

Students' Attendance

Sl. No.	Student name	Class	Signature
	SYED JAFFAR RAZA	IV Sem - B	
	VACHAN · L ·	IV Sem - B	
	PRASHANT	IV Sem - B	
	SANJAY	IV Sem - B	
	SHAKTHI KUMAR	IV Sem - B	
	SONY · S · VARGHESE	IV Sem - B	
	ARDRA RAVEENDRAN · K ·	IV Sem · B	
	GOKUL KRISHNA	IV - Sem - B	
	FAHEAD HUSSAIN	IV Sem - B	
	TEJESWINI	IV Sem - B	
	SIDHARTHA · C · RAJESH	IV Sem - B	
	SHABAZ SAKEER	IV Sem - B	
	KARTHIK · N · R ·	IV Sem - B	
	SUCHITRA · S ·	IV Sem - B	

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College of Arts, Science & Commerce

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Students' Attendance

Sl. No.	Student name	Class	Signature
	G.Y. SAI PRATHYOOSHA	IV Sem - C	
	B. NAGA TRIVENT	IV Sem- C	
	SHIPLY CHANDRA	IV Sem - C	
	ZULEKHA HAFSA AKHTAR	IV Sem - C	
	SUCHITR	IV Sem - C	
	P.L. SAI NIREEKSHA	IV Sem C	
	ADITI. C. VEREKUPPT	IV Sem C	
	SATWANA. P.	IV Sem C	
	GAURI KRISHNA	IV Sem C	
	DEEKSHA. N.	IV Sem C	
	CHIRALI.	IV Sem C	
	G. NAGA KEERTHI	IV Sem C	
	JYOTHISHMITHA	IV Sem C	
	RITUJA BISWAS	IV Sem - C	
	NIDHI VERMA.	IV Sem - C	
	AARUSHI K.P.	IV Sem - C	
	SHIVANI. B.N.	IV Sem - C	
	THANUJA. V.S.	IV Sem - C	
	INDREJEET. J.	IV Sem C	
	ARYAN RAGHU.	IV Sem C	

Principal,
M.S. Ramaiah College of Arts, Science & Commerce
MSRIT Post, MSR Nagar
Bangalore - 560 054

Report on Value Added Program
(An IQAC Initiative)
Under DBT Star

"Applications and Advantages of Plant Tissue Culture Research"

IQAC Initiative, under DBT Star, Department of Biotechnology/Genetics had organized value added program for duration of 60 hours for B.Sc. Biotechnology/Microbiology/Genetic students of V Semester, as per the syllabus designed according to Prof. Pushpa H, DBT Star, Co-ordinator & Vice Principal.

The Value Added Program was inaugurated on Friday, 4 August 2023, on **"Applications and Advantages of Plant Tissue Culture Research"**, with traditional of MSRCASC by lighting the lamp, college anthem, invocation , welcome speech. Dr. Vatsala G, Principal, Prof. Puspa H, Vice Principal and Dr. Lakshmikanth RN, HOD. addressed to students on techniques & developments in science for a susceptible agro & encouraged them to grow more greens.

The resource person and guest speaker for the day was **Dr, Madhusudhan R.V.** Manager Production (Ornamentals) Indo-American Hybrid Seeds, Bangaluru, Karnataka. Sir spoke on basic concepts of Plant Tissue Culture. The company is mainly involved in the development and production of hybrid seeds of vegetables, flowering plants, field crops, and the production of ornamental plants. Students were also, informed about Start-up programs entrepreneurship, internship and project facilities provided by the company.

Inauguration Function: Friday, 4 August 2023

Lightening of the Lamp *Welcome by Principal with sapling*

Dr. Vatsala G (Principal) **Dr. Madhusudhan RV (Resource Person)** **Dr. LakshmiKanth RN (HOD)**

Students at Inaugural Function

Dr. Madhusudhan RV: Guest Lecture

Plant Tissue Culture (PTC) is a practice used to propagate plants under sterile conditions, often to produce clones of a plant. Different techniques in plant tissue culture may offer advantages over traditional methods of propagation. The program is designed to provide the same through theory sessions and lab exercises. Topics included in the value added program are Principles applications and advantages in fields of various facets of Plant Tissue Culture.

Time table was framed according to the syllabus-module. The classes were conducted for B.Sc., V semester Biotechnology and Genetic students (NEP batch) after their class hours and free hours vice-versa with teaching faculties/ convener Prof. Jayashree DR and Dr. Vijayalakshmi RN of the program. Both theory and practical classes was for 60 hours, from 1/12/2023 to 25/06/24 completing with the duration of 6 months.

The main objective of the workshop was intended to learn basic tissue culture techniques, principles, applications and hardening of the plants. Industrial visit aimed in creating mass production knowledge and methodology in bulk It also aimed at creating an awareness in young minds on sustainable agriculture for future food. Totally 42 students participated in the program.

Students were introduced with video clips on Indo-American Hybrids Seeds company. Tissue culture laboratory and documentaion chamber were viewed. Field visits on hardening of tissue cultured plants and interaction session both for theory and field visit with green house sections were assisted by Dr, Madhusudhan RV. Some of the endangered species were also

introduced to the students with their medicinal values, which are Tissue Culture for balancing the biodiversity and conservation of various wild species.

Manmohan Attavar (12 July 1932 - 12 December 2017) was an Indian horticulturist, plant breeder, writer and the founder of Indo American Hybrid Seeds (IAHS), an organization engaged in scientific plant breeding and horticulture.

Indo-American Hybrid Seeds was established in 1965, Bangalore Sy No 13/4 & 14, 7th Km, Banashankari-Kengeri Link Road, Channasandra, Rajeshwarinagar, Bangalore, India 560098. As a unique company in hybrid seeds of vegetable crops, field crops and flower seeds, ornamental plants and seed quality, they strive to provide the best products and services. Their highly qualifies team are dedicated to enhance the customers satisfaction, implementing efficient internal systems and developing new marketing strategies to engage customers across India.

Students upgraded with the knowledge of entrepreneurship and startup practical applications, on growing plants through cell from lab to field, as well as how to deal with customers in a profiled principles and manner profiting the business and also, an eco-friendly sustainable practice on greeneries with socio-economic values. Students were complemented with Syngonium plants with Company bags.

Program Schedule: 1/12/2023 *To* 25/06/2024 *for 6 months durations*

Modules For Theory (Two hours for 10 days) 20 hours

1. Introduction, History, Scope, advantages, limitations and applications of Plant tissue culture
2. Laboratory organization, tools and techniques, methods of sterilization, laboratory contaminants and control of contamination
3. Media and Culture Preparation- Role of Micro and macro nutrients, vitamins, carbon source, plant growth regulators, solidifying agents, pH, temperature, preparation of media- MS, B5, Vaccine and Went medium
4. Concepts in plant tissue culture- Totipotency, polarity, differentiation, dedifferention, dedifferentiation.
5. Culture Techniques: Explant selection, sterilization and inoculation, callus and cell suspension culture.
6. Micropropagation through various explants (Leaf, Stem, Axillary bud, Tuber, Corms and Bulbills).
7. Artificial seed propagation
8. Hardening Factors affecting plant tissue culture- Hardening stages, Role of Poly house, Net House, Compost, Chemical fertilizer, Coco pit, Soil in hardening.
9. Meristem culture for the production of virus free plants.
10. Transgenic plants for crop improvement (dicot and Monocot including Maize, Rice, Wheat, Cotton, Brinjal etc. Resistance to herbicide, insecticide, virus and other diseases, Flaour save tomato etc. barnase and barstar). Transgenic plants for molecular farming.
11. Plant transformation: Methods of gene transfer in plants. Agrobacterium and CaMV mediated gene transfer; direct gene transfer using PEG, micro injection,

electroporation, microprojectile (biolistics) method, liposme mediated DNA delivery; Transposons as vectors.

12. Application of Plant tissue culture- Micropropagation- Types, Stages, Establishment of propagated plants, micropropagation for large scale multiplication of crop plants, forest trees, horticulture, floriculture, medicinal plants and ornamentals.

Modules For Practicals (Four hours for 10 days) **40 Hours**

1. Instrumentation of Plant Tissue Culture
2. Aseptic techniques- Washing of Glass wares and sterilization technqiues
3. Preparation of stock solution and preparation of media
4. Monocot and Dicot Seed cultures for the establishment of organ cultures
5. Establishment of organ cultures for the induction of callus
6. Establishment of organ cultures for induction of multiple shoots
7. Single cell culture
8. Shoot tip culture, axillary bud, meristem culture
9. Propagation of horticultural, floricultural, medicinal and aromatic plants
10. Hardening methods and utility of plants
11. Agrobacterium mediated gene transfer
12. Protoplast fusion by PEG
13. Preparation of artificial seeds.

Dissertation and Industrial Visits and Guest Lecture

The Course Outline included the following aspects:

- Principles & applications of Plant Tissue Culture
- Preparation of Tissue Culture media, sterilization
- Update advanced techniques/development
- Hands-On training for various culture techniques
- Hardening of the Plant with "Biofertilizers"

The **Course contents were:**

- Workshop materials, Lecture by trained faculties
- Individual Hands-On Training
- Certificate of participation issued by the Institutio

Images of Technical Sessions

Theory Sessions

Principles, Applications Biochemical Calculations & Advantages of PTC

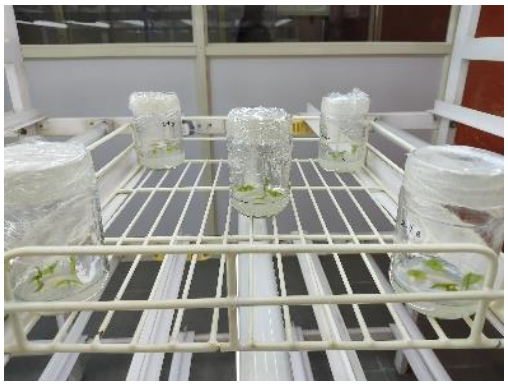
Students at Technical Sessions

Images of Practical Sessions


Practical Sessions: On Hands Training

Students Training on Sterilization Techniqes, Inoculationof Explants and Organs

Images of Inoculation Chamber



Explants In The MS Media Culture Vials




Saplings on MS Media in culture vials

Plantlets From Explants : Node, Internode, Axillary Buds. Leaves

Students' observation outside the Inoculation Chamber

Images of Industrial Visit

Students and staff travelling towards Industrial Visit

Group Photo at Entrance of Indo-Americans

Front View of Indo-American Hybrid Seeds Pvt. Ltd. At Garden Centre With Ornamental Plantations

Images of Industrial Visit: Technical Sessions

Manmohan Attavar
Founder
With Company Logo

Dr. Madhusuhan
Manager Production
(Ornamental)

Theory Session At Indo-Americans
By Dr. Madhusudhan

Images of Industrial Visit: Technical Sessions

Plant Tissue Culture Laboratory and Documentary Room

NABL Accredited: Seed Quality Assurance Technology Room

Images of Industrial Field Visit

Interaction With Students

Dr. Madhusudhan Expalin About The Hardening of Plants Outside and Inside Ihe Green House

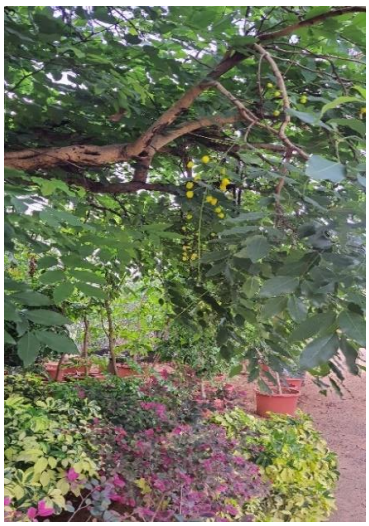
Succulent Plants Inside The Green House

Overview of Green House

Overview of the Company Garden and Vehicles Used for Transportation of Sapling and Other Requirement

Images of Wild, Ornamental, Hybrid and Endangered Species

Wild Species: Asparagus racemosus



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Wild Species: Cassia fistula

Endangered Species: Elaeocarpus ganitrus Tree (Rudhaksa)

Wild Species: Agave

Ornamental Floras: Bougainville without Thorns (Hybrid Varieties)

Ornamental Floras: Marigold, Zinnia, Gazania, Celosia, Red Sage (Normal Varieties)

Hanging Varieties: Monstera, Pilea, Ivy

Hybrid Fruiting Saplings
(Butter fruit, Mango, Gauva, Star fruit, ,Goose berries etc.,)

Company Outlet: Floras with Fancy Potteri

Group Photos of Faculties and Students of B.Sc., Biotechnology & Genetics V Semester

Report on

Hands on training program on

"Digital Design using VERILOG on FPGA Kit"

Date :19th January 2024

COURSE: BSc ECs 3rd SEMESTER.

Resource person: Mr SREENATH, Digitrack Instruments

Venue: Electronics Lab

Time: 10:00 am to 01:30 pm

Faculty in charge: Mrs Asharani R

Objectives:

- **To get the students familiarize with the FPGA Xilinix Spartan 6 kit with ISE 14.1 installer.**
- **To make them understand how to create a Verilog code and simulate it**
- **To make them familiarize with the hardware interfacing with the FPGA kit such as stepper motor, dc motor control of speed and directions and LED, LCD display control.**

Field Programming Logic arrays(FPGA) kits used in data center, aerospace engineering, defense, artificial intelligence (AI), industrial IoT (internet of things), wired and wireless networking, automotive, and countless other industries. Such devices are often in environments where users need real-time information. Field Programmable Gate Arrays (FPGAs) are widely used in the digital hardware industry as they provide flexibility and efficiency in hardware design. Xilinx is a leading manufacturer of FPGAs, and the Spartan 6 FPGA is one of their popular product lines. Xilinx Spartan 6 FPGA is a powerful hardware device that can interface with various sensors

and actuators. Spartan 6 devices offer industry-leading connectivity features such as high logic-to-pin ratios, small form-factor packaging, soft processor, and a diverse number of supported

I/O protocols. Ideally suited for a range of advanced bridging applications found in consumer, automotive infotainment, and industrial automation.

The Resource person Mr Sreenath, Digitrack Instruments educated the students regarding the Verilog & VHDL language and how it is used in the industrial applications and why it is preferred. He explained to the students how to run a Verilog code in ISE 14.1 installer in Xilinx Spartan 6 and also demonstrated how to interface the sensors like thermistors, servo motors, stepper motors with the Xilinx kits using General Purpose Input output units(GPIO).

Mr Sreenath explained to the students the sequential steps need to be followed for the synthesising and implementation of Verilog code. He explained to them how to create a new Project, which package need to be selected, to select the package TQG144 with 144 pins and to select the preferred language Verilog or VHDL. The IC selected was XC^SLX9.He demonstrated to them how to create a module by selecting new source.

He also demonstrated to them how to check the syntax error and the simulation and how to verify the output by observing the waveforms corresponding to digital inputs. He had done the simulation for verification of Truth tables of Basic gates, multiplexer, demultiplexer, encoder, decoder logic circuits and counters.

Mr Sreenath elaborated on the implementation steps and instructed to students that in order to assign pin numbers they have to refer the manual. He showed to the students the different components on the FPGA Board and how to identify the pins in I/O slots. The Flat Ribon Cable(FRC) are connected according to the pin numbers. Input FRC and output FRC ared used for interfacing of FPGA kits with LED display. Each of the FRC slots are having provision of power supply and ground. Some of the FRCs like FRC 8 is having both +3.5 and -3.5 power supply especially used for Digital to Analog Converters(DAC).

Mr Sreenath showed to the students how the Verilog code was compiled using Xilinx ISE and synthesized to generate the netlist. He told that further they have to map the netlist to the target device and should be placed and routed to create a bitstream file. The bitstream file should be then uploaded to the Xilinx Spartan 6 FPGA kitbusing the Xilinx Platform Cable USB II. The design was interfaced with the FPGA kit using a breadboard and LEDs.

The resource person also demonstrated to the students how to dc, stepper motors and sensors like thermistors with FPGA kit. He demonstrated to the students interfacing of a DC motor with the Xilinx Spartan 6 FPGA kit with the dc motor card containing motor driver

circuit that can control the direction and speed of the motor. He told that L293D is a popular motor driver IC that can be used for this purpose. The motor driver IC has two input pins, IN1 and IN2, which control the direction of the motor, and two output pins, OUT1 and OUT2, which drive the motor.

He demonstrated to the students interfacing a stepper motor with the Xilinx Spartan 6 FPGA kit, and requirement of a stepper motor driver IC that can control the step and direction of the motor. He told that L298N is a popular motor driver IC that can be used for this purpose. The motor driver IC has two input pins, DIR and STEP, which control the direction and step of the motor.

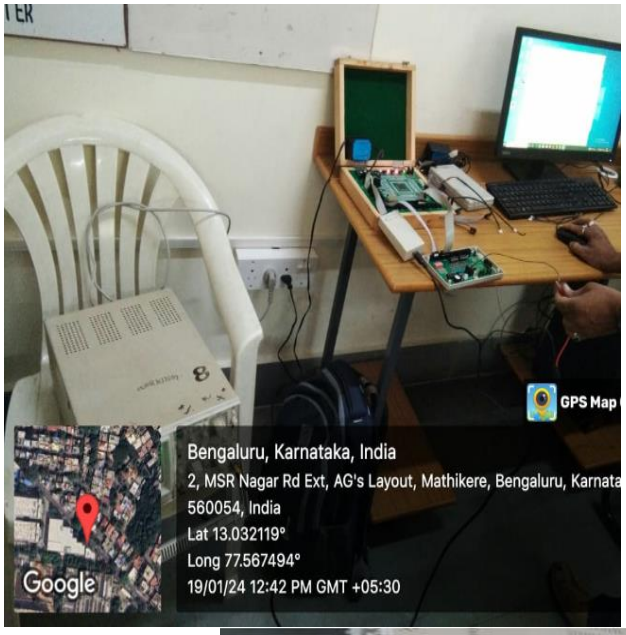
Outcome-:

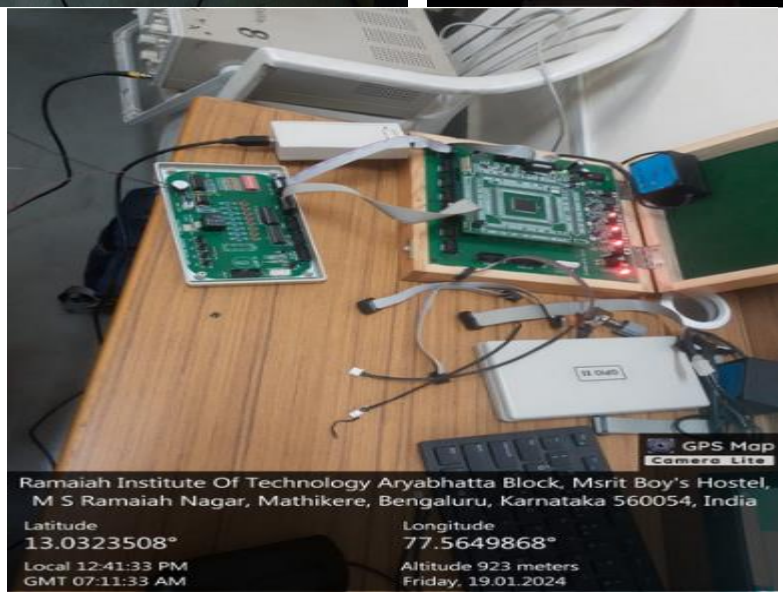
- The student gained deep understanding of FPGA Xilinix Spartan 6 kit and synthesizing, implementation and hardware interfacing.
- It enhanced their knowledge, provided hands on training on FPGA kits and inculcated their interest to start a career in VLSI industry.
- It also demonstrated the power and flexibility of FPGAs in digital hardware design

Faculty in charge:
(Mrs Asharani R)

HOD **DBT Star College Scheme Coordinator** **Principal**

Photos of Hands on Training Program on "Digital Design using VERILOG on FPGA Kit" for 3rd semester students of BSc ECs





Faculty in charge:
(Mrs Asharani R)

HOD **DBT Star College Scheme** **Principal**

Coordinator

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Recognized by UGC under 2f & 12B of UGC act 1956

Hands on Training Program on on "Digital Design using VERILOG on FPGA Kit" for 3rd semester students of BSc ECs

Participant list

Date: 19th January 2024

COURSE: BSc ECs 3rd SEMESTER.

Sl No:	Register Number	Student name	Signature of the student
1	U18EV22S0218	SHIVAM CHAUBEY	Shiva
2	U18EV22S0276	SHARATH KUMAR B	
3	U18EV22S0052	SANATH VISHNU	
4	U18EV22S0219	HEMANTH S	
5	U18EV22S0061	NAYANA H L	
6	U18EV22S0062	SRIDHARAN ISHA	
7	U18EV22S0063	HARSHITH GOWDA M	
8	U18EV22S0220	M ROHINI	
9	U18EV22S0064	ANUSHA R	
10	U18EV22S0065	THRISHA N	Thrisha N
11	U18EV22S0066	T GOUTHAM KUMAR	
12	U18EV22S0231	PAVITHRA N	PAVITHRA.N
13	U18EV22S0349	PAVAN KUMAR V	
14	U18EV22S0353	SANGEETHA R	
15	U18EV22S0362	SHREYA GONI	
16	U18EV22S0363	TEJASWINI S	
17	U18EV22S0373	SANJANA R	Sanjana R.
18	U18EV22S0374	SARANYA M P	
19	U18EV22S0372	KEERTHI PRAHALAD K	
20	U18EV22S0365	R KRISHNA MURTHY	
21	U18EV22S0218	SHIVAM CHAUBEY	

Faculty in charge:
(Mrs Asharani R)

HOD

HEAD OF THE DEPARTMENT
Department of Electronics
M. S. Ramaiah College of
Arts, Science & Commerce
M.S.R. Nagar, Bangalore-560 054

DBT Star College Scheme Coordinator

CO-ORDINATOR
DBT-STAR COLLEGE SCHEME
M.S. Ramaiah College of Arts, Science & C
MSRIT Post, MSR Nagar, Bangalore -

Principal
Principal,
M.S. Ramaiah College of Arts, Science & Commerce
MSRIT Post, MSR Nagar
Bangalore - 560 054

Report on

Hands on training programme on "Mat lab onramp"

Date : 9/10/2023 to 12/10/2023

COURSE: BSc ECs 3rd SEMESTER.

Resource person: Mrs ASHARANI R

Venue: 301 COMPUTER LAB

Objectives:

- Make students to learn the basic MATLAB commands
- Make students to learn familiarise with the different windows of MATLAB
- Students are capable to write the simple MATLAB program to perform the mathematical operations

MATLAB is a multi-purpose mathematical computing environment used for various applications. Mat lab codes are useful to program the mathematical operations, signal processing, image processing and computer vision. The Fundamental skills in required for students to design any computational modules at various level is helps them in various Electronics field. The Department is identified this area to address the students by delivering a hands on training on MATLAB of 3 hours. Then students are instructed to write the mat lab code for simple mathematical operation to enhance the programming skills.

This student created their own account in the mathwork.com in order to start the course then all the students instructed to provide the appropriate data required to create the account. All the students are taken the course offered by the mathwork.com. the working MATLAB environment consisting of different windows for example command window, editor window, workspace.

Students started writing the codes initially on the command window, the different task like variable assignment, simple mathematical calculation, data handled etc.command window allow user to execute one line at a time. If we want to execute a program that performs a particular mathematical operation consisting of multiple lines is the challenging task hence

students are instructed to use the script window or editor window. The guidelines for error messages and warning indicator are told to debug the program and to rectify the errors in the written program in the script window in the MATLAB environment.

Students are exposed for arrays in MATLAB environment viz creation of one dimensional and multidimensional vectors, array creation functions, indexing array elements, extracting multiple elements. Changing values in the array, operations on array, creating matrix of random variables.

The major application is MATLAB is to create the visualization of data so in this session students are instructed to practice some of the visual commands like plot, MATLAB uses the vector values as the y-axis data and sets the x-axis data to range from 1 to n (the number of elements in the vector). Some of the commands used for line width, colour of the graphs, labels for the graphs are discussed. Data interpretation is one of the important applications of MATLAB so next task we discussed was data handling in the MATLAB. The in charge teacher provides some practice exercise program for students and verified the output of the written code in mat lab environment

Outcome:

- Students learnt the MATLAB codes for basic mathematical operations
- Students are cable to write simple MATLAB programs for arrays, modification of array elements, indexing, vectors, data handling
- Students received the MATLAB onramp certificate from mathwork.com

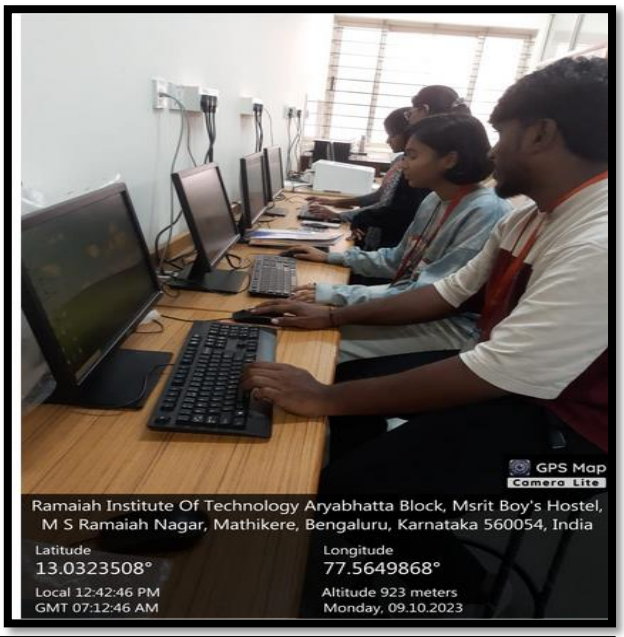
Faculty in charge:
(Mrs Asharani R)

HOD **DBT Star College Scheme Coordinator** **Principal**

Photos of Hands on training program on "Mat lab onramp" for 3rd semester students of BSc [ECs].

DATE: 9/10/2023 to 12/10/2023

PLACE: 301 Computer Lab , MS Ramaiah College Of Arts Science And Commerce.



Certificate:


MathWorks | Training Services

Course Completion Certificate

Keerthi Prahalad K

has successfully completed **100%** of the self-paced training course

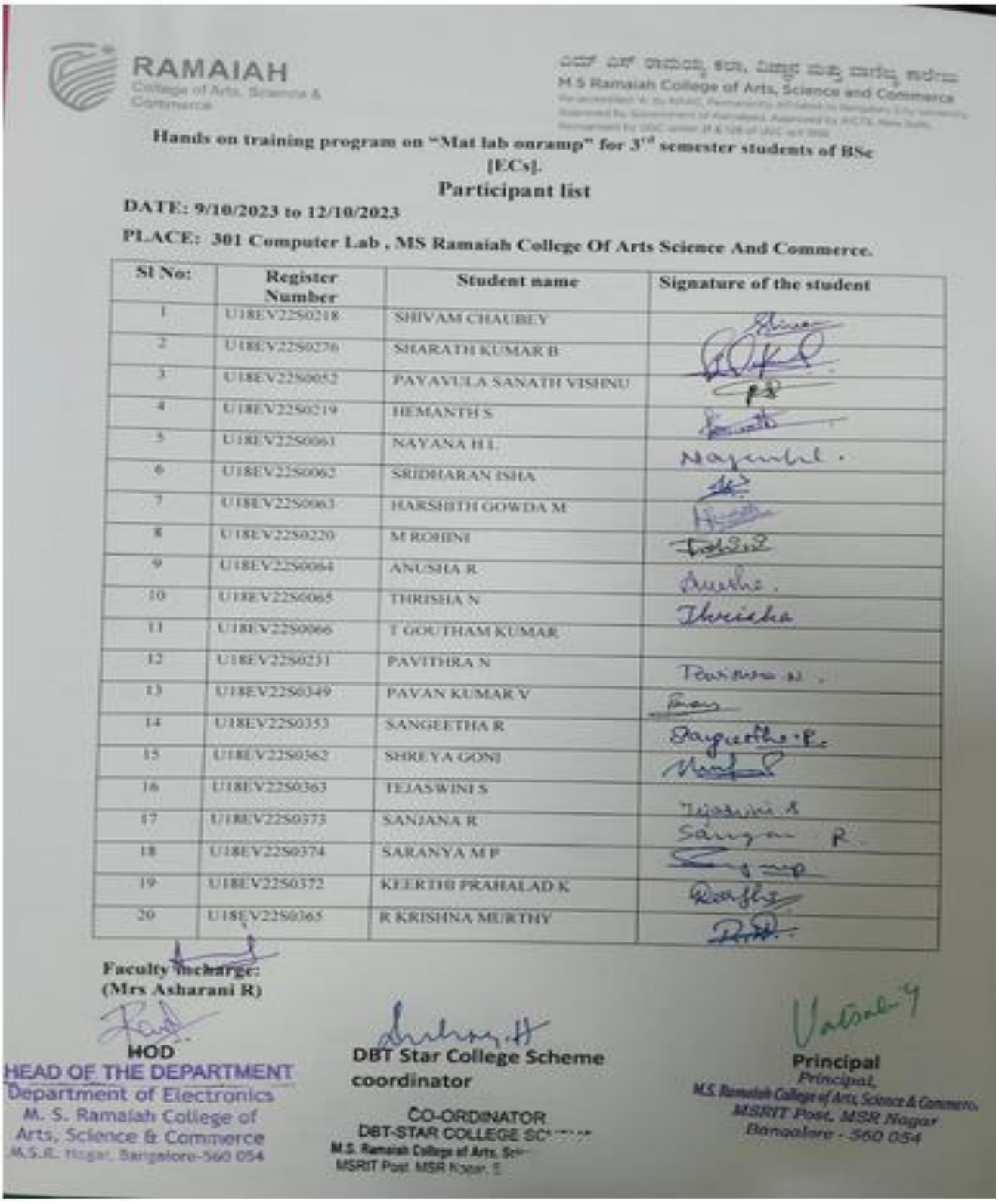
MATLAB Onramp

DIRECTOR, TRAINING SERVICES

12 October 2023

Faculty incharge:
(Mrs Asharani R)

HOD **DBT Star College Scheme coordinator** **Principal**



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Hands on training program on "Mat lab onramp" for 3rd semester students of BSc [ECs].

Participant list

DATE: 9/10/2023 to 12/10/2023

PLACE: 301 Computer Lab , MS Ramaiah College Of Arts Science And Commerce.

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Faculty Incharge:
(Mrs Asharani R)

HOD
HEAD OF THE DEPARTMENT
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DBT Star College Scheme coordinator
CO-ORDINATOR
DBT-STAR COLLEGE SC...
M.S. Ramaiah College of Arts, Sc...
MSRIT Post MSR Nagar, B...

Principal
Principal,
M.S. Ramaiah College of Arts, Science & Commerce,
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Department of Biochemistry
MSRCASC

Value-added program on

"Hands-on training in Basic Molecular Biology Techniques: Enhancing Research Skills"
in collaboration with
Medauxin, Bengaluru
(An IQAC initiative)

Ref. No: Chem/BC/PG-2024-01 **Date: 02/01/2024**

Circular

Department of Biochemistry is organizing a VAP on "Hands-on training in Basic Molecular Biology Techniques: Enhancing Research Skills" in collaboration with Medauxin, Bengaluru from Jan 4th -7th 2024 for M.Sc. 2nd year Biochemistry students and from 25th- 28th, 2024 for M.Sc. 1st year Biochemistry students at Medauxin.

Dr. Suveditha S.
Assistant Professor &
Convenor
MSRCASC

Dr. Surendra A. S. (HoD)
Department of Chemistry
and Biochemistry
MSRCASC

Head of the Department
CHEMISTRY / BIO-CHEMISTRY
M S. Ramaiah College of Arts,
Science & Commerce
Bangalore - 560 054

Dr. Pushpa H.
Vice Principal
MSRCASC

Dr. Vatsala G
Principal
MSRCASC

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MEDAUXIN

HANDS-ON TRAINING ON

"BASIC MOLECULAR BIOLOGY TECHNIQUES: ENHANCING RESEARCH SKILLS"

Value-added program

organized by

Department of Chemistry & Biochemistry

M. S. Ramaiah College of Arts, Science and Commerce

In collaboration with

Medauxin, Bengaluru

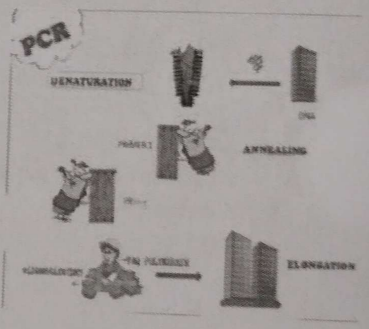
(An IQAC initiative)

DATE: 4/01/2024 to 7/01/2024

VENUE: MSRCASC and MEDAUXIN

COURSE OUTLINE:

- Laboratory safety procedures & good laboratory practices
- The use & proper handling of molecular biology lab equipments
- Sample collection & storage
- Nucleic acid extraction: DNA from various samples
- Nucleic acid quantification
- Polymerase chain reaction (PCR) amplification
- Agarose gel electrophoresis and elution (PCR product purification)
- Data interpretation and troubleshooting
- Basics of primer designing
- DNA sequencing & introduction to bioinformatics tools



Convenory

Dr. Suveditha S.
Asst. Professor, Dept. of Biochemistry
M.S.R.C.A.S.C

Ms. Kavya Lakshmikanth
Molecular Biologist
Medauxin

Mr. Ajay Babu Nekkanti
Chief Executive Officer
Medauxin

Student Coordinatory

Mr. Sulthan Pasha

Ms. Dhamini C.N

Ms. Sandhya J.

Ms. Jalaja B.S.

Advisory Committee

HOD of Chemistry & Biochemistry
Dr. Surendra A. S.

Vice Principal
Dr. Pushpa H.

Principal
Dr. Vatsala G.

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College of Arts, Science & Commerce

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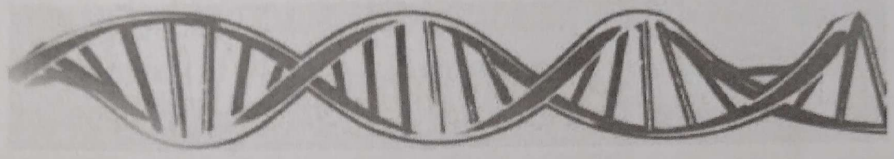
MEDAUXIN

Hands-On Training On "Basic Molecular Biology Techniques: Enhancing Research Skills"

A VALUE-ADDED PROGRAM,
ORGANIZED BY

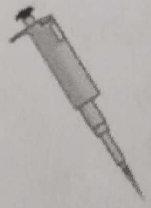
Department of Chemistry and Biochemistry,
M. S. Ramaiah College of Arts, Science and Commerce
In Collaboration With
Medauxin, Bengaluru
(An IQAC Initiative)



DATE: 01/02/2024 TO 04/02/2024 VENUE: MSRCASC AND MEDAUXIN

COURSE OUTLINE:

Laboratory Safety Procedures and Good Laboratory Practices
The Use and Proper Handling of Molecular Biology Lab Equipment
Sample Collection and Storage
Nucleic Acid Extraction: DNA from Various Samples
Nucleic Acid Quantification
Polymerase Chain Reaction (PCR) Amplification
Agarose Gel Electrophoresis and Elution (PCR Product Purification)
Data Interpretation and Troubleshooting
Basics Of Primer Designing
DNA Sequencing and Introduction to Bioinformatics Tools



CONVENORS

Dr. Suveditha S
Asst. Professor, Dept of Biochemistry
M.S.R.C.A.S.C

Ms. KAVYA Lakshmikanth
Medauxin

Mr. Ajay Babu Nekkanti
CEO, Medauxin

STUDENT CO-ORDINATORS

Mr. Sulthan Pasha **Ms. Dhamini C.N.** **Ms. Sandhya J.** **Ms. Jalaja B. S.**

ADVISORY COMMITTEE

Hod Of Biochemistry
Dr. Surendra. A. S

Vice Principal
Dr. Pushpa H.

Principal
Dr. Vatsala G.

RAMAIAH
College of Arts, Science & Commerce

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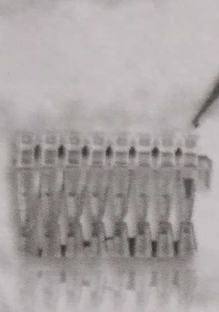
MEDAUXIN

"HANDS-ON TRAINING ON BASIC MOLECULAR BIOLOGY TECHNIQUES: ENHANCING RESEARCH SKILLS"

(An IQAC initiative)



Value-added program
organized by
Department of Chemistry & Biochemistry
M. S. RAMAIAH COLLEGE OF ARTS,
SCIENCE, AND COMMERCE

In collaboration with

MEDAUXIN, Bengaluru

4^{th}-7^{th} JANUARY 2024 Batch 1

1^{st}-4^{th} FEBRUARY 2024 Batch 2

MSRCASC AND MEDAUXIN

ABOUT MSRCASC

M. S. Ramaiah College of Arts, Science, and Commerce, established in 1994 by the late Dr. M. S. Ramaiah, provides a diverse range of undergraduate and postgraduate degree programs in arts, science, commerce, and management. The institution is affiliated with Bengaluru City University. Authorized by AICTE in New Delhi and recognized by the Government of Karnataka, the college holds accreditation from the UGC under Sections 2(f) and 12(B) of the UGC Act of 1956. Notably, it has received an "A" grade reaccreditation from NAAC, showcasing its commitment to academic excellence. A pioneer in education, continuously striving to incorporate innovative teaching methods to foster the development of students into future professionals.

ABOUT THE DEPARTMENT

Established in 1994, the Department of Chemistry & Biochemistry at M.S Ramaiah College of Arts, Science, and Commerce offers both undergraduate (UG) and postgraduate (PG) programs in Chemistry & Biochemistry. Our highly qualified faculty employs contemporary teaching tools, including ICT-enabled learning and molecular models, to enhance conceptual understanding. Recognized under the DBT-STAR college scheme, our department has a track record of securing university ranks. Research initiatives include projects supported by seed money grants, KSCST, SERB-TARE, and KSTA. Department also has collaboration with Biocon Academy to train postgraduates with job assistance.

ABOUT MEDAUXIN

Medauxin, established in 2015, aims to deliver high-quality services and genomic solutions in the field of biotechnology. Headquartered in Bengaluru, with a network of distributors across the country, Medauxin specializes in genomics R&D services. The company offers genomic sequencing and bioinformatics services to global life sciences, healthcare businesses, academic and government institutions in India. Medauxin is actively involved in marketing, selling, and servicing a diverse range of technological products widely utilized by clinical diagnostics and life sciences organizations. With a strong focus on customer satisfaction, Medauxin is well-positioned to quickly establish leadership in its markets.

ABOUT THE VAP

Department of Chemistry & Biochemistry is organizing a four-day VAP on "Hands-on training on Basic Molecular Biology Techniques: Enhancing Research Skills ". Students will engage in hands-on activities to enhance their skills and understanding of various molecular biology techniques. The VAP aims to equip M.Sc. Biochemistry students of I & III semesters with the necessary knowledge for research endeavours and industry-ready jobs. The program, held in collaboration with Medauxin, underscores a hands-on and practical approach to acquiring vital molecular biology techniques, coupled with industry exposure.

OBJECTIVE

1. Improve students proficiency in fundamental molecular biology techniques through practical, hands-on learning experiences.
2. Provide exposure to real-world applications in the industry.
3. Equip students with the skills necessary for engaging in research activities.

COURSE OUTLINE

1. Laboratory safety procedures and good laboratory practices
2. The use and proper handling of molecular biology lab equipment
3. Sample collection and storage
4. Nucleic acid extraction: DNA from various samples
5. Nucleic acid quantification
6. Polymerase Chain Reaction (PCR) amplification
7. Agarose gel electrophoresis and elution (PCR product purification)
8. Data interpretation and troubleshooting
9. Basics of primer designing
10. DNA sequencing and introduction to bioinformatics tools

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PATRONS

Dr. M.R. JAYARAM
Hon'ble Chairman, GEF

SRI. M.R. JANAKIRAM
Hon'ble Director, GEF

SRI. M.R. KODANDARAM
Hon'ble Director, GEF

SRI. B.S. RAMAPRASAD
Chief Executive, GEF (Eng... & GS)

SRI. G. RAMACHANDRA
Chief Executive, GEF (Eng... & GS)

ADVISORY COMMITTEE

Dr. VATSALA G.
Principal
MSRCASC

Dr. PUSHPA H.
Vice Principal
MSRCASC

Dr. SURENDRA A. S.
HoD Biochemistry/Chemistry
MSRCASC

CONVENORS

Dr. SUVEDITHA S.
Asst. Professor
MSRCASC

Mr. AJAY BABU NEKKANTI
Chief Executive Officer
Medauxin

Ms. KAVYA LAKSHMIKANTH
Molecular Biologist
Medauxin

Ms. VIDHYA GURIKAR
Sr. Molecular Biologist
Medauxin

STUDENT COORDINATORS

Ms. JALAJA B. S.
Ms. SANDHYA J.

Ms. DHAMINI C. N.
Mr. SULTHAN PASHA

Report on Value-Added Program on

"Hands-on training in Basic Molecular Biology Techniques: Enhancing Research Skills"

(An IQAC Initiative)

Title: Hands-on training in basic molecular biology techniques: Enhancing Research Skills"

Resource person: Mr. Ajay Babu Nekkanti, Chief Executive Director, Medauxin

Organizer: Dr. Suveditha, Asst. Professor, MSRCASC

Dr. Surendra A. S, HoD Dept of Biochemistry/Chemistry

Date: 4th - 7th January, 2024 (Batch 1), 1st – 4th February, 20204 (Batch 2)

Venue: MSRCASC and Medauxin, Bengaluru

Participants: M.Sc. Biochemistry I and II-year students, MSRCASC

Objectives:

1. Improve students' proficiency in fundamental molecular biology techniques through practical, hands-on learning experiences.
2. Provide exposure to real-world applications in the industry.
3. Equip students with the skills necessary for engaging in research activities.

Details:

The Department of Chemistry & Biochemistry organized a four-day Value-Added Program (VAP) on "Hands-on Training on Basic Molecular Biology Techniques: Enhancing Research Skills." Students engaged in hands-on activities to enhance their skills and understanding of various molecular biology techniques. The VAP aimed to equip M.Sc. Biochemistry students of I & III semesters with the necessary knowledge for research endeavors and industry-ready jobs. The program, held in collaboration with Medauxin, underscored a hands-on and practical approach to acquiring vital molecular biology techniques, coupled with industry exposure.

Day 1:

The reporting time at Medauxin was 9:30 am, the students gathered at the college by 8:45 am and proceeded to Medauxin. Upon arrival, there was a brief introduction about Medauxin and the services provided, by the Director Mr. Ajay Babu Nekkanti. The trainers for the program, Ms. Kavya Lakshmikanth, a molecular biologist, and Mrs. Vidhya Gurikar, a

senior molecular biologist at Medauxin, were introduced. The participants were divided into two batches under the trainers.

Good laboratory practices (GLP) were explained in detail, including one-way entry to the lab and the proper usage and disposal of gloves. The storage of samples and the laboratory setup were also discussed. Before starting the experiments, the usage of all instruments was explained thoroughly. Gel preparation and the role of reagents used in gel electrophoresis, such as loading dye and EtBr, were detailed. The instrumentation of PCR and setting up the PCR reaction for the bacterial 16s gene were also explained.

The experiment began with buffer preparation, specifically 50X TAE buffer and CTAB buffer, by the two batches. The afternoon session included the DNA extraction from a bacterial culture containing the 16s gene. The use of the Bio Safety Cabinet and the precautions necessary while handling it were explained.

Pipetting skills were tested, and guidance was provided during the DNA extraction steps. Finally, the DNA was precipitated and stored at -20°C to run gel electrophoresis the next day. A question-and-answer session concluded the day, and the group left Medauxin at 6:30 pm, returning to the college.

Day 2:

On the second day, the laboratory was reached at 9:30 am. Upon entering, strict adherence to Good Laboratory Practices (GLP) was maintained. Ms. Kavya conducted a session covering 11 conceptual calculations, including 50X TAE buffer, CTAB, chloroform isoamyl alcohol preparation, and normality problems. Knowledge was imparted regarding different bands of PCR, distinguishing between sheared, intact, and high-concentration bands. Building on the previous day's DNA extraction session, principles and procedures of Polymerase Chain Reaction (PCR) were explored.

Understanding the components of PCR, such as template DNA, forward and reverse primers, and emerald buffer, was emphasized, along with their function in PCR. Details on programming PCR, from setup to execution, were provided. Insights were gained into the preparation and role of loading dye, as well as the types of primers used in PCR. Ms. Vidya guided everyone individually in performing the PCR reaction.

Further theory covered the aspects like PCR melting temperature gradient steps, primer dilution, and the protocol for gel purification, slated for the next session on Day 3. The day concluded with departure from the lab at 6:30 pm, heading back to college.

Day 3:

On the final day at Medauxin, the lab was reached on time. Upon arrival, Ms. Kavya reviewed the work and topics covered in the previous days. She provided insights into industrial applications and issues faced with customer samples and shared information about research fields that could be pursued after graduation. Several questions were asked and answered accordingly.

After this session, the group returned to the extraction room to begin gel extraction. The gel was purified and the samples were loaded onto the gel for analysis under the guidance of facilitators. Following this, primer-designing using the Primer-Blast tool was learned, along with watching a few YouTube videos on molecular biology techniques. The group was taught how to analyze gel images based on the type of band formed, learned about multiple band formation under certain circumstances, and methods of troubleshooting.

At the end of the program, feedback forms regarding the VAP from Medauxin were handed out, filled in, and submitted. The training concluded in the evening, and everyone headed back to the college.

Day 4:

On the fourth day, the session at MSRCASC facilitated an interactive discussion where students actively participated in discussions about our comprehensive training program, the latest advancements in molecular biology techniques, and the diverse career opportunities available in the field. Insightful questions from students fostered a dynamic exchange of ideas and knowledge.

Following the interactive session at MSRCASC, a valedictory function was organized to mark the culmination of the hands-on training program. The event was attended by the resource person from Medauxin, the principal of MSRCASC, the registrar, the vice principal, HoD of Biochemistry, and other faculty members.

During the function, the principal addressed the gathering, highlighting the significance of the hands-on training program and its impact on the students' learning journey. Certificates of participation were awarded to all student participants, recognizing their commitment and dedication throughout the program.

The valedictory session provided an opportunity for students and faculty to reflect on the knowledge gained and experiences shared during the hands-on training. It concluded on a celebratory note with a high tea, allowing participants to interact informally and discuss their future aspirations in the field of molecular biology.

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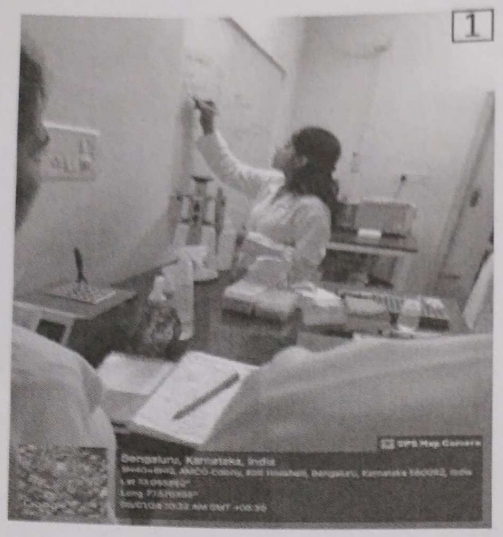

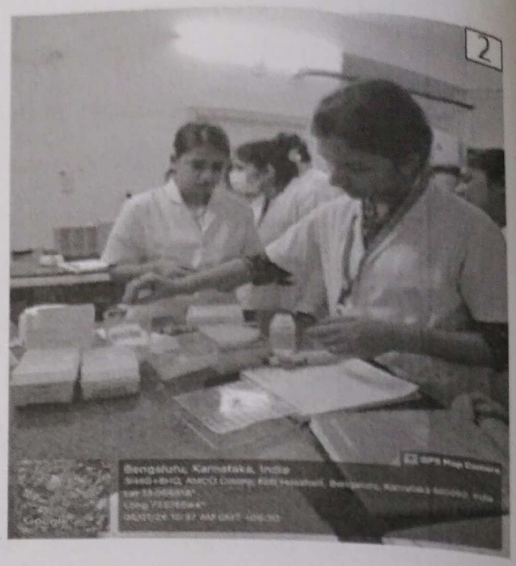

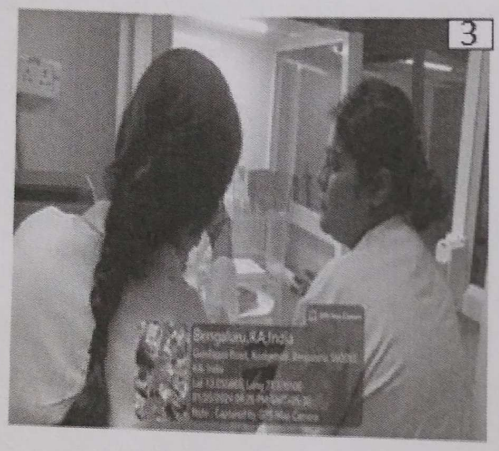

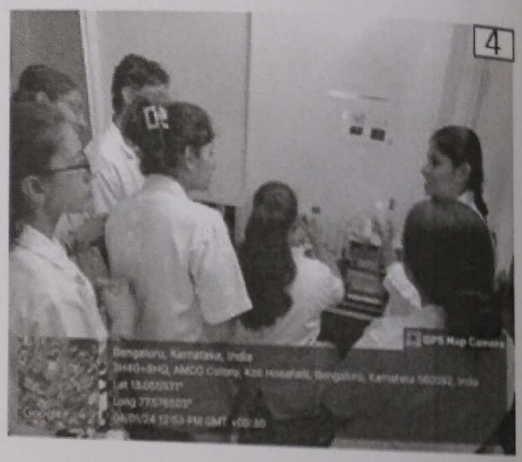

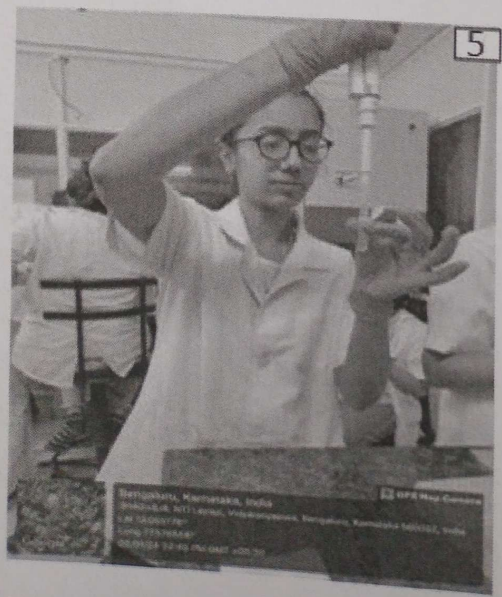

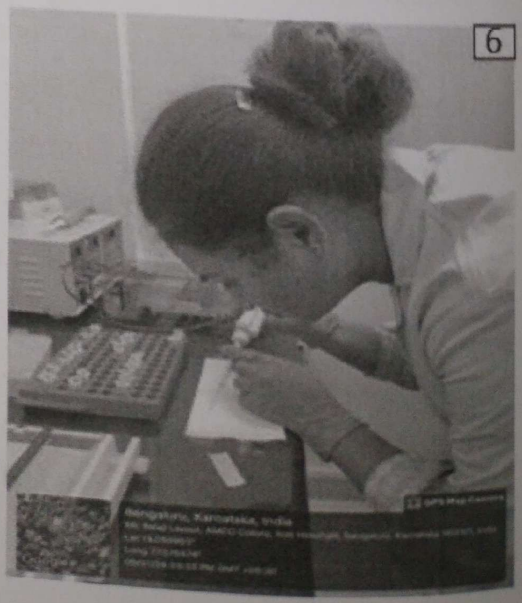

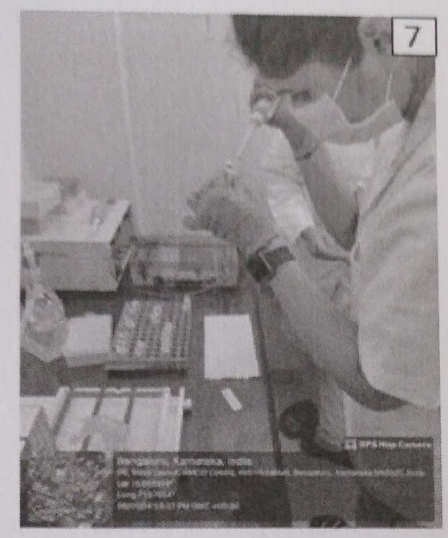

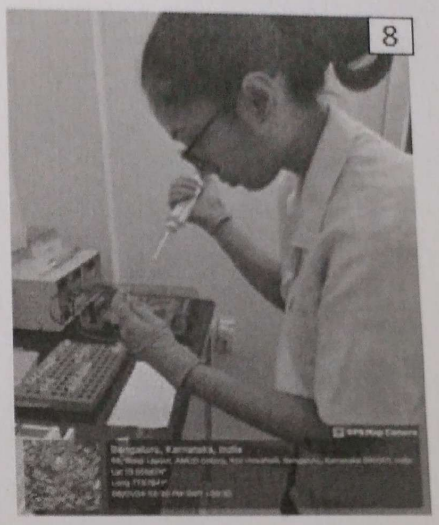

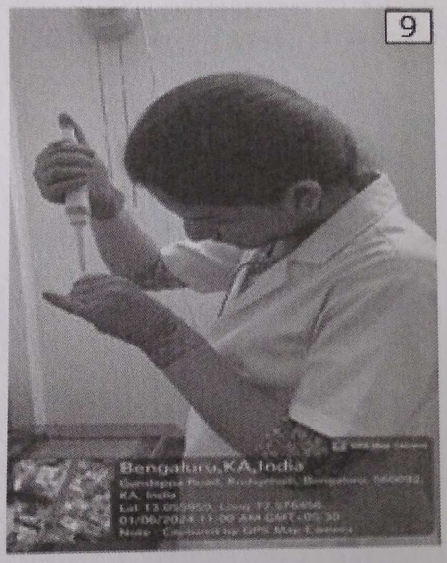

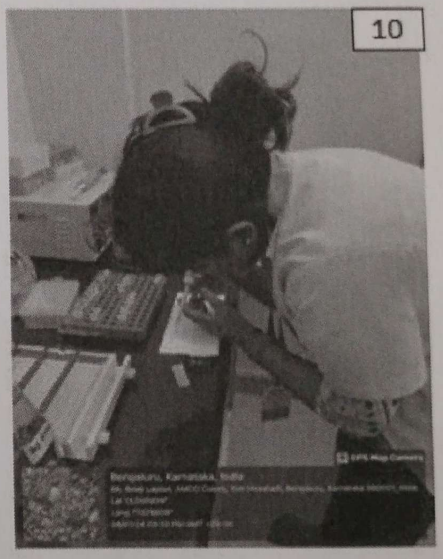

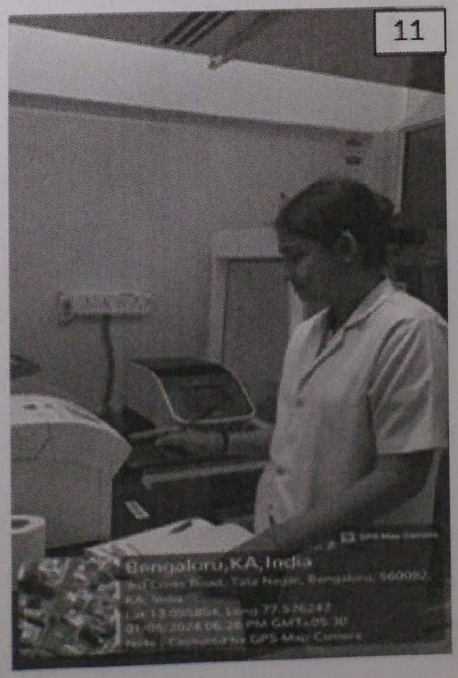

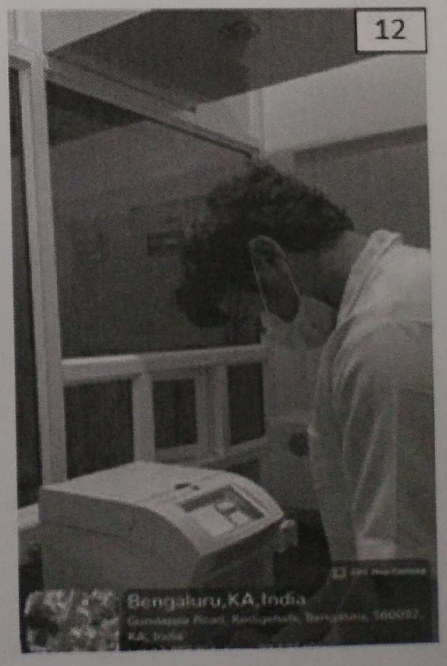

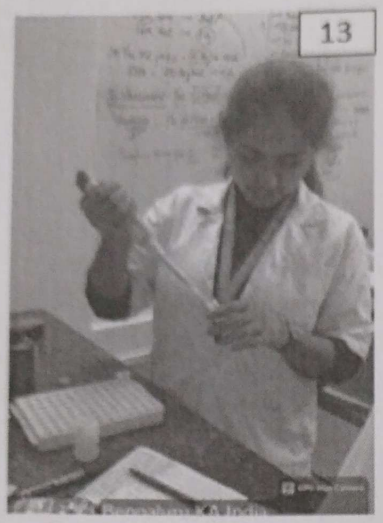

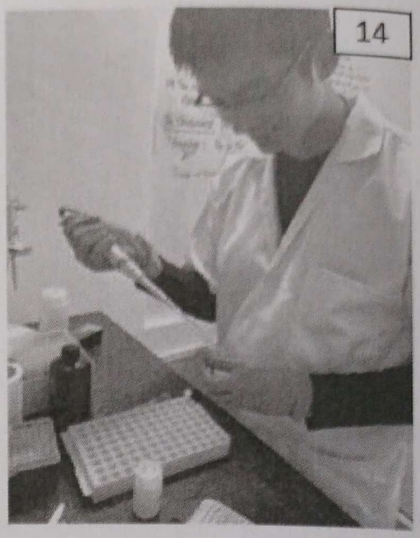

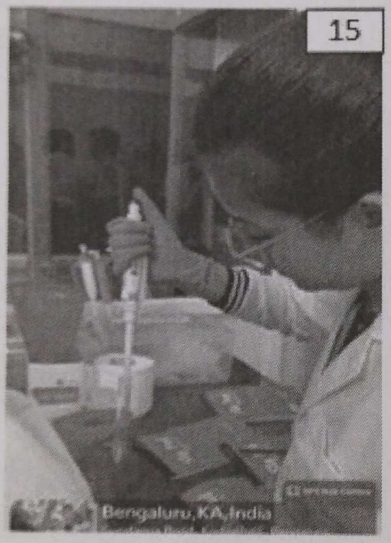

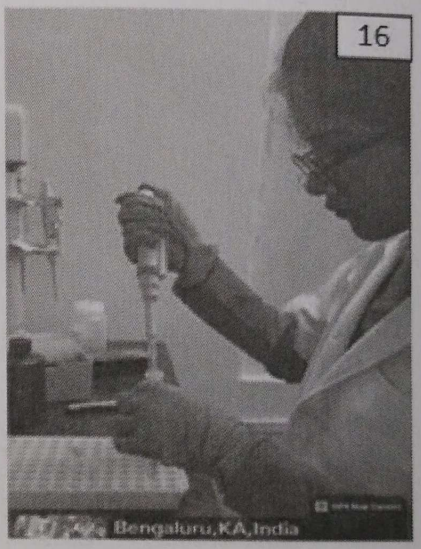

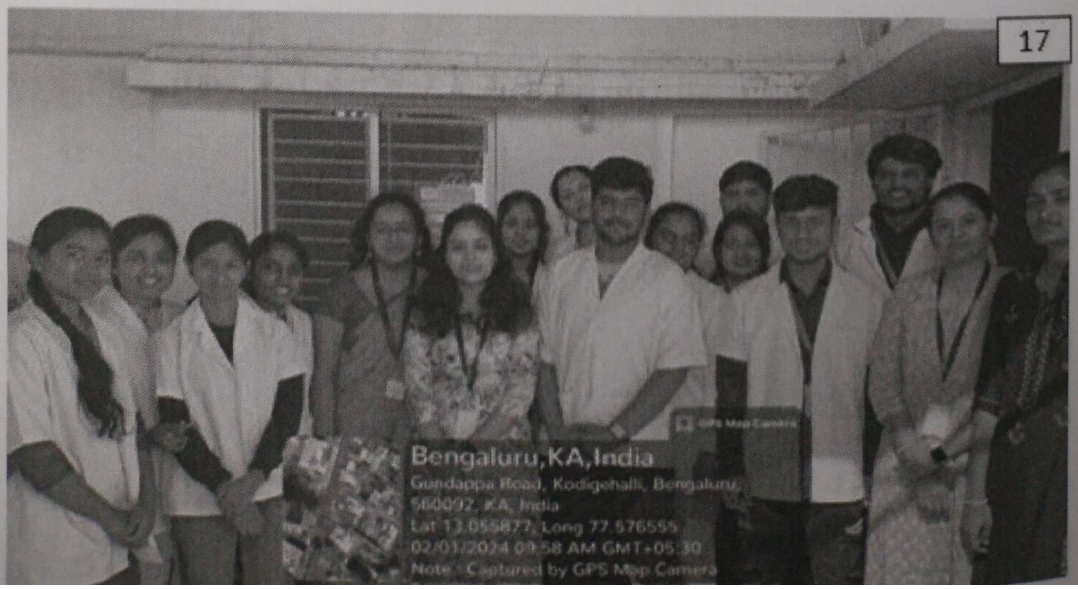

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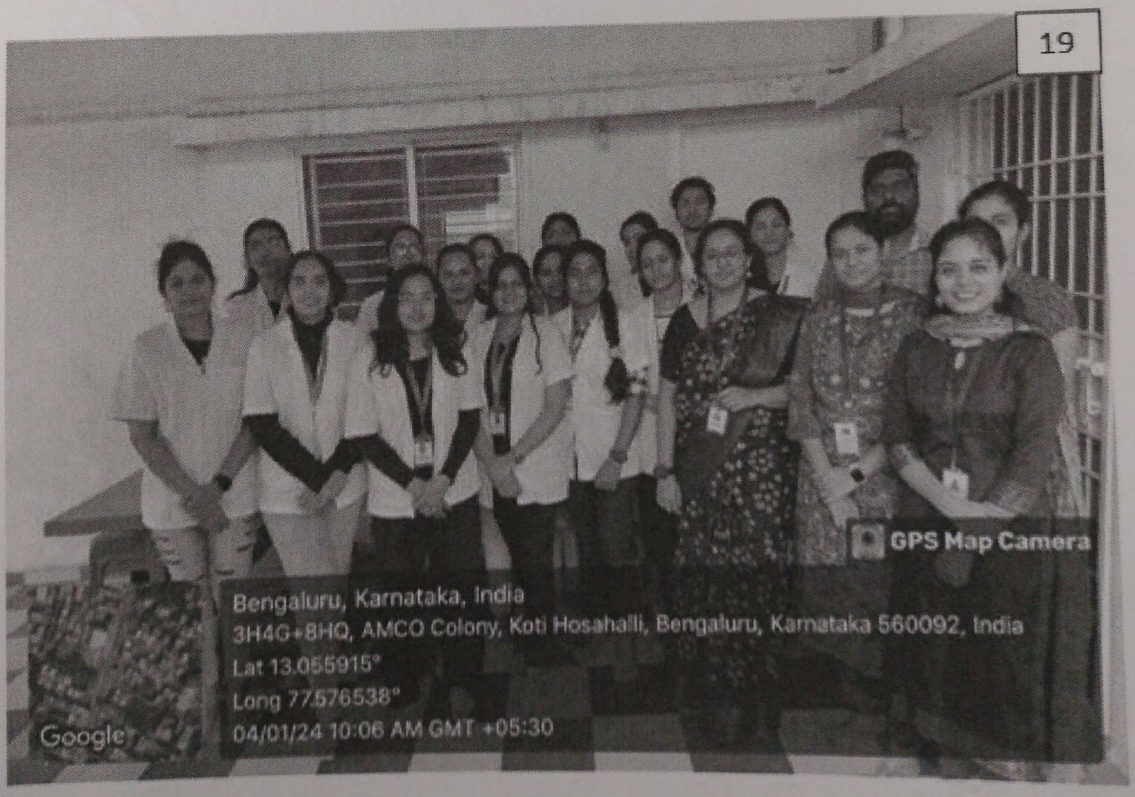
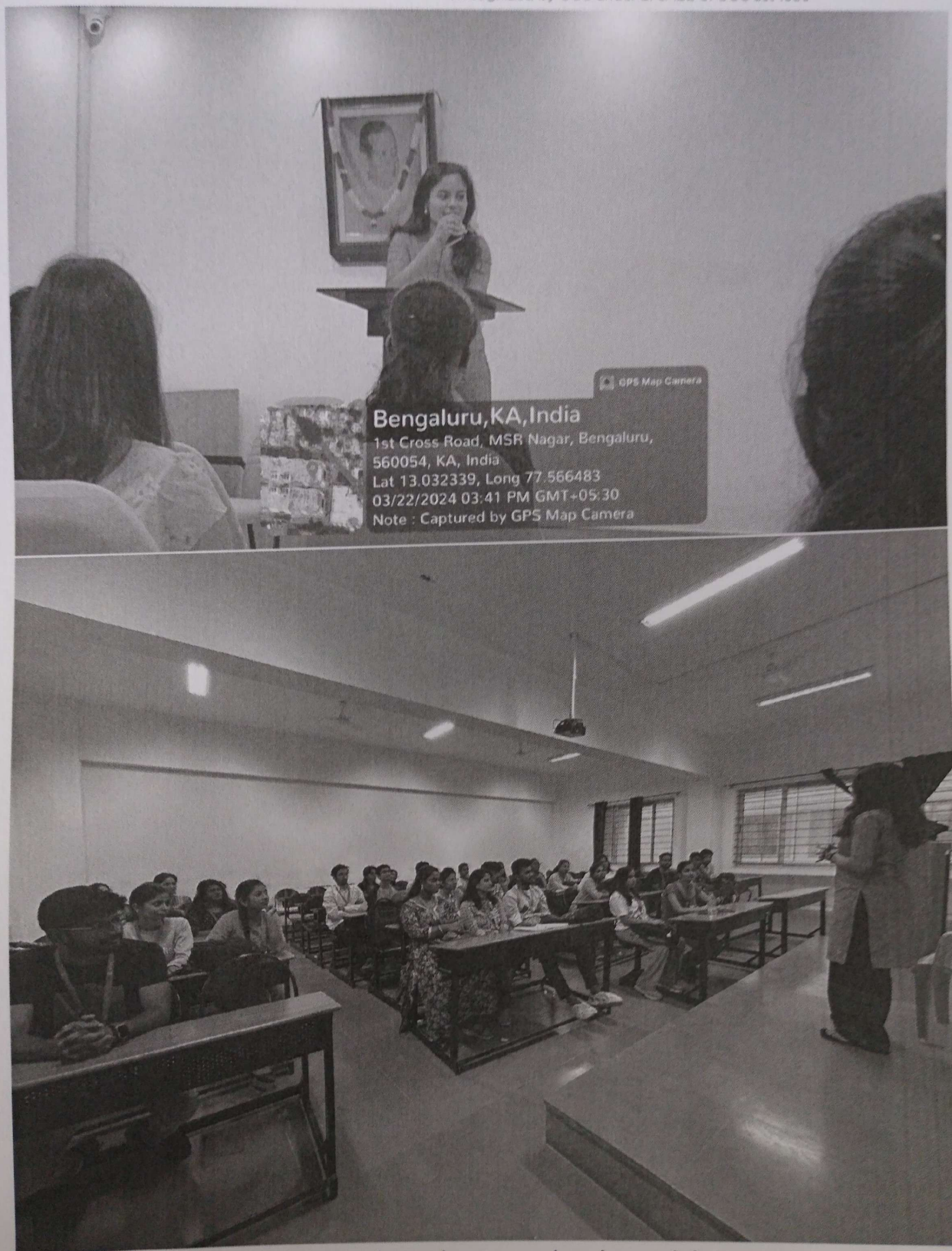


1. Ms. Kavya giving insights on buffer preparation
2. Students working on DNA extraction
3. Ms. Vidhya guiding a student in PCR sample preparation
4. Ms. Vidhya explaining sample loading in gel electrophoresis
5. A student extracting a DNA sample
6, 7, 8, 9, 10. Students working on sample loading in agarose gel electrophoresis
11, 12. Students working in the PCR room
13, 14. Students working on DNA precipitation
15, 16. Students loading DNA samples onto gel electrophoresis.
17,18. MSc Biochemistry I year students, faculty with the Medauxin team
19. MSc Biochemistry II year students and faculty with the Medauxin team.



Day 4: Engaging with students about the comprehensive training program, the newest advancements in molecular biology techniques, and potential career paths in the field

Valedictory function

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M.Sc. 2nd Year Biochemistry

Value-added program on "Hands-on training on Basic Molecular Biology Techniques: Enhancing Research Skills"

Jan 4th- 7th 2024

Sl. No.	Students Name	04-01-2024	05-01-2024	06-01-2024	07-01-2024
1.	Chandana A.				
2.	Dhamini C N.				
3.	Sireesha N.				
4.	Sulthan Pasha.				
5.	Keerthana K.				
6.	Vaishnavi N.				
7.	Sumithra V.				
8.	Sharvani Deshpande.				
9.	Amrutha Rangashree.				
10.	Yashaswini K S.				
11.	Sahana L J.				
12.	Payal V.				
13.	Sreelakshmi E V.				
14.	Durga Hyndavi Vakkalanka.				
15.	Monisha P.				

M.Sc. 1st Year Biochemistry

Value-added program on "Hands-on training on Basic Molecular Biology Techniques: Enhancing Research Skills"

Feb 1st -4th, 2024

Sl. No.	Students Name	01/02/2024	02/02/2024	03/04/2024	04/04/2024
1	Amrutha V.				
2	Reddaiah Rohith P.				
3	Logavarshini S.				
4	Varun N M.				
5	Vishwajeet U R.				
6	Sai Charan A.				
7	Aardra R S.				
8	Pooja T.				
9	Arya Anil Kumar				
10	Jyothika A.				
11	Joysri Dey				
12	Jalaja B S.	Jalaja.B.S	Jalaja.B.S	Jalaja.B.S	Jalaja.B.S
13	Syed Umar				
14	Sudeep S.				
15	Jayanth H.				
16	Anusha S.				
17	Bhumika S.				
18	Brundha H N.				
19	Sandhya J.				
20	Deekshitha G.				

21	Swathi R.				
22	Srujana Patel				
23	Manoj C R.				
24	Yukta S				
25	Ananya Choudhury				

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College of Arts, Science & Commerce

REF: MSRCASC/MB/2022-2023/0 Date: 08.08.2023

CIRCULAR

DEPARTMENT OF MICROBIOLOGY

Guest Lecture on:

"Why do we behave the way we do?: From the perspective of Neuroscience"

This is to inform all students of M. S. Ramaiah College of Arts, Science and Commerce that Department of Microbiology under DBT Star College Scheme in Association with IQAC is guest lecture on the topic **"Why do we behave the way we do?: From the perspective of Neuroscience" the speaker for the lecture is "Mr. Suchith C M,** Dept. of Biological Sciences, Tata Institute of Fundamental Research (TIFR), Mumbai and Alumini of MSRCASC

The guest lecture is a part of alumni contribution and will be conducted on 11th of August 2023.

Time: 10:30 am to 1.00pm

Venue: Dr. Abdul Kalam Auditorium

Head of the Department **Vice Principal** **Principal**

RAMAIAH
College of Arts, Science & Commerce

DEPARTMENT OF BIOTECHNOLOGY
MINISTRY OF SCIENCE & TECHNOLOGY GOVERNMENT OF INDIA

DEPARTMENT OF MICROBIOLOGY
in Association with IQAC & Alumni Association
organizes
GUEST LECTURE
on
"Why do we behave the way we do?: From the perspective of Neuroscience"

Speaker:
Mr. Suchith C M
Ph.D. Student
Dept. of Biological Sciences, Tata Institute of Fundamental Research (TIFR), Mumbai,
Alumini MSRCASC

Date: 11th August 2023
Venue: Dr. Abdul Kalam Auditorium
Time: 10:30am to 1:30 pm

Objective:

The primary objective of a guest lecture is to share knowledge, expertise, or insights on a topic.

And to provide valuable information to the audience, enhancing their understanding of the topic.

Outcome:

The lecture will encourage critical thinking and analytical skills among students and motivate students to explore research in future and pursue related interests.

Head of the Department
Dr. Soumya S Shanbhag

Vice Principal
Dr. Pushpa H

Principal
Dr. Vatsala G

Coordinator: Mrs. Soumya S Shanbhag, Assistant Professor, Dept. of Microbiology, MSRCASC

RAMAIAH
College of Arts, Science & Commerce

DEPARTMENT OF BIOTECHNOLOGY
MINISTRY OF SCIENCE & TECHNOLOGY, GOVERNMENT OF INDIA

DEPARTMENT OF MICROBIOLOGY

REPORT ON GUEST LECTURE/ ALUMNI CONTRIBUTION

Title: Guest Lecture/ Alumni Contribution

Topic: "Why do we behave the way we do?: From the perspective of Neuroscience"

Dates: 11th August 2023

Venue: Dr. A P J Abdul Kalam Auditorium

Participants: Undergraduate and Postgraduates Students of Biosciences

Resource Persons: Alumni of MSRCASC- Mr. Suchith C M

No. of Students: 250

Objective:

- The primary objective of a guest lecture is to share knowledge, expertise, or insights on a topic.
- This program aimed to provide current students with insights and experiences from a successful alumnus of the institution.
- To provide valuable information to the audience, enhancing their understanding of the topic.
- The talk was designed to inspire and motivate students by showcasing the achievements and journey of the speaker since their time at the institution.

The alumni speaker for the event was Mr. Suchith C M, an accomplished individual who graduated from department of life sciences, MSRCASC during the year 2016-19. He has since excelled in their field of Neuroscience, holding the position of Ph. D. student **Dept. of Biological Sciences, Tata Institute of Fundamental Research (TIFR), Mumbai.** The speaker's achievements and expertise added a sense of credibility and relevance to the talk.

The talk started at 11.00 am at Dr. A P J Abdul Kalam Auditorium, total of 250 students of Undergraduate and Postgraduate courses attended the program The alumni talk covered a range of topics, offering valuable insights to the audience. The speaker highlighted on few points which included his **Personal Journey** where he shared his personal journey, highlighting the

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challenges they faced during their time as a student and the strategies he used to overcome them. This part of the talk resonated with the students, as they could relate to the difficulties and uncertainties faced during their own academic journey. **Transition to Professional Life:** The speaker discussed how he navigated the transition from being a student to entering the professional world. He emphasized the importance of networking, seeking mentorship, and continuously learning to adapt to the ever-changing landscape of their industry. He also spoke about career trajectory, showcasing the various roles and responsibilities he undertook to reach his current position. He discussed the significance of setting clear goals, taking calculated risks, and seizing opportunities that aligned with their aspirations. He highlighted key lessons he learned along the way, such as the value of perseverance, the significance of failure as a learning opportunity, and the importance of maintaining a strong work-life balance.

He spoke on the study of Human behavior from the perspective of Neuroscience taking different simple examples of animal behavior study. He highlighted the study of different animal behavior which was used to study and corelate with the human behavior. The session was very interesting and thought provoking.

Interactive Session: Following the talk, there was an interactive session where students had the opportunity to ask questions. This session encouraged a meaningful exchange of ideas, allowing students to seek advice, clarify doubts, and gain deeper insights into specific aspects of the speaker's journey and industry.

Outcome of the Program:

The alumni talk was a resounding success, leaving a positive impact on the attendees. Students expressed their appreciation for the speaker's candidness, practical advice, and motivating story. The event served as a reminder that success is attainable with dedication, continuous learning, and a proactive approach to career development. It also reinforced the strong bond between the institution and its alumni, showcasing the potential for students to achieve great heights after their time at the institution

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Glimpse of the event

Introduction and welcome of the speaker

Talk on Why do we behave the way we do?: From the perspective of Neuroscience

Interactive session with speaker and photo session

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DEPARTMENT OF MICROBIOLOGY

11th of August 2023,

Guest Lecture on

"Why do we behave the way we do?: From the perspective of Neuroscience"

List of Participants

Sl. No.	Name of the Student	Registration Number	Class BSc Bt MD	Section	Signature	Rate the Program on scale of 1 to 5 (1-Poor, 2-Satisfactory, 3-Good, 4-Very good, 5-Excellent)
1.	Shreya JM	U18EV2150157	4th sem	B		5
2.	Sheetal K	U18EV2150210	4th sem	B	Sheetal	5
3.	Sanchita Singh	U18EV2150224	4th sem	B		5
4.	Shalini S	U18EV2150317	4th sem	B		5
5.	Sushma N	U18EV2150310	4th sem	B	Sushma N	5
6.	Roopashree G	U18EV2150327	4th sem	B		5
7.	Shravya MV	U18EV2150320	4th sem	B		5
8.	Queency Raina	U18EV2150294	4th sem	B		5
9.	S. Nachiketa	U18EV2150257	4th sem	B		5
10.	Shakti Kumar	U18EV2150150	4th sem	B		5
11.	Syed Nabeel	U18EV2150273	4th sem	B		5

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01.	Tanushree. R	23BSC035	I yr Bsc MB/BC	C	Tanushree.R	5
2.	Aishwarya. S.V		I BSc MB/BC	C		5
3.	Bidhisa Das	23BSC028	I Bsc MB/BC	C	Bidhisa Das	5
4.	Prinstal Miranda		I BSc BT/MB	B	Prinstal	4
5.	Shriya Gejjehalli	23BSC008	I yr Bsc MB/BC	C		5
6.	Vaishnavi Ganapati Hegde	23BSC067	I BSc MB/BC	C	vaishnavi	5
7.	KOKILA.G	23BSC068	I BSC GEN/BS	C		4
8.	BHANUSHREE HR	23BSC088	I BSC MB/BC	C		5
9.	Priya. N	23BSC069	I BSc GN/BC	C	Priya.N	5
10.	S. Haresh Balaji		I BSc MB/BC	C	Haresh	5
11.	Vasuki BV	23BSC032	IBSc BT/Chem	B	Vasuki	5

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1	Megholina Saha	23BSc020	BSc. BT/MB	A		4
2.	Avantika Roy	23BSc061	BSc-BT/MB	A		4
3	Anakshi Das	23BSc089	BSc-Gen/MB	C		4
4	Rakesh. S	U18EV22S0364	BSc-Gen/MB	C		5
5	Krishnapriya. M. M	U18EV22S0100	BSC-GEN/MB	C		5
6.	Alaina Khan	U18EV21S0222	BSc-BT/MB	A		5
7.	Aathira. Sunil	U18EV21S0221	BSC-BT/MB	A		4
8.	Ranjtha	U18EV21S0163	BSC-BT/MB	B		4
9.	AFRAN PASHA	U18EV21S0260	Bsc-BT/MB	A		4
10.	Muktha Shree K.R	U18EV21S0334	Bsc-BT/MB	A		3
11.	Gaurav Singh.R	U18EV21S0286	BSC-BT/MB	A		5
12.	Karthik. U	U18EV21S0263	BSc-BT/MB	A		3
13.	Kavya.M	U18EV21S0139	BSc-BT/MB	A		4
14.	Ananya. G	U18EV21S0306	BSc-BT/MB	A		3

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1.	B. JANANI	U18EV22S0150	BSc (2SEM) BT/MB	"A"	B. Janani	4
2	RAVOORU. VEDAKSHARI	U18EV22S0209	BSC (2SEM) BT/MB	A	R. Vedakshari	4
3	B. GITA ANJALI	U18EV22S0160	BSC (2SEM) BT/MB	A		5
4.	S. ABINEHA	U18EV22S0260	BSc (2SEM) BT/MB	A	S. Abineha	4
5.	SAMAN TAHNIET	U18EV22S0351	BSc (2 SEM) BT/MB	'A'		4
6.	CHANDNI GUPTA	U18EV22S0389	BSc BT/MB (2Sem)	A		5
7	Khizar Hussain	U18EV22S0382	BSC BT/MB	A		5
8.	Abhijit Banerjee	U18EV22S0270	B.Sc (2nd Sem)	A		5
9.	Charan Kumar. R.	U18EV22S0397	BSC (2Sem) BT/MB	'A'		4
10	DAISY DOMINIC	U18EV22S0153	BSC (2Sem) BT/MB	A		5

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1	Musfira Ayman (BT|Chem)	–	BT|Chem	B		4
2	Chinmaye	–	BT|Chem	B		5
3	Vidya Nikkam	–	BT|Chem	B	Vidya	4
4.	Umme Sareya.	–	MB/CHEM	B		5
5.	Sandhya. L	–	BT/Chem	B	Sandhya. L	4
6	G.T. Rishitha	–	BT/Chem	B		4
7.	Yashaswini UM	–	BT/Chem	B	Yashaswini	5
8.	J. Channabasava.	–	BT/MB	A		5
9.	Hemanth. G.M	–	BT/MB	A	Hemanth. G.M	5
10.	A. Abhishek	–	BT/MB	A		5
11.	Devika. K.	–	BT/MB.	A		5

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1	Arjun · P	P18EV22612016	Msc - 1st (2nd Sem)	Microbio-logy	Arjun	3.
2	Ashwanth · N·V	P18EV22512019	Msc - 2 Sem	M·B	Ashwanth.	4
3	Anja · Anil	P18EV22612024	Msc - 2sem	M·B		4
4	Nikitha · M·D	P18EV22512018	Msc - 2sem	M·B		4
5	Vinay · S	P18EV22512020	Msc - 2sem	M·B		4
6	Rakshitha · M	P18EV22512013	Msc - 2sem	M·B	Rakshu	4
7	Thrishitha · H·R	P18EV22612031	Msc · 2sem	M·B		4
8	Abdul	P18EV22612020	Msc - 2sem	MB		4
9	Divyashree · B	P18EV22512011	MSc - 2Sem	MB		5
10	Srishti · B	P18EV22512015	MSc - 2Sem	MB		5
11)	N. Varsha	P18EV22512027	M.Sc - 2Sem	MB		5
12)	Prathima · C	P18EV22512010	M.Sc - 2Sem	MB		4
13).	Madhu	P18EV22512025	MSc - 2 Sem	MB		5

Voted at 4

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1	NEHA KIRAN	U18EV22S0228	MB/BT BSc - II SEM	B	Neha K	5
2	NANDANA G	U18EV22S0003	BSc - II SEM	B	Nandana G	5
3	SINCHANA K	U18EV22S0152	BSc - II SEM	B	Sinchana K	5
4	SWAPNA SAHOO	U18EV22S0294	BSc - II SEM	B	Swapna	5 → INFORMATIVE & FUN!

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1.	G SAHITHI	23BSC025	BSC BT/MB	A		4
2.	N. SUMANTH		B.SC BT/MB	A		5
3.	B. SAI THRISHA		B.SC BT/MB	A		5
4.	Harshith M		BSC BT/MB	A		4
5.	Aishwarya KS		BSC BT/MB	A		4
6.	Karthick		BSC BT/MB	A		5
7.	Navyathashree		BSC BT/MB	A		5
8.	Pallavi. M	P18EV22022	IMSC MB	A		5
9.	Ipshikha Joarder	P18EV22021	IMSc. MB	A		
10	HIBA HANNA	P18EV22026	IMSC. MB	A		5
11.	PREETHI.R	P18EV22S132028	IMSc. MB			5
12	Shani Menin Varghese	P18EV22S132014	IMSC MB			4

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01	AJAY KUMAR B.S	P18EV22S132001	MSc (MB)	MB		5
02.	Manjunath Rao. A	P18EV22S13200	MSC (MB)	MB		5
03.	P. Pallavi		BSc (MB/GEN)	Sec-C		5
4.	Mohitha Suchma Sri. K	23BSC023.	BSc (GEN/BC)	Sec-C		5
05	Gautham Kumar Gupta		BSc (MB/BC)	Sec C		4
06	Shreegouri. S. Dongre	P18EV22S132005	I MSc Mb.	MB		4
07.	Shruthi. A-S	P18EV22S132004	I st M.SC	MB		4
08.	Priya. M. K	P18EV22S132008	I st MSC	MB		5
09.	Maithri. D. B	P18EV22S132009	I MSc Mb	MB		5
10.	SUMALATHA. L	P18EV22S132008	I MSc [MB]	MB		4
11.	NITHYA. V. P	P18EV22S132030	I MSc MB	MB		4
12.	Shamitha. Shetty. P	P18EV22S132023	I MSC (MB)	MB		4

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1.	LISHA. S	-	MB/BT	A	Lisha S	4
2.	KEERTHI. S.V	-	MB/BT	A	Keerthi SV	3
3.	MAHATHVINI. G.A	-	MB/BT	A	Mahathvini GA	4
4.	Sanjana. L	-	MB/GEN	C	Sanjana. L	4
5.	Anulya. J. B	-	MB/BT	A	Anulya. JB	5
6	AMRUTHAVARSHINI. S	-	MB/BT	A	Amruthavarshini S	5
7	M.S. Sreevalli	-	MB/BT	A	Sreevalli	5
8	Harshitha. R	-	MB/BT	A	Harshitha	
9	B. Srivani	-	MB/BT	A	Srivani	
10	TANUSRI. K.H	-	Msc. MB		Tanusri. K.H	5
11.	B. SANGEETHA	-	MSc MB		B. Sangeetha	5
12.	PRIYANKA. H	-	Msc. MB			

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1.	Sharanya. C. Dalawai	U18EV22S0301	BSc BT/MB	B		4
2.	V. Archana	U18EV20S0172	BSc BT/MB	B		4
3	Spoorthi. P	U18EV21S0205	IV sem BSc BT/MB	B		3
4.	Niharika. T	U18EV21S0328	IV sem II	B		4
5.	Meghana Kondaraju	U18EV21S0271	IV sem II	B		5
6.	D.V. Pujitha	U18EV21S0335	IV sem II	B		5
7.	Shailaja Anamda Kerur		I sem Bsc Gen/MB	C		5
8.	C. Thanuja		I sem BSc Gen/MB	C		5
9.	Arthi. S		I sem BSc MB/BC	C		4
10	Anagha Pravin		I sem Bsc Gen/MB	C		4

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1	Lakarika V.	U18EV22S0314	II BT/MB SEM	A	Lakarika	4
2.	Ananya. S	U18EV22S0298	II BT/MB Sem	A	Ananya	5
3.	Priyadarshini. M	U18EV22S0144	II nd sem BT/MB	A		5
4.	Deekshitha. M.S	U18EV22S0230	II nd sem BT/MB	A		5
5.	H.M. Soorna Chandra		I st sem MB/BC	C	Soorna	4
6.	Arkaprabha Deb		I st sem MB/Gen	C	Arkaprabha Deb	5
7	K. Surya Srika		I st Sem Gen/BC	C	K Surya Srika	5
8	Bhushan. B		I st Sem Gen/MB	C		4
9	Sufyan Ahmed K		I st Sem Gen/MB	C	Sufyan	5
10	Sonjit Bain		I st Sem MB/BC	C		5

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1	Laharika V.	U18EV22S0314	II Sem BT/MB	A	Laharika V.	4
2.	Ananya. S	U18EV22S0298	II Sem BT/MB	A	Ananya S	5
3.	Priyadarshini. M	U18EV22S0144	II nd sem BT/MB	A	Priyadarshini M	5
4.	Deekshitha. M.S	U18EV22S0230	II nd sem BT/MB	A	Deekshitha M.S	5
5.	H.M. Poorna Chandra		I st sem MB/BC	C	Poorna	4
6.	Arkaprabha Deb		I st sem MB/Gen	C	Arkaprabha Deb	5
7	K. Surya Srika		I st Sem Genl BC	C	K Surya Srika	5
8	Bhushan. B		I st Sem Gen/MB	C	Bhushan	5
9	Sufyan Ahmed K		I st Sem Gen/MB	C	Sufyan	4
10	Sonjit Bain		I st Sem MB/BC	C	Sonjit	

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1.	Farseen Ahamed	–	BSC BT/MB	A		5
2.	Abhigyan Boruah	BSC011	BSC BT/MB	A	A. Boruah	5
3.	Amal krishna. C		Bsc. MB/BT	A		5
4.	Anjum. S. Kumar	23BSC021	Bsc BT/MB	A	Anjum S Kumar	5
5.	ARDHENDU SENGUPTA	23BSC053	BSC .BT/MB	A		4
6.	ARYA. K	23BSC033	BSc. BT/MB	A		5
7.	Aishwarya. V. S	23BSC040	BSC. BT/MB	A	Aishwarya V	5
8	CHETHANA. P		Bsc. BT/MB	A.	Chethana. P	5
9.	AVANI ANIL	23 BSC 031	BSC. BT/MB	A.		5
10.	Navyatha shree	-	BSC. BT/MB	A.		5
11.	K S. Aishwarya.	-	BSC. BT/MB	A.		5

Vasad.G
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1.	Prakruthi. R		1st Sem CBT-MB	'B'	Prakruthi.R	5
2.	Varsha. M		1st Sem (BT-MB)	'B'	Varsha. M	5
3.	Sanjana Satish		1st Sem (BT-MB)	'B'	Sanjana Satish	5
4.	Sayani Barua		1st Sem(BT-MB)	'B'	Sayani Barua	5
5.	Ridhika jamwal		1st Sem (BT-MB)	'B'	Ridhika jamwal	4
6.	Hiba Zahaseen		1st Sem BT/MB	A		4
7	Afija Fatima Amjad		1st Sem BT/MB	A		4
8.	Beenish Javied		1st sem BT/MB	A	Beenish	4
9.	Nandini. A		1st Sem(Gen/BC)	C		
10	Tejashree. S		1st Sem(Gen/BC)	C		5
11.	Devika. V		1st sem (Gen/BC)	C		5
12.	Keerthana. I.S		1st Sem (BT/MB)	A		4
13.	Indhuja. U		1st sem (Gen/BC)	C	Indhuja. U	4

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DEPARTMENT OF BIOTECHNOLOGY
MINISTRY OF SCIENCE & TECHNOLOGY, GOVERNMENT OF INDIA

DEPARTMENT OF MICROBIOLOGY

11th of August 2023,

Guest Lecture on

"Why do we behave the way we do?: From the perspective of Neuroscience"

List of Participants

Sl. No.	Name of the Student	Registration Number	Class	Section	Signature	Rate the Program on scale of 1 to 5 (1-Poor, 2-Satisfactory, 3-Good, 4-Very good, 5-Excellent)
01	KOMALA .G.E	U18EV23S0037	I st Sem BT/MB	'A'		4 - Very Good.
02	K.P. Pavani		I st Sem BT/MB	'A'		4 - Very Good.
03	Vijayashree. R		1st sem BT/chem	'B'		5 - Excellent!
04.	Priyanka .S		1st sem BT/chem	'B'	Priyanka	5- Excellent!

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1	Priyanka v dhargi	U18EV22S0354	BSC II sem	B		4
2	Trishala Chakraborty	U18EV22S0284	BSC II sem	B		5
3.	Ashima Bedamatta	U18EV2280343	BSc II Sem	B		5
4.	Shivam sharma	U18EV2280312	BSc II Sem	B		5
5.	Tejaswee Brahma	U18EV2280214	BSc II Sem	B		5
6.	J. Shiny Roberta	U18EV22S0337	BSc II sem	A		5
7.	Harsha . D	U18EV22S0168	BSC II Sem	A		4
8.	Niharika . SN	U18EV22S0167	BSC II Sem	A		5
9.	Lakshmisravya. padidam	U18EV22S0282	BSc II sem	A		5
10.	Namrista Sinha	U18EV22S0165	BSc II nd sem	A		5

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1	Semiya Soni	23BSC029	BT/MB 1st year BSc	B	Semiya	4
2	Radhika Modi	23BSC078	BT/Chem 1st Sem BSc	B	Radhika	4
3	Uttara Chakraborty	~~23BSC006~~	BT/MB 1st Sem BSc	B	Uttara	4
4	Laxmi Sharma	23BSC003	BT/MB 1st Sem BSc	A	Laxmi	4
5	Kasak Sharma.		BT/MB 1st Sem BSc	A	Kasak	4
6	ARIJEET KUMAR		BT/MB 1st Sem BSc	A	Arijeet Kumar	3
7	ALEIN B. GEORGE		BT/MB 1st Sem BSc	A	Alein B George	4
8	YUVIKA SARIN	23BSC052	BT/MB 1st Sem BSc	C	Yuvika	4
9	AGNISHWAR DAS	23BSC038	BT/MB 1st Sem BSc	A	Agnishwar	4
10	SHRUTI SENGUPTA	23BSC090	BT/MB 1st Sem BSc	C	Shruti	3
11	Yamini.	23BSC057	BT/Chem 1st Sem BSc	B	Yamini.	5

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1.	Dadi Kiran .S	U18EV22S0316	BSc(BT/MB)	A		5
2	Ishwar K.M	U18EV22S0259	Bsc(BT/MB)	A		5
3.	Likitha.K.M		Bsc (Chem/MB)	B		5
4.	Spoorthy.P		BSc (BT/MB)	B		5
5.	Chandrika. R. K		BSc(MB/chem)	B		4
6.	Yashika Ranka		BSc (MB/chem)	B		4
7.	Piyusha Kumari		BSc(BT/MB)	B		5
8.	Ruchi Srivastava		BSc(BT/MB)	B		4
9.	Pavithra. S		BSc (BT/MB)	B.		5
10.	Neha. C.M		BSc (BT/MB)	B		4
11.	Riya. kumari		BSc (BT/MB)	B.		4
12.	Rithu lahari. S		BSc (BT/MB)	B.		4
13.	Monika. R		BSc (Gen/BC)	C		4

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14. Mohammed jeelan	(BSC) BT/MB	'B'	Mohammed
15. Prajwal Y.M	(BSC) BT/MB	'B'	Prajwal.
16. Shaik Sufiyan	(Bsc) BT/MB	'B'	Sufiyan
17. Deepthi. J.K	B.Sc MB/chem	'B'	Deepthi
18. Akshatha. K.M	B.Sc BT/chem	'B'	Akshata
19. Parinitha. G	B.Sc BT/CHEM	'B'	Parinitha
20. Yashwanth. P	B.Sc BT/CHEM	'B'	Yash
21. Thivaskar. M	B.Sc BT/CHEM	'B'	M. Ithi
22. Manimaran	B.Sc BT/CHEM	'B'	
23. Mohammed Khwaja Moin	B.Sc BT/CHEM	'B'	M.D Stan
24 Bhoomesh. KM	B.Sc MB/Chem	'B'	
25 Riddhi. C	BSC MB/BT	'B'	Riddhi
26. M. Rupesh	BSc BT/ chem	B	Rupesh

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(1)	K. Anuragh	U18EV22S0293	BSc BT/MB 2nd sem	B	K. A	5
(2)	Sneha. S		BSc BT/MB IIIrd sem	B	Sneha	4
(3)	Vibhashree M V	U18EV23S0057	Bsc Mb/Gt	C		5
(4)	Sayantanee Seal	P18EV21S0103	M.Sc – MB		S. Seal	5
(5).	Anysheunita Mahanta	P18EV21S0097	MSc - MB		Anusha	4
(6).	Medha Yadav	P18EV21S0130	MSC MB		Medha	Valuable 4
7)	Shivaprasana Bhat	P18EV21S0100	MSC MB		SB	
8)	Aneesh - M	P18EV21S0106	MSC MB		Aneesh	
9)	Megha. A		BSC BT/MB	A	Megha	5
10	Koushani Biswas		BSC BT/MB	A	Kous	5
(11)	Divyanshi Singh		Bsc BT/MB	A		5- Excellent !

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01	TEJASHWINI.R.S		Isem BSc - BT/MB	B	R.S. Tejash	4
02	Yashaswini.M		Isem BSc-BT/MB	B		5
03	Keerthana.S		Isem BSc-BT/Chem	B	Keerthana S	5
04.	Sandhya.S		Isem BSc BT/MB	B	Sandhya.S	5
05	Anitha		BSc BT/MB	A	Anitha	5
06	Seerat Aziz		BSc BT/MB	A	Seerat	5.
07	SNEHA VARADARAJ	U18EV21S00014	BSc MB/GEN	C		3.5
08	Shreya.K	U18EV21S00047	BSc (MB/BC)	C	Shreya	4
09	Abishek.S	U18EV21S00006	BSc (MB/BC)	C		4
10	S Sahead hussain	U18EV21S0219	BSc (MB/BT)	B		4.5
11	Varsha.ST	U18EV21S0299	BSc (MB/BT)	B		4.3
12.	Trupti	U18EV21S0280	BSc (MB/BT)	B	Trupti	4.25
13.	Suchitra.S	U18EV21S02	BSc (MB/BT)	B	Suchitra	4.0

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Re-accredited 'A' by NAAC, Permanently Affiliated to Bangalore Central University
Approved by Government of Karnataka, Approved by AICTE, New Delhi.
Recognized by UGC under 2f & 12B of UGC act 1956

REF: MSRCASC-A/WS/CIR/2024-25/40 **DATE:** 19-04-2024

CIRCULAR

DEPARTMENT OF BIOTECHNOLOGY AND GENETICS

This is to inform all the B.Sc. IV semester students that Department of Biotechnology and Genetics, M S Ramaiah College of Arts, Science and Commerce-Autonomous, Bengaluru is organizing a Skill based Hands on Training cum Workshop on "Fins to Findings: Zebrafish in Embryonic Development, Drug Discovery, Disease Modeling, and Regeneration" from APRIL 24th to MAY 3rd, 2024 in association with Vertex Research and Education, Bengaluru.

Certificates will be provided to all the registered participants at the end of the workshop.

Resource Person: **Dr. Gokul Kesavan**, Principal Scientist and the Founder-Proprietor of Vertex Research and Education, Bengaluru.

Venue & Time: **Genetics Lab (Level 5)**
10.30 – 1.30 PM

19/4/2024

HEAD OF THE DEPARTMENT

Vatsala. 20/04.

PRINCIPAL

Principal,
M.S. Ramaiah College of Arts, Science & Commerce
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M S Ramaiah College of Arts, Science and Commerce - Autonomous

Vertex Research & Education

DEPARTMENT OF BIOTECHNOLOGY AND GENETICS ORGANIZES

Skill Based Hands on training cum Workshop on

Fins and Findings: Zebrafish in Embryonic Development, Drug Discovery, Modeling and Regeneration

Resource Person

Dr Gokul Kesavan, Scientist & Founder Proprietor

Vertex Research and Education

24th April to 03rd May, 2024

Venue : Genetics Lab, Level 5

PATRONS

Dr. M.R. Jayaram, Chairman, GET
Sri M.R. Janakiram, Director, GET
Sri M.R. Kondandaram, Director, GET
Sri B.S. Ramaprasad, CE, GET
Sri G. Ramachandra, COT, GET
Dr. Vatsala C, Principal, MSRCASC
Dr. Anandappa Tramukhadavar, Registrar (Academics)
Prof. Suresh J, Deputy Registrar, Admin & Evaluation
Prof. Jayarama B S, Vice Principal
Prof. Puspha N, Vice Principal

ORGANIZING COMMITTEE

Dr. Lakshmikanth R N, Associate Prof & Head (PG)
Dr. Channarayappa, Professor
Dr. Ramesha N, Professor
Dr. D.R. Jayashree, Professor
Dr. Ramakrishnaiah T N, Assistant Professor
Dr. Soubhagya R., Assistant Professor
Dr. Radha Dayanidhi, Assistant Professor, Head (UG)
Ms.Beaulah Angel, Assistant Professor
Dr. Pramod Prakash Desai, Assistant Professor
Dr. Pavithra Kumari H G, Assistant Professor
Dr. Muktha N, Assistant Professor
Dr. Satish Babu, Assistant Professor
Dr. Vijayalakshmi T N, Assistant Professor

About the Workshop

Zebrafish is pivotal in biomedical research as their genome is sequenced completely for easy manipulation. Their transparent embryos offer insights into embryonic development, aiding in the study of organogenesis. Genetically akin to humans, they're instrumental in disease modeling and drug discovery, shedding light on conditions like cancer and cardiovascular diseases. Zebrafish's remarkable regenerative abilities also make them invaluable in studying tissue repair mechanisms, holding promise for future therapeutic interventions. This workshop will delve into zebrafish's multifaceted roles, spanning embryonic development, drug discovery, disease modeling, and regeneration.

Outcome

Students will embark on a comprehensive journey through various facets of zebrafish research, gaining hands-on experience and essential practical skills crucial for developmental and disease studies. Theoretical knowledge will be complemented by insights into the underlying logic behind each experiment, enriching participants' understanding of this dynamic field.

Convenors

Dr. Geetika Pant, Assistant Professor
Dr. Vinutha M , Assistant Professor
Dr. Rashmi Nagesh, Assistant Professor

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Vertex

M S Ramaiah College of Arts, Science and Commerce -Autonomous

Department of Biotechnology and Genetics
In association with
Vertex Research and Education

Organizes

Skill based Hands on Training cum Workshop on

"Fins to Findings: Zebrafish in Embryonic Development, Drug Discovery, Disease Modeling, and Regeneration"

24th April to 3rd May, 2024

Venue : Genetics Lab, Level 5

About College

Dr. M S Ramaiah, a visionary and philanthropist established "Gokula Education Foundation (GEF)", in the year 1962, to deliver education and healthcare for the betterment of mankind. Under the tutelage of GEF, M S Ramaiah College of Arts, Science and Commerce (MSRCASC) was established in 1994. MSRCASC is Re-accredited with "A" Grade by NAAC, Permanently affiliated to Bengaluru City University (BCU), and approved by AICTE. It is also recognized under section 2(f) & 12(B) of the UGC Act 1956. It has produced several rank holders and has alumni in distinguished institutions all over the world. The College has a legacy of organizing workshops, international and national conferences in various disciplines of Science, Commerce and Management in addition to Quality Initiatives in Higher Education.

About Department

Department of Biotechnology and Genetics in the M S Ramaiah College of Arts, Science and Commerce, was established in the year 2000 offering both UG and PG programs. The main objective of the program is to provide conducive learning environment for the students and to mitigate the shortage of biotechnologists in the field of food, agriculture, medicine and environmental management. Highly qualified and experienced faculty members deliver the lectures and conduct the practical in various subjects of as per the curriculum developed by the Bangalore City University. The department focuses mainly on teaching the basics, applications and hands-on-training in a state-of-the-art classroom and laboratory environment. It also facilitates students to broaden their knowledge for multitasking opportunities by conducting various curricular and extracurricular activities.

Resource Person

Dr Gokul Kesavan

Principal Scientist and the Founder-Proprietor of Vertex Research and Education

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Resource Person: Dr. Gokul Kesavan, Founder and Proprietor
Vertex Research and Education

Program Schedule

Batch: 1 (B.Sc. IV sem A sec)
Date: **24.4.2024 (day1) – 25.4.2024 (day2)**
Time: **11.00- 13.45 (day1); 10:30 to 13:30 (day2)**
Batch size: 50 students
Day1: Genetics Lab (Level 5)

Module	Topic	Duration
Theory	Introduction to Zebrafish as a research model	11:00- 11:30
Practical	Observing developmental stages	11.30-12:00
Practical	Staining: Alcian blue Staining: Alizarin red	12:00- 13:00
Theory	Drug screening, disease modelling in zebrafish	13:00-13.20
Practical	Drug treatment (Ethanol and VitD3)	13:20- 13: 45

Day2: Genetics Lab (Level 5)

Module	Topic	Duration
Theory	Regeneration in Zebrafish Gene Manipulation (transgenics, knock out and knock ins)	10:30- 11:00
Practical	Observing developmental stages; drug treated embryos	11:00- 11:30
Practical	Staining: Alcian blue Staining: Alizarin red	11:30- 12:30
Practical	Imaging and image analysis	12:30-13.15
Theory	Doubt clearing; Q & A	13:15- 13: 30

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Batch: 2 (B.Sc. IV sem B sec)
Date: **27.4.2024 (day1) – 29.4.2024 (day2)**
Time: **10.30- 13.30**
Batch size: 50 students

Day 3: Genetics Lab (Level 5)

Module	Topic	Duration
Theory	Introduction to Zebrafish as a research model	10:30- 11:00
Practical	Observing developmental stages	11:00-11:30
Practical	Staining: Alcian blue Staining: Alizarin red	11:30- 12:30
Theory	Drug screening, disease modelling in zebrafish	12:30-12.50
Practical	Drug treatment (Ethanol and VitD3)	12:50- 13: 30

Day 4: Genetics Lab (Level 5)

Module	Topic	Duration
Theory	Regeneration in Zebrafish Gene Manipulation (transgenics, knock out and knock ins)	10:30- 11:00
Practical	Observing developmental stages; drug treated embryos	11:00- 11:30
Practical	Staining: Alcian blue Staining: Alizarin red	11:30- 12:30
Practical	Imaging and image analysis	12:30-13.15
Theory	Doubt clearing; Q & A	13:15- 13: 30

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Vertex

Batch: 3 (B.Sc. IV sem C sec)
Date: **30.4.2024 (day1) – 02.5.2024 (day2)**
Time: **10.30- 13.30**
Batch size: 50 students
Day 5: Genetics Lab (Level 5)

Module	Topic	Duration
Theory	Introduction to Zebrafish as a research model	10:30- 11:00
Practical	Observing developmental stages	11:00-11:30
Practical	Staining: Alcian blue Staining: Alizarin red	11:30- 12:30
Theory	Drug screening, disease modelling in zebrafish	12:30-12.50
Practical	Drug treatment (EtoH and VitD3)	12:50- 13: 30

Day 6: Genetics Lab (Level 5)

Module	Topic	Duration
Theory	Regeneration in Zebrafish Gene Manipulation (transgenics, knock out and knock ins)	10:30- 11:00
Practical	Observing developmental stages; drug treated embryos	11:00- 11:30
Practical	Staining: Alcian blue Staining: Alizarin red	11:30- 12:30
Practical	Imaging and image analysis	12:30-13.15
Theory	Doubt clearing; Q & A	13:15- 13: 30

Day 7: Valedictory Session (3rd May 2024 -10.30 onwards) - Auditorium

Welcome Address	**Dr Radha Dayanidhi, HOD (UG)**	**10.35-10.45**
Presidential Remarks	Dr Vatsala G, Principal	10:45- 10.55
Introducing Resource Person and company	Dr Geetika Pant	10.55-11.00
MOU Exchange		
Resource Person	Dr. Gokul Kesavan	11:00- 11:30
Q & A session & distribution of certificates, Students Feedback		
Dr. Vinutha M.	Vote of Thanks	11:40-11.50

Summary of the Zebrafish Workshop

The Department of Biotechnology and Genetics at MSRCASC, in collaboration with Vertex Research and Education, hosted a skill-based, hands-on workshop on utilizing zebrafish as a model organism from April 24 to May 3, 2024. Dr. Gokul Kesavan, a renowned zebrafish researcher in genetics, led the workshop, showcasing the latest advancements in genetic engineering, drug discovery, developmental biology, and regeneration using zebrafish.

The laboratory sessions provided practical training in several key areas:

1. **Zebrafish Embryo Development**: Participants examined the dynamic progression of zebrafish embryos from zygote to larval stages, with a focus on accurate staging for experimental precision.
2. **Cartilage Structure Analysis**: The importance of Alcian Blue staining in investigating cartilage structures was highlighted, providing insights into skeletal development and abnormalities.
3. **Bone Development**: Alizarin red staining was used to understand bone development in various larval stages of zebrafish.
4. **Microscopy and Imaging**: Comprehensive training in microscopy, imaging, and analysis techniques.

The laboratory sessions were supported by Dr. Rashmi Nagesh, Dr. Vinutha M, and Dr. Geetika Pant from the Department of Biotechnology and Genetics at MSRCASC.

Dr. Kesavan patiently addressed various questions from participants, covering topics such as the role of animal models in medical research and the significance of understanding organ development for future therapies. His explanations were clear and accessible, encouraging students to actively engage and ask complex questions.

Overall, this informative three-day workshop introduced new instruments and techniques for visualizing samples, and the delicious lunch served was a delightful bonus. Students and scholars in the life sciences field are encouraged to attend and conduct such enriching sessions in the future

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Long 77.566553°
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Bengaluru,KA,India
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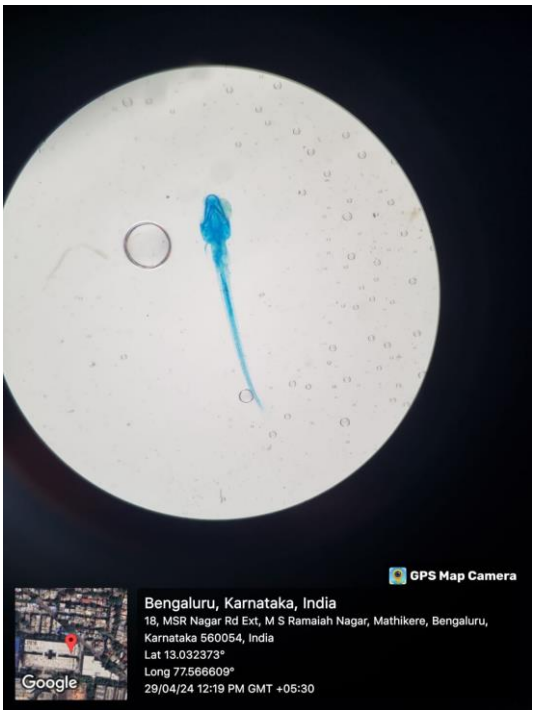
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Resource Person: Dr Gokul Kesavan,
Principal Scientist and the Founder-Proprietor,
Vertex Research and Education

Program Schedule

Sl. No.	Batch and Section	Day	Date and Day	Time	Student Strength	Venue
1.	BATCH 1 B.Sc. IV sem 'A' sec	Day 1	24.04.2024 (Wednesday)	11.00 am - 1.45 pm	45	Genetics Lab
		Day 2	25.04.2024 (Thursday)	10:30 am to 1:30 pm	45	Genetics Lab
2.	BATCH 2 B.Sc. IV sem 'B' sec	Day 3	27.04.2024 (Saturday)	10:30 am to 1:30 pm	57	Genetics Lab
		Day 4	29.04.2024 (Monday)	10:30 am to 1:30 pm	57	Genetics Lab
3.	BATCH 3 B.Sc. IV sem 'C' sec	Day 5	30.04.2024 (Tuesday)	10:30 am to 1:30 pm	48	Genetics Lab
		Day 6	02.05.2024 (Thursday)	10:30 am to 1:30 pm	48	Genetics Lab
4	Valedictory Session	Day 7	03.05.2024 (Friday)	10.30am onwards	150	Kuvempu / Mother Teresa Auditorium

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"Fins to Findings: Zebrafish in Embryonic Development, Drug Discovery, Disease Modeling, and Regeneration"

Resource Person: Dr. Gokul Kesavan, Founder and Proprietor
Vertex Research and Education

IV sem B.Sc 'A' Sec Student List 24.4.24

Sl. No.	Reg.No.	Name	Student Signature
1	U18EV22S0156	Aditi.S	
2	U18EV22S0217	Amruthapriya C	
3	U18EV22S0298	Ananya.S	
4	U18EV22S0155	Arnab Saha	
5	U18EV22S0162	Ashmith Asok	
6	U18EV22S0171	Ayushi jha	
7	U18EV22S0160	Gita Anjali. B	
8	U18EV22S0150	B Janani	
9	U18EV22S0125	Chandreyi Banerjee	
10	U18EV22S0153	Daisy Dominique	
11	U18EV22S0230	Deekshitha M S	
12	U18EV22S0252	Dheeraj Kumar gaud	
13	U18EV22S0259	Eshwar KM	
14	U18EV2250261	Hafsa H S	
15	U18EV22S0168	Hastha.D	
16	U18EV22S0337	J.Shiny Roberta	
17	U18EV22S0147	Janika N D	
18	U18EV22S0310	K.K.srividya	
19	U18EV22S0330	K Lalith Krishna	
20	U18EV22S0256	Kushi Bagrecha	
21	U18EV22S0314	Laharika Vusa	
22	U18EV22S0282	Padidam Lakshmi Sravya	
23	U18EV22S0208	Mohammed Zain	

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24	U18EV22S0165	Namisha Sinha	Namisha Sinha
25	U18EV22S0140	Nandu Krishna	
26	U18EV22S0167	Nihaarika SN	
27	U18EV22S0207	Nischal B Rudraswamy	
28	U18EV22S0144	Priyadarshini M	
29	U18EV22S0253	Rahul s	
30	U18EV22S0209	Ravooru. Vedakshari	
31	U18EV22S0135	Rekha Kumari lohar	
32	U18EV22S0164	Renusri Dandi	
33	U18EV22S0260	S.Abineha	
34	U18EV22S0170	Sahasramshu.A	
35	U18EV22S0351	Saman tahniet	
36	U18EV22S0145	Sangeetha V	
37	U18EV22S0300	Saptarshee Das	
38	U18EV22S0316	Sasi kiran.s	
39	U18EV22S0370	Debjit Banerjee	
40	U18EV22S0382	Mohammed Khizar Husaain	
41	U18EV22S0391	R Vaishnavi	
42	U18EV22S0389	Chandni Gupta	
43	U18EV22S0397	Charan Kumar R	

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Resource Person: Dr. Gokul Kesavan, Founder and Proprietor Vertex Research and Education

IV sem B.Sc 'A' Sec Student List : 25.4.24

Sl. No.	Reg.No.	Name	Student Signature
1	U18EV22S0156	Aditi.S	
2	U18EV22S0217	Amruthapriya C	
3	U18EV22S0298	Ananya.S	Ananya.S
4	U18EV22S0155	Arnab Saha	Arnab Saha
5	U18EV22S0162	Ashmith Asok	
6	U18EV22S0171	Ayushi jha	
7	U18EV22S0160	Gita Anjali. B	
8	U18EV22S0150	B Janani	B. Janani
9	U18EV22S0125	Chandreyi Banerjee	
10	U18EV22S0153	Daisy ~~Dominique~~ DOMINIC	Daisy Dominic DAISY DOMINIC
11	U18EV22S0230	Deekshitha M S	
12	U18EV22S0252	Dheeraj Kumar gaud	
13	U18EV22S0259	Eshwar KM	Eshwar.M
14	U18EV2250261	Hafsa H S	
15	U18EV22S0168	Hastha.D	
16	U18EV22S0337	J.Shiny Roberta	
17	U18EV22S0147	Janika N D	
18	U18EV22S0310	K.K.srividya	
19	U18EV22S0330	K Lalith Krishna	
20	U18EV22S0256	Kushi Bagrecha	
21	U18EV22S0314	Laharika Vusa	Laharika V.
22	U18EV22S0282	Padidam Lakshmi Sravya	Sravya.
23	U18EV22S0208	Mohammed Zain	

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24	U18EV22S0165	Namisha Sinha	
25	U18EV22S0140	Nandu Krishna	
26	U18EV22S0167	Nihaarika SN	
27	U18EV22S0207	Nischal B Rudraswamy	
28	U18EV22S0144	Priyadarshini M	
29	U18EV22S0253	Rahul s	
30	U18EV22S0209	Ravooru. Vedakshari	
31	U18EV22S0135	Rekha Kumari lohar	
32	U18EV22S0164	Renusri Dandi	
33	U18EV22S0260	S.Abineha	
34	U18EV22S0170	Sahasramshu.A	
35	U18EV22S0351	Saman tahniet	
36	U18EV22S0145	Sangeetha V	
37	U18EV22S0300	Saptarshee Das	
38	U18EV22S0316	Sasi kiran.s	
39	U18EV22S0370	Debjit Banerjee	
40	U18EV22S0382	Mohammed Khizar Husaain	
41	U18EV22S0391	R Vaishnavi	
42	U18EV22S0389	Chandni Gupta	
43	U18EV22S0397	Charan Kumar R	

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"Fins to Findings: Zebrafish in Embryonic Development, Drug Discovery, Disease Modeling, and Regeneration"

Resource Person: Dr. Gokul Kesavan,
Founder and Proprietor
Vertex Research and Education

Valedictory Session: 3rd May 2024, 10.30am onwards

Venue: Mother Teresa Auditorium

List of students - Section A 03/05/24.

Sl No	Name	USN	Student Signature
1	Aditi.S	U18EV22S0156	
2	Amruthapriya C	U18EV22S0217	
3	Ananya.S	U18EV22S0298	Ananya.S
4	Arnab Saha	U18EV22S0155	Arnab Saha
5	Ashmith Asok	U18EV22S0162	
6	Ayushi jha	U18EV22S0171	–
7	Gita Anjali. B	U18EV22S0160	
8	B Janani	U18EV22S0150	B. Janani
9	Chandreyi Banerjee	U18EV22S0125	–
10	Daisy Dominique	U18EV22S0153	Daisy Dominique
11	Deekshitha M S	U18EV22S0230	
12	Dheeraj Kumar gaud	U18EV22S0252	
13	Eshwar KM	U18EV22S0259	Eshwar.M
14	Hafsa H S	U18EV22S0261	
15	Hastha.D	U18EV22S0168	
16	J.Shiny Roberta	U18EV22S0337	
17	Janika N D	U18EV22S0147	
18	K.K.srividya	U18EV22S0310	
19	K Lalith Krishna	U18EV22S0330	
20	Kushi Bagrecha	U18EV22S0256	
21	Laharika Vusa	U18EV22S0314	Laharika V.
22	Padidam Lakshmi Sravya	U18EV22S0282	
23	Mohammed Zain	U18EV22S0208	
24	Namisha Sinha	U18EV22S0165	Sinha

diff. attendance

25	Nandu Krishna	U18EV22S0140	
26	Nihaarika SN	U18EV22S0167	
27	Nischal B Rudraswamy	U18EV22S0207	
28	Priyadarshini M	U18EV22S0144	
29	Rahul s	U18EV22S0253	
30	Ravooru. Vedakshari	U18EV22S0209	
31	Rekha Kumari lohar	U18EV22S0135	
32	Renusri Dandi	U18EV22S0164	
33	S.Abineha	U18EV22S0260	
34	Sahasramshu.A	U18EV22S0170	
35	Saman tahniet	U18EV22S0351	
36	Sangeetha V	U18EV22S0145	
37	Saptarshee Das	U18EV22S0300	
38	Sasi kiran.s	U18EV22S0316	
39	Debjit Banerjee	U18EV22S0370	
40	Mohammed Khizar Husaain	U18EV22S0382	
41	R Vaishnavi	U18EV22S0391	
42	Chandni Gupta	U18EV22S0389	
43	Charan Kumar R	U18EV22S0397	

① Ayushi
② Chandruji
③ Hafsa
④ Sangeetha

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Resource Person: Dr. Gokul Kesavan, Founder and Proprietor
Vertex Research and Education

IV sem B.Sc 'B' Sec Student List 27.04.24

Sl.No.	Reg. No.	Name	Student Signature
1	U18EV22S0247	Akshata Kankale	
2	U18EV22S0366	B.Swetha Reddy	
3	U18EV22S0361	Beesam Navadeep	
4	U18EV22S0128	Chandana V R	
5	U18EV22S0127	Chinmaya.Balachandran	
6	U18EV22S0227	D. Abhishek	
7	U18EV22S0129	Devika.A	
8	U18EV22S0251	Hrishabh Gupta	
9	U18EV22S0122	Jezreel john johnson	
10	U18EV22S0376	Keziya G S	
11	U18EV22S0367	Lakshmi. A. S	
12	U18EV22S0119	Mandara C A	
13	U18EV22S0130	Megha Raj	
14	U18EV22S0245	Mitali Prasad	
15	U18EV22S0286	Mohammed Ismail Lamba	
16	U18EV22S0350	Monisha.M	
17	U18EV22S0213	N.Ajay Amirtharaj	
18	U18EV22S0347	Navya L	
19	U18EV22S0117	Nikitha Ajith	
20	U18EV2250118	Nimmagadda Mohan	
21	U18EV22S0121	Niveditha R	
22	U18EV22S0296	P.Harshitha	
23	U18EV22S0132	Prajwal A Kambar	
24	U18EV22S0386	Pralayakaveri Devipriya	

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25	U18EV22S0377	Preetham.R	
26	U18EV22S0352	Purbasa Mandal	
27	U18EV22S0345	Radhakrishnan Sreedhanya	
28	U18EV22S0123	Sakshi Sunil Advitote	
29	U18EV22S0197	Sandeep Shivanand Hosur	
30	U18EV22S0244	Sanjana Suresh Balutagi	
31	U18EV22S0308	Sreekantham Aniruddha	
32	U18EV22S0357	Tejaswini S	
33	U18EV22S0134	Ujwal R	
34	U18EV22S0381	Vanipenta Sravan Kumar	
35	U18EV22S0378	Arya Arun Kumar	
36	U18EV22S0343	Ashissa Bedamatta	
37	U18EV22S0262	Hari Haran	
38	U18EV22S0293	K. Anuragh	
39	U18EV22S0307	Konagalla Swathi srujana	
40	U18EV22S0003	Nandana G	
41	U18EV22S0228	Neha Kiran	
42	U18EV22S0354	Priyanka v Dhargi	
43	U18EV22S0166	Sayan Paul	
44	U18EV22S0301	Sharanya C Dalawai	
45	U18EV22S0312	Shivam sharma	
46	U18EV22S0169	Sidharth S	
47	U18EV22S0152	Sinchana K	
48	U18EV22S0255	Sivaprasad TS	
49	U18EV22S0294	Swapna Sahoo	
50	U18EV22S0392	Tanishka Dewangan	
51	U18EV22S0138	Tasnim Hossain Roza	
52	U18EV22S0214	Tejaswee Brahma	
53	U18EV22S0163	Thalari Sravani	
54	U18EV22S0284	Trishala Chakraborty	
55	U18EV22S0172	V Archana	
56	U18EV22S0161	Vishnudas	
57	U18EV22S0279	Yazhini · S	
(Mb/che) 58	U18EV22S0380	Disha HM	
(Mb/che) 59	U18EV22S0360	Nagalakshmi M	
(Mb/Che) 60	U18EV22S0229	Mahee Prabhu	
(Mb/Che) 61	U18EV22S0071	Hemashree	
(MB/che) 62	U18EV22S0070	K. Balaji	

Full
Panug
Harshi

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Resource Person: Dr. Gokul Kesavan, Founder and Proprietor
Vertex Research and Education

IV sem B.Sc 'B' Sec Student List 29.4.24.

Sl.No.	Reg. No.	Name	Student Signature
1	U18EV22S0247	Akshata Kankale	
2	U18EV22S0366	B.Swetha Reddy	
3	U18EV22S0361	Beesam Navadeep	
4	U18EV22S0128	Chandana V R	Chandana.V R
5	U18EV22S0127	Chinmaya.Balachandran	
6	U18EV22S0227	D. Abhishek	
7	U18EV22S0129	Devika.A	
8	U18EV22S0251	Hrishabh Gupta	
9	U18EV22S0122	Jezreel john johnson	
10	U18EV22S0376	Keziya G S	
11	U18EV22S0367	Lakshmi. A. S	
12	U18EV22S0119	Mandara C A	
13	U18EV22S0130	Megha Raj	
14	U18EV22S0245	Mitali Prasad	
15	U18EV22S0286	Mohammed Ismail Lamba	
16	U18EV22S0350	Monisha.M	
17	U18EV22S0213	N. Ajay Amirtharaj	
18	U18EV22S0347	Navya L	
19	U18EV22S0117	Nikitha Ajith	
20	U18EV2250118	Nimmagadda Mohan	
21	U18EV22S0121	Niveditha R	
22	U18EV22S0296	P.Harshitha	
23	U18EV22S0132	Prajwal A Kambar	
24	U18EV22S0386	Pralayakaveri Devipriya	

Full name. Panuganti Harshitha

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25	U18EV22S0377	Preetham.R	
26	U18EV22S0352	Purbasa Mandal	
27	U18EV22S0345	Radhakrishnan Sreedhanya	
28	U18EV22S0123	Sakshi Sunil Advitote	
29	U18EV22S0197	Sandeep Shivanand Hosur	
30	U18EV22S0244	Sanjana Suresh Balutagi	
31	U18EV22S0308	Sreekantham Aniruddha	
32	U18EV22S0357	Tejaswini S	
33	U18EV22S0134	Ujwal R	
34	U18EV22S0381	Vanipenta Sravan Kumar	
35	U18EV22S0378	Arya Arun Kumar	
36	U18EV22S0343	Ashissa Bedamatta	
37	U18EV2250262	Hari Haran	
38	U18EV22S0293	K. Anuragh	
39	U18EV22S0307	Konagalla Swathi srujana	
40	U18EV22S0003	Nandana G	
41	U18EV22S0228	Neha Kiran	
42	U18EV22S0354	Priyanka v Dhargi	
43	U18EV22S0166	Sayan Paul	
44	U18EV22S0301	Sharanya C Dalawai	
45	U18EV22S0312	Shivam sharma	
46	U18EV22S0169	Sidharth S	
47	U18EV22S0152	Sinchana K	
48	U18EV22S0255	Sivaprasad TS	
49	U18EV22S0294	Swapna Sahoo	
50	U18EV22S0392	Tanishka Dewangan	
51	U18EV22S0138	Tasnim Hossain Roza	
52	U18EV22S0214	Tejaswee Brahma	
53	U18EV22S0163	Thalari Sravani	
54	U18EV22S0284	Trishala Chakraborty	
55	U18EV22S0172	V Archana	
56	U18EV22S0161	Vishnudas	
57	U18EV22S0279	Yazhini • S	
58	U18EV22S0070	K. Balaji	
59	U18EV22S0360	Nagalakshmi M	
60	U18EV22S0380	Disha.HM	
61	U18EV22S0071	Hema Shree. S.	
62	U18EV22S0229	Mahu Prabhu	

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Resource Person: Dr. Gokul Kesavan,
Founder and Proprietor
Vertex Research and Education

Valedictory Session: 3rd May 2024, 10.30am onwards

Venue: Mother Teresa Auditorium

List of students - Section B 03/05/24.

Sl No.	Name :	USN	Student Signature
1	Akshata Kankale	U18EV22S0247	
2	B.Swetha Reddy	U18EV22S0366	
3	Beesam Navadeep	U18EV22S0361	
4	Chandana V R	U18EV22S0128	
5	Chinmaya.Balachandran	U18EV22S0127	
6	D. Abhishek	U18EV22S0227	
7	Devika.A	U18EV22S0129	
8	Hrishabh Gupta	U18EV22S0251	
9	Jezreel john johnson	U18EV22S0122	
10	Keziya G S	U18EV22S0376	
11	Lakshmi. A. S	U18EV22S0367	
12	Mandara C A	U18EV22S0119	Mandara. C.A
13	Megha Raj	U18EV22S0130	
14	Mitali Prasad	U18EV22S0245	
15	Mohammed Ismail Lamba	U18EV22S0286	
16	Monisha.M	U18EV22S0350	
17	N. Ajay Amirtharaj	U18EV22S0213	
18	Navya L	U18EV22S0347	
19	Nikitha Ajith	U18EV22S0117	
20	Nimmagadda Mohan	U18EV22S0118	
21	Niveditha R	U18EV22S0121	
22	P.Harshitha	U18EV22S0296	
23	Prajwal A Kambar	U18EV22S0132	

24	Pralayakaveri Devipriya	U18EV22S0386	P.Devipriya
25	Preetham.R	U18EV22S0377	
26	Purbasa Mandal	U18EV22S0352	Purbasa Mandal
27	Radhakrishnan Sreedhanya	U18EV22S0345	
28	Sakshi Sunil Advitote	U18EV22S0123	
29	Sandeep Shivanand Hosur	U18EV22S0197	
30	Sanjana Suresh Balutagi	U18EV22S0244	
31	Sreekantham Aniruddha	U18EV22S0308	
32	Tejaswini S	U18EV22S0357	
33	Ujwal R	U18EV22S0134	
34	Vanipenta Sravan Kumar	U18EV22S0381	
35	Arya Arun Kumar	U18EV22S0378	
36	Ashissa Bedamatta	U18EV22S0343	
37	Hari Haran	U18EV22S0262	
38	K . Anuragh	U18EV22S0293	
39	Konagalla Swathi srujana	U18EV22S0307	
40	Nandana G	U18EV22S0003	
41	Neha Kiran	U18EV22S0228	
42	Priyanka v Dhargi	U18EV22S0354	
43	Sayan Paul	U18EV22S0166	
44	Sharanya C Dalawai	U18EV22S0301	
45	Shivam sharma	U18EV22S0312	
46	Sidharth S	U18EV22S0169	
47	Sinchana K	U18EV22S0152	
48	Sivaprasad TS	U18EV22S0255	
49	Swapna Sahoo	U18EV22S0294	
50	Tanishka Dewangan	U18EV22S0392	
51	Tasnim Hossain Roza	U18EV22S0138	
52	Tejaswee Brahma	U18EV22S0214	
53	Thalari Sravani	U18EV22S0163	
54	Trishala Chakraborty	U18EV22S0284	
55	V Archana	U18EV22S0172	
56	Vishnudas	U18EV22S0161	
57	Yazhini . S	U18EV22S0279	
58	Nagalakshmi M	U18EV22S0360	
59	Resha.HM	U18EV22S0380	
60	K. Balaji	U18E22S0070	
61	HEMA SHREE. S	U18EV22S0071	
62	MAHEE PRABHU	U18EV22S0229	

But certificate

Absent

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Resource Person: Dr. Gokul Kesavan, Founder and Proprietor
Vertex Research and Education

IV sem B.Sc 'C' Sec Student List 30/4/24.

Sl No	Reg. No	Student name	Student Signature
1	U18EV22S0092	Ankura B	–
2	U18EV22S0095	Anusha R	Anusha
3	U18EV22S0094	Anya Avinash	–
4	U18EV22S0093	Atafa Atira	–
5	U18EV22S0091	Devansh Dixit	–
6	U18EV22S0099	K Mandara	Mandara
7	U18EV22S0100	Krishnapriya M M	Krishnapriya M
8	U18EV22S0221	Laya N	Laya
9	U18EV22S0101	Maadu Nagireddy Gari Bhavana	Bhavana
10	U18EV22S0265	Malavika P	Malavika
11	U18EV22S0226	Nikitha B M	Nikitha
12	U18EV22S0340	Simra Ali	Simra Ali
13	U18EV22S0097	Snigdha A	Snigdha
14	U18EV22S0103	Sri Lalitha Hiranmai Mula	
15	U18EV22S0266	Stuti Parekh	Stuti Parekh
16	U18EV22S0264	Tanya Chiripal S	S. Tanya Chiripal
17	U18EV22S0087	Vaaridhi Dalwai	
18	U18EV22S0268	Yadunand S Mohan	
19	U18EV22S0364	Rakesh S	Rakesh S
20	U18EV22S0369	Yuaktha L - Yuktha. L	
21	U18EV22S0269	Jayant B Patil	
22	U18EV22S0270	Deeksha B M	Deeksha
23	U18EV22S0222	Manasa V	Manasa. V

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24	U18EV22S0271	~~Aindrila Paul~~ Aindrilla Paul	APaul
25	U18EV22S0281	Kashish Salian	
26	U18EV22S0112	Nihal Pradeepan E	
27	U18EV22S0114	G Baby Tejaswini	G. Baby Tejaswini
28	U18EV22S0272	Devika Santhosh	
29	U18EV22S0115	Barsha Sarkar	Barsha Sarkar.
30	U18EV22S0108	Koushik G P	Koushik G P.
31	U18EV22S0305	Ramya N Murthy	Ramya Murthy
32	U18EV22S0102	~~Vaglaganti~~ Vibha Sai Vadlaganti	
33	U18EV22S0116	Sandeep Kumar Behera	
34	U18EV22S0273	Ananya Bharadwaj	
35	U18EV22S0356	Suhas GS	—
36	U18EV22S0385	Angel Immaculate S.	
37	U18EV22S0358	Keerthana S	
38	U18EV22S0074	Deeksha D Kashyap	
39	U18EV22S0075	Soha Khanum	
40	U18EV22S0078	Mohitha A	Mohitha. A
41	U18EV22S0080	Sreyashee Basu	
42	U18EV22S0082	Naaila Hudah	
43	U18EV22S0262	Akshitha Prakash	
44	U18EV22S0313	Manisha Kumari	
45	U18EV22S0359	Mansi Singh	
46	U18EV22S0387	Shraddha Sudharshan	
47	U18EV22S0076	Hanumesha	
48	U18EV22S0351	SAMAN TAHNIET	

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Resource Person: Dr. Gokul Kesavan, Founder and Proprietor
Vertex Research and Education

IV sem B.Sc 'C' Sec Student List 02/05/24

Sl No	Reg. No	Student name	Student Signature
1	U18EV22S0092	Ankura B	-
2	U18EV22S0095	Anusha R	Anusha
3	U18EV22S0094	Anya Avinash	-
4	U18EV22S0093	Atafa Atira	-
5	U18EV22S0091	Devansh Dixit	-
6	U18EV22S0099	K Mandara	Mandara
7	U18EV22S0100	Krishnapriya M M	
8	U18EV22S0221	Laya N	Laya
9	U18EV22S0101	Maadu Nagireddy Gari Bhavana	Bhavana
10	U18EV22S0265	Malavika P	Malavika
11	U18EV22S0226	Nikitha B M	Nikitha B.M
12	U18EV22S0340	Simra Ali	Simra Ali
13	U18EV22S0097	Snigdha A	Snigdha
14	U18EV22S0103	Sri Lalitha Hiranmai Mula	
15	U18EV22S0266	Stuti Parekh	
16	U18EV22S0264	Tanya Chiripal S	S. Tanya Chiripal
17	U18EV22S0087	Vaaridhi Dalwai	
18	U18EV22S0268	Yadunand S Mohan	
19	U18EV22S0364	Rakesh S	Rakesh
20	U18EV22S0369	~~Yuaktha L~~ Yuktha. L	
21	U18EV22S0269	Jayant B Patil	Jpatil
22	U18EV22S0270	Deeksha B M	Deeksha
23	U18EV22S0222	Manasa V	Manasa.V

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24	U18EV22S0271	~~Aindrila Paul~~ Aindrilla Paul	
25	U18EV22S0281	Kashish Salian	
26	U18EV22S0112	Nihal Pradeepan E	
27	U18EV22S0114	G Baby Tejaswini	
28	U18EV22S0272	Devika Santhosh	
29	U18EV22S0115	Barsha Sarkar	
30	U18EV22S0108	Koushik G P	
31	U18EV22S0305	Ramya N Murthy	
32	U18EV22S0102	~~Vaglaganti~~ Vibha Sai . V	
33	U18EV22S0116	Sandeep Kumar Behera	
34	U18EV22S0273	Ananya Bharadwaj	
~~35~~	U18EV22S0356	Suhas GS	-
36	U18EV22S0385	Angel Immaculate S	
37	U18EV22S0358	Keerthana S	
38	U18EV22S0074	Deeksha D Kashyap	
39	U18EV22S0075	Soha Khanum	
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Founder and Proprietor
Vertex Research and Education

Valedictory Session: 3rd May 2024, 10.30am onwards

Venue: Mother Teresa Auditorium

List of students - Section C 03/05/24

Sl No	Reg. No	Student name	Student Signature
1	U18EV22S0092	~~ANKURA B~~	-
2	U18EV22S0095	Anusha R	Anusha
3	U18EV22S0094	~~ANKA AVINASH~~	-
4	U18EV22S0093	~~ATAFA ATIBA~~	-
5	U18EV22S0091	~~DEVANSH DIXIT~~	-
6	U18EV22S0099	K Mandara	Mandara
7	U18EV22S0100	Krishnapriya M M	Krishnapriya M
8	U18EV22S0221	LAYA N	Laya
9	U18EV22S0101	Maadu Nagireddy Gari Bhavana	Bhavana
10	U18EV22S0265	MALAVIKA P	Malavika
11	U18EV22S0226	NIKITHA B M	N
12	U18EV22S0340	SIMRA ALI	Simra
13	U18EV22S0097	SNIGDHA A	Snigdha
14	U18EV22S0103	Sri Lalitha Hiranmai Mula	
15	U18EV22S0266	STUTI PAREKH	
16	U18EV22S0264	TANYA CHIRIPAL S	T. Tanya Chiripal
17	U18EV22S0087	VAARIDHI DALWAI	V. A.
18	U18EV22S0268	YADUNAND S MOHAN	
19	U18EV22S0364	Rakesh S	Rakesh
20	U18EV22S0369	Yuaktha L	
21	U18EV22S0269	JAYANT B PATIL	Patil
22	U18EV22S0270	DEEKSHA B M	Deeksha
23	U18EV22S0222	MANASA V	Manasa V
24	U18EV22S0271	Aindrila Paul	Aparul
25	U18EV22S0281	Kashish Salian	
26	U18EV22S0112	Nihal Pradeepan E	
27	U18EV22S0114	G Baby Tejaswini	G Baby Tejaswini

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6	U18EV22S0099	K Mandara	Mandara
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47	U18EV22S0076	Hanumesha	

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This is to certify that

Ms/Mr. .....

Has successfully completed a skill based Hands-on-training cum workshop on

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Held between 24 April to 03 May 2024

This course offered a comprehensive blend of theoretical knowledge and hands-on practical experience. Participants delved into the intricacies of Zebrafish embryonic development, engaging in diverse activities such as drug treatments across varying concentrations, cartilage and bone staining techniques, microscopy, and image analysis. Each student independently conducted experiments, fostering a deep understanding of the subject matter while honing practical skills

Dr. Vatsala G
Principal
MSRCASC

k. Gokul

Dr. Gokul Kesavan
Principal Scientist
Vertex Research and Education