RAMAIAH
College of Arts, Science
& Commerce

M.S.RAMAIAH COLLEGE OF ARTS, SCIENCE AND COMMERCE, BENGALURU

DBT STAR COLLEGE SCHEME

ANNUAL PROGRESS REPORT 2023-2024

Submitted to

सत्यमेव जयते
Department of Biotechnology
Ministry of Science & Technology

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

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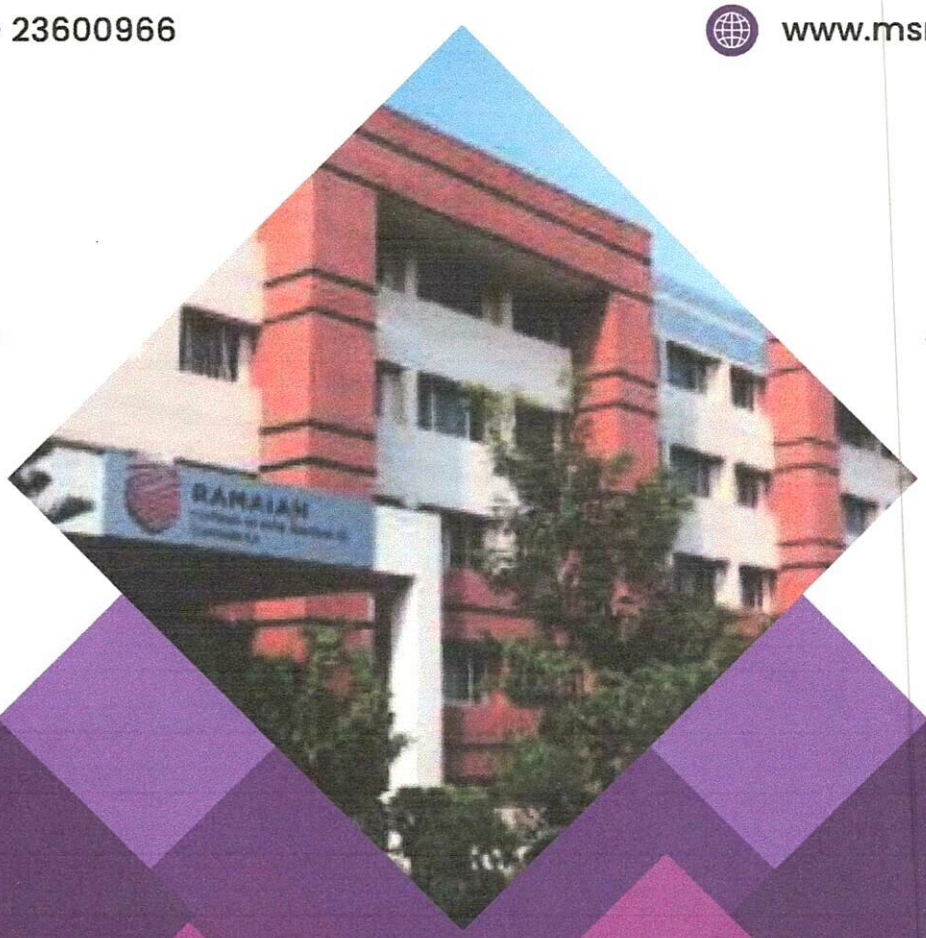

Department of Biotechnology

Proforma for submission of Annual Progress Report supported under Star College Scheme

01	Name of the College	**M.S. Ramaiah College of Arts, Science and Commerce, Bengaluru**
02	Name of the Coordinator, designation, Address and Phone Number	**Dr. Pushpa. H** Professor and Principal, M.S. Ramaiah College of Arts, Science and Commerce, Bengaluru-52 Email: pushpa_microbio@msrcasc.edu.in Mobile: 9446789510 College: 08023600966
03	Assessment Duration	1-04-2023 to 31-03-2024
	Duration in years	1 year

4. Details of the Department supported:

Sl No.	Name of the Department	Courses offered	Regular Faculty Members	
			Total: 48	
			With PhD	Without PhD
01	Biotechnology	BSc and MSc	15	01
02	Chemistry	BSc and MSc	11	03
03	Electronics	BSc	01	03
04	Microbiology	BSc and MSc	13	01

05. Number of Date of Advisory Committee meeting:

Sl No.	Date
01	16th June 2022

06. Qualitative improvements due to DBT support. Please highlight 5 salient points (within 500 words):

1. **Skilled based education through hands on exposure through additional experiments, training, Value added/add on courses**:

   In line with the objective of the scheme lots of emphasis were given to the hands-on exposure to the students, in this regard additional experiments were incorporated with the existing syllabus, SOPs were made for those additional experiments, experiments which were studied as demonstrations or in the form of charts were brought in as the hands on experiments to each of the

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students, in addition value added program/ workshops/training program were conducted as per the requirement for their further research/placement/entrepreneurship by each of the department to make the students confident in their domine subject.

2. **Strengthening infrastructure of the laboratory:**

The Equipment, chemicals, glass wares and other consumables required for conduction additional practical, hands-on training and for minor research projects were procured through the scheme and multiple instruments were available so that each of the student could access and perform the experiment individually not in groups or not in the form of demonstrations.

3. **Library Facilities:**

The multiple copies of the books in the library were made available for the students through the scheme.

4. **Participative learning through participating in outreach activities:**

Conducting Outreach Activities

Students under the guidance of the respective department and faculty members to part in awareness and sensitization programs for rural communities about Swatchtha Mission, Health and Hygiene, Tuberculosis, Aids and Cancer etc. apart from awareness program students and faculty members also conducted few experiments in unprivileged schools in rural and urban area. through this activity students learned to connect to people and apply their theoretical knowledge practically for the benefit of society.

Exhibitions, Competitions:

To make the students understand the subject and apply them in day today life and research many fests, club activities, symposium, working model presentation, Poster Presentation.

5. **Minor Research Project:**

All the V semester students were assigned with the research guide by the end of IV semester to execute the minor research project about 26 different minor projects were executed through the scheme and many of our students attended

the national and international conferences, presented their research findings, and won best paper presentation awards. The research experience was not only restricted to final year students interested first- and second-year undergraduate students were also encouraged to participate to get the research experience.

7. **Any Novel aspect introduced or planning to introduce during the Scheme duration.**

To inspire the students towards higher education and research, lots of emphasis were given towards hands-on training by introducing additional experiments, organizing training, value added courses, additionally a series of guest lectures, seminars, symposiums were organized, to give an exposure toward experiential learning and application of their knowledge industrial visits and outreach activities were organized. Finally, the students were given an exposure towards minor research projects so that students get an idea about problem finding, analyze the problem, collect relevant information, build strategy/methodology to solve the problem, Evaluate, conclude, apply and build future plans. The outcome of this is 45% of the students opted for higher education some of the students joined for integrated PhD in Indian Institute of Science.

8. **Lessons learnt / difficulties faced/suggestions if any, in implementation of the programme and utilization of DBT grant. (Max 3 points within 300 words).**

1. Opening Zero Balance Account was the main issue- due to this we were in confusion that money must be utilized or not. However, the account was opened and money was refunded and to receive money took long time.
2. The main lesson learnt was to prepare the Calander of activities and executing in the prescribed time without deviation.

9. Key Points indicators:

Sl No.	Indicator	Pre support 2021-2022	During/after support (2022-2023)	During/after support (2023-2024)	Remarks
01	No. of Students admitted	M= 74 / F= 177	M= 65 / F= 138	M= 85 / F= 130	
		SC ST OBC G SC ST OBC G	SC ST OBC G SC ST OBC GM	SC ST OBC G SC ST OBC G	
		3 0 33 35 12 01 84 80	7 1 24 34 12 3 35 87	4 0 20 38 10 1 50 92	
2	No. of students passing out (%) Students Admitted/passing out (pass %)	No. of Students admitted: 256 No. of Students took final sem exam: 244 No. of students passed out: 232 Pass % = 95.02 (Data 2019-2022 batch)	No. of Students admitted: 250 No. of Students took final sem exam: 243 No. of students passed out: 230 Pass % = 94.65 (Data 2020-2023 batch)	No. of Students admitted: 241 No. of Students took final sem exam: 235 No. of students passed out: 232 Pass % - 98.7 (Data 2021- 2024 batch)	
3	Drop-out rates	4.7%	2.8%	0.9%	
4	No. of students opting for MSc	97 (41%)	117 (50.8%)	156 (67%)	
5	Average marks	8.1 (SGPA)	8.3 (SGPA)	8.7 (SGPA)	
6	No. of hands-on experiments being conducted	MB-72 BT- 72 Chemistry- 89 Electronics- 66	MB- 91 BT- 76 Chemistry-94 Electronics-77	MB- 91 BT- 78 Chemistry-96 Electronics-90	
7	No. of new experiments introduced	MB-0 BT-0 Chemistry-0 Electronics-0	MB- 19 BT-04 Chemistry-05 Electronics-11	MB- 19 BT-06 Chemistry-07 Electronics-24	
8	Publications (Scopus indexed) /patents, if any.	45	42	50	
9	Training received by	63	NPTEL- 15	NPTEL- 15	

	Faculty			FDPs- 15	
10	Exhibitions/seminars /Training courses conducted		Add-on/training/Workshops/FDPs- 29 Exhibitions/competitions/activities- 18 Industrial visits- 10	Add-on/training/Workshops/FDPs- 15 Exhibitions/competitions/activities / competitions=22 Industrial visits- 11	
11	Books/journals subscribed from Grants	-	-	Microbiology- 16 Biotechnology- 20 Chemistry- 17 Electronics- 10	
12	Outreach activities (Popular lectures)	04	11	07	
13	Colleges mentored toapply for DBT Star College grants	-	-	-	
14	Invited lectures	12	25	20	

10. Self-Evaluation: Microbiology

Department	*Objective (as stated in proposal)	% achieved	Reasons for underachievement / If achieved, state in quantitative metrics
Microbiology	To enhance the quality of the learning and teaching process to stimulate original thinking through '***hands–on***' exposure to experimental work. (Additional experiments and hands on training)	100%	2
Microbiology	To provide better library facility to students and teachers	80%	1.25 Some more journals and manuals to be added
Microbiology	Procuring new equipment and upgrading existing facilities	100%	2
Microbiology	Minor research Projects- Summer school	100%	2
Microbiology	Devising standard curricula and Standard Operating Procedures (SOP's)	80%	1.75 (SOPs for additional experiments and training has been done, due to introducing NEP-2020, syllabus has been revised we are in the process of developing manual for regular experiments)
Total out of 10 marks			9.00

Self-Evaluation: Biotechnology

Department	*Objective (as stated in proposal)	% achieved	Reasons for underachievement / If achieved, state in quantitative metrics
Biotechnology	To enhance the quality of the learning and teaching process to stimulate original thinking through '***hands–on***' exposure to experimental work. (Additional experiments and hands on training)	75%	1.75
Biotechnology	To provide better library facility to students and teachers	90%	1.87 (Some more Journals, reference books to be added)

Biotechnology	Procuring new equipment and upgrading existing facilities	100%	2.00
Biotechnology	Minor research Projects- Summer school.	100%	2.00
Biotechnology	Student's Exposure to research laboratories and industries	90%	1.87
		Total	9.49

Self-Evaluation: Chemistry

Department	*Objective (as stated in proposal)	% achieved	Reasons for underachievement / If achieved, state in quantitative metrics
Chemistry	To enhance the quality of the learning and teaching process to stimulate original thinking through '***hands–on***' exposure to experimental work. (Additional experiments and hands on training)	80%	1.75%
Chemistry	To provide better library facility to students and teachers	85%	1.85 (Some more journals, manuals, reference books to be added)
Chemistry	Procuring new equipment and upgrading existing facilities	100%	2.00
Chemistry	Minor research Projects- Summer school.	90%	1.85 (some of the students could not compete the project in time)
Chemistry	Devising standard curricula and Standard Operating Procedures (SOP's)	80%	1.75 (SOPs for additional experiments and training has been done, due to introducing NEP-2020, syllabus has been revised we are in the process of developing manual for regular experiments)
		Total	9.20

Self-Evaluation: Electronics

Department	*Objective (as stated in proposal)	% achieved	Reasons for underachievement / If achieved,1- state in quantitative metrics
Electronics	To enhance the quality of the learning and teaching process to stimulate original thinking through '***hands–on***' exposure to experimental work. (Additional experiments and hands on training)	90	1.87
Electronics	To provide better library facility to students and teachers	80	1.75
Electronics	Procuring new equipment and upgrading existing facilities	100	2.0
Electronics	Minor research Projects- Summer school.	95	1.9
Electronics	Devising standard curricula and Standard Operating Procedures (SOP's)	95	1.9
		Total	9.42

11. ZBSA Status: (Mark Check Box):

Not opened ☐ Under process ☐ Opened but not mapped on PFMS ☐ Account is functional ☑

Remarks if, any:

12. Sanctioned Budget details

·Rs. In Lakhs

Head	Total Released Budget from DBT	Total Expenditure	Balance as on 27.11.2024	Remarks if any
Grants for creation of capital assets (Non- recurring)	40.00	38,24,821	1,75,178	Electronics department can procure
Grants-in-aid General (Recurring)	14.00	11,97,132	2,02,868	Travel and contingency amount are left
Total	**54.00**	**50,21,953**	**3,78,046**	

Course Coordinator

Head of the Institutions

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Annual Progress Report 2023-24

Proof for Key Performance Indicators

I. List of New experiments/Additional experiments introduced:

(Response to key performance indication 6 and 7)

Sl No.	Department	Additional Experiment conducted
1	Electronics	Designing of PCB Bords
2	Electronics	Designing of circuit using ARDUINO board
3	Electronics	Designing of LDR based application circuit
4	Electronics	Embedded C Programs Using KIEL
5	Electronics	Designing of ENCODER & DECODER ckt using XILINX
6	Electronics	Designing of Shift Registers using XILINX
7	Electronics	Designing of PLD's & PLA
8	Electronics	Designing of Analog to Digital Converter
9	Electronics	JFET Characteristics Simulation study
10	Electronics	Amplifier & Oscillator simulation study
11	Electronics	Combinational circuit simulation study
12	Electronics	Code converters study simulation study
13	Electronics	Designing of AM using MATLAB Simulink
14	Electronics	Designing of FM using MATLAB Simulink
15	Electronics	Arduino interfacing for Blootooth and Keypad
16	Electronics	Arduino Interfacing for LED/LDR
17	Electronics	Realization of Gates using MATLAB Simulink
18	Electronics	Realization of Adders & Subtractors using MAT LAB Simulink
19	Electronics	Design of Flip Flops using MAT LAB Simulink
20	Electronics	Design of Encoders in FPAGA Kit.
21	Electronics	PSPICE simulation of nodal analysis for DC Circuit
22	Electronics	PSPICE simulation of DC Circuit for determining thevinins theorem
23	Electronics	PSPICE simulation of Maximum Power Transform theorem
24	Electronics	PSPICE simulation of AC Circuit
25	Biotechnology	DNA amplification using polymerase chain reaction
26	Biotechnology	Gel Electrophoresis
27	Biotechnology	Fermentation Process-Wine Preparation
28	Biotechnology	Differential staining of Blood cells
29	Biotechnology	Wine Production technology

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30	Biotechnology	Basics of Plant tissue culture
31	Chemistry	Hands on training on handling UV-Visible Spectrophotometer, distillation unit, Hot air oven etc.,
32	Chemistry	Determination of Viscosity using Digital Viscometer
33	Chemistry	Extraction of Curcumin
34	Chemistry	Determination of saponification number of fats
35	Chemistry	Determination of Iodine number of fats
36	Chemistry	Ion exchange chromatography
37	Microbiology	Agarose Gel Electrophoresis
38	Microbiology	Plasmid DNA isolation
39	Microbiology	Restriction Digestion of substrate DNA
40	BSc-Microbiology	In Vitro DNA Ligation
41	Microbiology	Agricultural Microbiology- Production of Rhizobium
42	Microbiology	Detection of Food Pathogens
43	Microbiology	Preparation of Tomato Ketchup
44	Microbiology	Preparation of Different Types of Microbiological Media
45	Microbiology	Isolation of Microorganisms Streak Plate Method
46	Microbiology	Isolation of Microorganisms Pour Plate Method
47	Microbiology	Wrapping and cotton plug of glassware
48	Microbiology	Aseptic transfer techniques
49	Microbiology	Culture Media preparation
50	Microbiology	Spread plate Technique for isolation of microorganisms
51	Microbiology	Determination of Amylase activity from Bacterial, Fungal and Plant sources
52	Microbiology	Baird Parker Media preparation and Isolation of Staphylococcus sp. from skin flora
53	Microbiology	Acid fast staining and study of acid-fast bacteria
54	Microbiology	Demonstration of Basic Fermenter
55	Microbiology	Isolation and screening of acetic acid producing bacteria

III. Training received by faculty

(Response to the Key performance indicator- 09)

III a. List of faculty members completed NPTEL certificate course/FDPs/Workshops attended

Sl No.	Department	Date and Duration	Name of the Faculty	Title
1	Microbiology	January to April 2023	Soumya S Shanbhag	**"Enzyme Science and Technology"**
2	Microbiology	July to September 2023	Soumya S Shanbhag	**"Developing Soft Skills & Personality"**
3	Microbiology	May 18th 2024	Dr.Prashanthi R	Approach to and Interpreatation of serum protein by electrophoresis and immunofixation
4	Microbiology	June 28th-june 29th 10 Days	Dr.Vishal M	Biocon Academy Faculty Development Programme
5	Electronics	Jan-April 2024	Rithu R	Advanced Robotics
6	Electronics	Jan-April 2024	Nesara K R	Integrated Circuits, Mosfets OP-Amp and their Application
7	Chemistry	June 28th-june 29th 10 Days	Dr. Suveditha	Biocon Academy Faculty Development Programme
8	Biotechnology	June 28th-june 29th 10 Days	Dr. Sowbhagya	Biocon Academy Faculty Development Programme

IV. Exhibitions/seminars/Training courses conducted

(Response to key performance indicator 10)

IV a. List of Training program/workshops/Value added programmes/FDPs organized:

Sl No.	Department	Course	Title	Date and Duration	Total No. of Beneficiaries
1	Biotechnology	Workshop	Skill based hands on Training cum workshop on " Fins to Findings"	April 24- May 3-2024	150
2	Biotechnology	Value added course	Plant tissue culture		50
3	Electronics	Value added program	value added program on "Microprocessors-8086"	23/10/2023 to 31/12/2023	21
4	Electronics	Training program	"Electronic Development Applications for current	04.02.2023	60

			Industrial Requirement"		
5	Electronics	Training program	Hand on training program on "IMAGE PROCESSING onramp"	07.02.2023	60
6	Electronics	Training program	Hand on training program on "FPGA using Xilinix kit"	17.02.2023	21
7	Electronics	Training program	Hand on training on IOT using Raspberry Pi & Node MCU	16.05.2023	40
8	Electronics	Training	Hands on training program on "MATLAB onramp"	09.10.2024 to 12.10.2024	20
9	Electronics	Training program	Hands on training program on "Machine learning and Deep learning onramp"	16.10.2023 to 27.10.2023	20
10	Electronics	Workshop	Workshop on "Corner Electric-View model "	18.11.2023	25
11	Electronics	Training program	Hands on training program on "Digital Design using VERILOG on FPGA kit"	19.01.2024	21
12	Microbiology	Workshop	Mushroom cultivation	16th October 2023	95
13	Microbiology	Value Added Program	Biofertilizers Production Technology	9th July to 19th August 2022	29
14	Microbiology	Value Added Program	Good Manufacturing Practices	13th July to 13th August	26
15	Microbiology	Value Added Program	Techniques in Mol Bio & RDT	18th to 21st July 2023	32

IV b. List of Exhibitions/participative learning/Fests/Club activities organized:

Sl No.	Date	Title	Nature of Program	No. of participans
1	9th to 25th January 2023	**Microfest-2k23 on the theme "Antimicrobial Resistance and Drug Discovery"**	Fest	120
2	15th & 16th May 2024	National Conference on "Trends in Multidisciplinary	National Conference	320

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		Research: Challenges and Applications"		
3	30th May 2024	World No Tobacco Day- An Awareness Program	An Awareness Program	35
4	22nd February 2024	**"Scifiesta: Explore the unseen!!!" Outreach Program for school kids on account of National Science Day 2024**	Outreach/ Extension activity and exibiiton	110
5	16th October 2023	**"World Food Day" Demonstration of Mushroom Cultivation and Display of Mushroom-Based Foods**	Fest	150
6	12th August 2023	**Rangoli Competition for UG and PG Students: State-Level and National-Level, in Collaboration with the Microbiologists Society, India**	Competition	45
7	27th February 2024	Poster presentation, Face painting, photography, Sustainability in entrepreneurship	Competition	75
8	13-07-2023	National symposium	poster presentation and Model Presentation of all the projects done by students.	150

IV c. List of Industrial visits:

https://drive.google.com/file/d/1ObuTUpZxPi6WETYaugUPxeRpm30WQhTp/view?usp=sharing

Sl No.	Department organized	Industry Visited	Date	No. of Beneficiaries
1	Chemistry	Anugraha Chemicals	21-02-2023	31
2	Chemistry	Shriram Institute for Industrial Research	6th Feb 2024	36
3	Chemistry	Enviro Test House	14-08-2023	21
4	Chemistry	Interdiciplinary Trans-Disciplinary Health	14/12/2023	26

		Sciences and Technology, Yelahanka,		
5	Chemistry	JNCASR, Bengaluru	30/06/2023	35
6	Chemistry	IISc, Bengaluru	12/07/2024	31
7	Biotechnology	Institutional Visit to GKVK, University of Agricultural Sciences, Bangalore	July 5, 2024	150
8	Biotechnology and Microbiology	National Institute of oceanography, Goa University,		75

V. Books/Journals subscribed from the grant:

(Response to the key performance indicator 11)

https://drive.google.com/file/d/1D29QE-zWSTwuOnSIKsN-GeOg74VYSVvM/view?usp=sharing

VI. List of Outreach activities:

(Response for Key Performance indicator 12)

Sl. No.	Date	Department	Name of the activity	Place	Beneficiaries
01	23rd February 2024	Microbiology	Outreach activity under CSR in association with NSS - Visit to "Little Sister's" old age home	Bangalore	250
02	2nd December 2023	Microbiology	Extension Activity for World AIDS Day: Spreading Awareness in the College Community, Extended to Residents and Shops in Mathikere, Bangalore	Bangalore	100
03	2nd December 2023	Microbiology	Extension Activity for World AIDS Day: Spreading Awareness in the College Community, Extended to Residents and Shops in Mathikere, Bangalore	Bangalore	
04	22/02/2024	All departments	Awareness and inspiring Science through basic experiments for school children	Bangalore- 6 school children had participated	110 school students and many students were actively involved

05		Chemistry	Chemistry Practicals for High School Students	GHS, Kanasavadi, Doddaballapura Taluk, Bangalore rural district-561203	87
06		Chemistry	Chemistry Practicals for High School Students	M S Ramaiah High School, MSR Nagar, Bangalore-54	96
07		Electronics	Awareness Program on Basic Electronics "Scientific Acquaintance Among the Young Minds"	Electronics Laboratory	Ramaiah Vidhyaniketha n High school students

VII. Invited lectures:

Sl. No.	Department	Date	Title	Name of the Resource person	No. of beneficiaries
1	Chemistry	13/07/2022	CELL CYCLE AND ITS REGULATIONS	Preethi	55
2	Chemistry	12-12-2022	**3D Molecular structures on proteins and their applications**	Dr. Madan Kumar Shankar	150
3	Chemistry	27-12-2022	**Current Advancements in Chromatography & Spectroscopy**	Mr. Venugopal Rao Karanam	150
4	Chemistry	11-08-2023	Importance of Quality control in various industries	Dr. Mallesha H	40
5	Chemistry	08-07-2023	Advanced analytical Techniques - AAS	Dr. Arun Kumar N S	17
6	Chemistry	08-07-2023	Structure and Bonding in Metal complexes	Dr. Manohar P	25
7	Biotechnology	7th June 2024	Guest Lectures-by	Prof. Upendra Nongthomba, Professor, Developmental Biology and Genetics,	120

				Indian Institute of Science (IISc), Bengaluru.	
8	Biotechnology	1st June 2024	Guest Lectures -by	Dr. Nagaraj MK, Associate Professor, Department of Clinical Biochemistry, East Point College of Medical Sciences and Research Centre, Bangalore	109
9	Biotechnology	30th April 2024	Guest Lectures-by	Dr. Sudeeksha HC, Application Scientist, Head-Application and Business Support (Life Sciences), HORIBA India Pvt. Ltd. Bangalore	99
10	Biotechnology	11th August 2023	"Why Do We Behave the Way We Do?: From the Perspective of Neuroscience"	Mr. Suchith CM, Research Assistant, TIFR, Mumbai	250
11	All Science departments	28th February 2024	Guest lecture	Arun M Isloor (Sir CV Raman young Scientist awardee and technical fellow, Professor, Department of Chemisry, NIT, Surathkal	200
12	All Science departments	28th February	Guest lecture	Dr. Dinesh Rangappa, Professor, Department of Appliet science-Nanotechnology, VTU	200
13	All Science departments	16 and 16th May 2024	Conference	Dr. Sridevi Annapurna Singh CSIR- CFTRI Director, Mysuru	450
14				Dr. Shankar Narayana Rao Registrar, NIMHANS, Bengaluru	
15				Dr. Prakash Halami Chief Scientist & Professor CSIR-CFTRI, Mysuru	

16				Dr. Neena S John Scientist E Center for Nano and Soft Matter Sciences, Bengaluru	
17				Dr. S. Chandrashekaran Chief Executive Officer Vipragen, Mysuru	
18				Dr. E. Parasuraman Vellore Institute of Technology (VIT)	
19				Dr. Naresh Nalajala Poornaprajna Institute of Scientific Research, Bengaluru	
20				Dr. Geetha Bali Former Vice Chancellor Karnataka State Women's University	

List of Minor research projects:

Sl. No.	Name of the Student	Class	Name of the Guide	Title of the project
1	Mr. Abdul , Mr. Manjunath and Mr. Ajay	BSc	Dr. Vishal M	"Evaluation of Plant Extracts against Dental Cariogenic Bacteria"
2	Ms. Hastha D , Ms. J Shiny Roberta and Ms. Shravya	BSc	Dr.Vishal M	"Evaluation and Extraction of Potent Comounds from selective Medicinal Plants"
3	Navyatha Shree, Lisha Shiva Shankar, Mahathvini G.A	BSc	Mrs. Soumya S Shanbhag	Bioremediation of Heavy metal Lead
4	Ms.Madhushree and Ms. Shrushti	BSc	Dr. Vishal M	Comprehensive Study of Nothapodytes nimmoniana (J. Grah.): Identification and Characterization of Phytochemicals
5	Gurupreeth Singh	B.Sc.(EC) 6th Sem	Dr. Naveen Kumar R	Electrical switching system with out using relay circuit
6	Anoop R	B.Sc.(EC) 6th Sem	Dr. Naveen Kumar R	Mobile controlling Vehicle System
7	Prekshith	B.Sc.(EC) 6th Sem	Dr. Naveen Kumar R	Aerial vehicle controle using wireless communication

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VIII. List of Publications 2023-2024

Response to Key performance indicator 8

Sl No.	Name of the Faculty	Title of the Paper	Year of Publication	Link
1	Prasanna Kumar S G	Development of Coriander Honey loaded CeO2 for Cyclic Voltammetry, Chemical sensor, dye purification and antioxidant properties	2023	**https://doi.org/10.1016/j.jtice.2023.105174**
2	Prasanna Kumar S G	**Reduced graphene oxide loaded La2O3 nanocomposite for dye degradation and antioxidant studies**	2024	https://doi.org/10.1016/j.rsurfi.2024.100202
3	Prasanna Kumar S G	Synthesis and Characterization of Reduced Graphene Oxide Fabricated Over Ruthenium Oxide through Reflux Method	2024	http://www.informaticsjournals.com/index.php/jmmf
4	Prasanna Kumar S G	Green synthesis of natural gomutra and honey doped CeO2 nanocomposite for green sensor, cyclic voltammetry, photocatalysis and antioxidant studies"	2024	. https://doi.org/10.1016/j.grets.2024.100085
5	Prasanna Kumar S G	Carbon Nanotubes: Current Applications, Structural Insights and Future Prospects	2024	
6	Dr. Hareesh Kumar P	Synthesis & Cytotoxic activity of Bis (μ – chloro) bis (azobenzenyl analogues) dipalladium complexes	2023	**https://doi.org/10.1016/j.matpr.2023.06.365**
7	Dr. Hareesh Kumar P	Unravelling the Potential of Curcumin in Cancer Treatment. A Comprehensive Exploration	2024	. https://dx.doi.org/10.21275/SR24319154959
8	Ramya kumari B S	Effect of Nutrients and Herbal Supplements in the Treatment of OCD	2023	Nutrition and Obsessive-Compulsive Disorder
9	Ramya kumari B S	Nanotechnology for removal of personal care products and related compounds	2024	https://doi.org/10.1016/B978-0-443-15660-1.00017-4

21	Dr. Smrithi S.P.	Visible Light Active WO3/TiO2 Heterojunction Nanomaterials for Electrochemical Sensor, Capacitance and Photocatalytic Applications	2023	https://doi.org/10.1007/s10562-023-04362-7
22	Bharath K. Devendra	Experimental, electrochemical and DFT simulation studies of a novel Schiff base derivative as an efficient mild steel corrosion inhibitor in acidic environments	2024	https://doi.org/10.1016/j.rsurfi.2024.100246
23	Bharath K. Devendra	Single Step Transformation of Urea into Metal-Free g-C3N4 Nanoflakes for Visible-Light Photocatalytic Degradation of Crystal Violet Dye	2023	https://doi.org/10.18311/jmmf/2023/43600
24	Bharath K. Devendra	Mechanical and corrosion properties of electrochemically deposited Ni-Nb2O5 composite coatings on mild steel for marine applications.	2023	https://doi.org/10.1080/28361466.2023.2256215
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