

Department of Biotechnology

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

1. **Name of the College :** Sophia College

2. **Name of Coordinator, designation:** Dr. P. Sirisha Murthy, Asst. Professor

Address: Sophia College, Bhulabhai Desai Road Mumbai -
400026 Phone nos. 9969186094

3. **Assessment duration :** 12/06/2023 to 31/03/2024 Duration of one year

4. **Details of Departments Supported**

Sl No	Name of Department	Courses (B.Sc./M.Sc./PG Diploma, certificate etc) offered	Regular Faculty members	
			Total = 22	
			With Ph.D.	Without Ph.D.
1.	Chemistry	B.Sc and M.Sc	2	5(1 permanent + 4 AD HOC)
2.	Composite Department	B.Sc	2	1
3.	Life Science	B.Sc and M.Sc	3 (1 PERMANENT + 2 AD HOC)	2 (AD HOC)
4.	Microbiology	B.Sc and M.Sc	2	5 (2 PERMANENT + 3 AD HOC)

5. **Number & Date of Advisory committee meeting:**
Meeting was held on 3/1/2023



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

1) Laboratory skill enhancement:

Equipment:

The purchase of multiple units has enabled students to perform experiments independently. Procurement of sufficient glass and plastic ware helped in reducing the waiting time of the students in the laboratory especially if the apparatus had to be sterilized.

Additionally, the introduction of UV spectrophotometer and cold centrifuge in assays has significantly improved the experimental skills and enriched the students with hands-on experience of using these high end equipment. It has enabled us to plan and execute experiments that were previously not feasible due to limited resources. Students now have the opportunity to explore new research avenues, expanding their understanding and capabilities in the field.

The acquisition of advanced instruments and equipment has significantly enhanced the learning experience of the stakeholders and enabled one to plan experiments that could not be conducted earlier.

As far as research was concerned, students were able to explore more areas of their research interest which was earlier not possible due to limited facilities.

Examples of the experiments introduced in the curriculum:

- Microbial Culture density and Growth Curve: made effortless by the procurement of a sidearm flasks and shaker- incubator facility which can hold multiple flask at a time.
- Cultivation of Sulfate-Reducing Bacteria: the addition of an anaerobic jar made it possible to grow the strict anaerobes.

These advancements are transforming our curriculum and enhancing student engagement in scientific exploration.

Projects:

Hands-on research projects were encouraged, leading to a culture of questioning among students and enabling them to seek answers to such questions. This greatly helped to enhance their critical thinking and analytical skills.



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2) **Empowering Students and Staff:**

A number of webinars, seminars, conferences and workshops were organized to give a platform for interaction with professionals and experts from various fields.

The add-on course 'Positive Health in Women' helped to sensitize the participants to the fact that physical, mental and emotional health of a woman is a pillar of work life balance.

Conducting pedagogy workshops for staff, and encouraging both teaching and non-teaching personnel to participate in faculty development programs and laboratory training sessions has resulted in a heightened application of these acquired skills in the teaching-learning process.

3) **Social engagement**

Star Scheme has played a crucial role in strengthening the undergraduate program within the college, significantly improving the academic experience for the students. This increases our responsibility to extend these benefits to others in the society.

Impactful community engagement programs includes

- 'Science Adda -Inter Departmental outreach activity,'
- Science Education through Experiments and Demonstration (SEED)- for school students
- Sharing Resources with other colleges

The above initiatives focused on leveraging the skills and knowledge of college students which helped to benefit younger learners, particularly those from underprivileged backgrounds.

4) **Innovative research activity:**

The support from the Department of Biotechnology (DBT) under the Star scheme initiative has significantly helped to create a culture of research at the undergraduate level. This is reflected not only in the increased number of research projects undertaken by students but also there has been significant enhancement in the quality of research.

The UG research programme (EXSP - Excellence in Science Program) at our college level necessitates the students to present their work in 'Aavishkar' a



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prestigious university-level research meet every year. This year too our students' team was qualified to present their work at zonal level.

Additionally, the research work was also presented in the form of poster presentations at several conferences including one presentation at an international conference.

Overall, the DBT's support through the Star Status initiative has been instrumental in elevating the standard of undergraduate research.

5) Communication skill development :

The outcome of research efforts at Sophia College has led to publications in the in-house journal, SCRIBE, as well as in other Scopus-indexed journals. This achievement marks a significant milestone in pursuit towards academic excellence.

Writing and presentation skills, critical thinking, data interpretation and reporting, engaging with peer review, etc were inculcated in them.

In summary, the process of publishing research significantly contributes to the development of comprehensive scientific communication skills.

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

1. e-Content development:

Creation of videos by the undergraduate students for 9th Std syllabus in biology. Audio of these videos are proposed to be in Hindi and Marathi language. Students will use this content for teaching underprivileged children of nearby municipal schools.

TYBSc class created videos on Industrial Microbiology. These videos were designed to provide valuable insights into the subject. These will be shared on you-tube so that it may serve as open education resource.



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2. Mentoring Other Colleges:

The experience Sophia College gained, under Star Scheme, will be shared with other College to mentor them to apply for Star College Grants.

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

Logistics of utilization of the grant

The establishment of our PFMS account demanded coordination with DBT finance and PFMS officials. Subsequent opening of ZBA with ICICI bank also took a long time. All these affected payments to our vendors and hence the delivery of the equipment was delayed due to which some of the experiments planned were not yet conducted.

The shift of payments from PFMS to DigiPay and back to PFMS caused a lot of delay in the payments to the vendors. This also delayed the submission of the necessary details for getting the second year grant.

In terms of students

Training students to identify the research problem without prior research experience and generating an awareness of ethics in scientific writing was challenging.

Experiences gained during the process of implementation provided invaluable insights, highlighting the necessity for improved planning and adaptability in future endeavours.



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9. Key performance indicators

S. no	Indicator	Pre-support (During Star College Scheme)	During /After Support Star College Status	Remarks							
1	No. of students admitted		FY B.Sc (NEP) Total = 71 SY B.Sc Total = 49 TY B.Sc Total = 63								
		M=nil	F= all admitted UG students	M=nil	F= all admitted UG students						
		S C	S T	OB C	G	S C	S T	OB C	G	S C	S T
2	No of students passing out (%) Students admitted/passing out (pass%)	2023-2024 (Sem 2, 4 & 6)	FY B.Sc Total = 40/70 %= 57.14% SY B.Sc Total = 40/48 %= 83.33% TY B.Sc Total = 50/58 %= 86.20%	There were lot of challenges in admissions due to NEP this academic year							
3	Drop out rates (%)	2023-2024 (Sem 2, 4 & 6) SYBSc and TYBSc – one or two students	FY B.Sc Total = 12/70 %= 17.14% SY B.Sc Total = 0/48 %= 00.00% TY B.Sc Total = 1/58 %= 1.72%								
4	No. of students opting for MSc	2023-2024	MSc (A.Chem) Sem 1= 9 MSc (Micro) Sem 1= 9								



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			MSc (Life Sci) Sem 1= 10 Total Sem 1= 28 MSc (A.Chem) Sem 3= 10 MSc (Micro) Sem 3= 10 MSc (Life Sci) Sem 3= 8 Total Sem 3= 28	
5	Average marks	2023-2024 (Sem 2, 4 & 6)	FY B.Sc Total = 562/600 %= 93.67% SY B.Sc Total = 910/1000 %= 91.00% TY B.Sc Total = 742/800 %= 92.75%	
6	No. of hands-on experiments being conducted		Annexure 1	
7	No. of new experiments introduced		Annexure 1	
8	Publications (scopus indexed) /patents, if any.		Annexure 2	
9	Training received by faculty		Annexure 3	
10	Exhibitions/seminar s /training courses conducted		Annexure 4	
11	Books/journals subscribed from grants		NIL	
12	Outreach activities (Popular lectures)		Annexure 6	
13	Colleges mentored to apply for DBT Star College grants		Nil	
14	Invited lectures and student activities		Annexure 7	



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10. Self evaluation

Department	*Objective (as stated in proposal)	% achieved	Reasons for underachievement / If achieved, state in quantitative metrics
Departments of Chemistry Microbiology Life Sciences Composite (ZP)	Laboratory Skill enhancement	100% (2 marks)	All experiments in the syllabus were completed on time due to the presence of sufficient units, apparatus and chemicals. Each student got a chance to do the experiment individually. Multiple units of the same instrument and procurement of advanced instruments also played a significant role in their skill development.
	Enrichment of Staff and student	100% (2 marks)	Staff members could upgrade their teaching and subject skills by attending faculty development programs. The guest lectures / webinars organized for students could make them aware of the advances in the specific field. Project Work - All students had to take up a project in all subjects which greatly improved their skill sets in many ways.
	Innovative research activity	100 % (2 marks)	Students learnt to plan, prepare and carry out experimental work independently through additional research projects(with the help of teacher-guides). This activity equipped them with organizational and time management skill, self-discipline resilience, and stamina and this improved their research skills. The research work was also presented in national conferences



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			which enriched the students learning experience
Departments of Chemistry Microbiology Life Sciences Composite (ZP)	Improved environmental and social interaction	100% (2marks)	Students are trained to perform experiments in microscale sensitizing them to use minimum amount of chemicals. This also reduced the waste generated. Sensitizing students about the conditions of the less privileged in the society via donation drive. We could induce a sense of social responsibility, commitment and empathy amongst all our students through the social outreach programs
	Strengthening the existing outreach activities	100 % (2 marks)	TY students on a regular basis help with remedial teaching.at a nearby school - St. Stephen School, Warden Road. Our department also share the existing resources like hydra model system, microbial culture medium with other colleges strengthening our ties with neighbouring colleges.
	e-content development	100 % (2 marks)	Students have created several digital content like infographics, ppt and videos and have published them online as Open educational resources (OER) and on YouTube. We are also in the process of utilizing the college studio facilities for e-content development for school children of 9th Standard. All departments maintain an instagram and facebook handle along with a you tube channel to disseminate information

* For quantitative analysis you may fix five objectives (max) each having 2 marks and accordingly can calculate the matrix.



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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 31.12.2023	Remarks if any
Grants for creation of capital assets (Non- recurring)	6000000.00	5554717.50	445282.50	
Grants-in-aid General (Recurring)	1724723.00	1856898.40	0.00	
Total	7724723.00	7411615.90	445282.50	



Course Coordinator

(With Seal)



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Head of the Institution

(With Seal)

Annexure 1
Hands on and new Experiments Introduced Under Star Scheme

Life Science

Practicals	Under Star Scheme	Post Star College Scheme
FYBSc	26 (old) + 3 (new)	32
SYBSc	30 (old) + 3 (new)	31
TYBSc	36 (old) + 7 (new)	71

Microbiology

Practicals	Under star scheme	Post Star College Scheme
FYBSc	67 + 2 Demo	62
SYBSc	58 + 2 Demo	71
TYBSc	65	96

Chemistry

Practicals	Under star scheme	Post Star College Scheme
FYBSc	26 (Two Papers)	57 +4 (Hands on)
SYBSc	30 (Three Papers)	46+ 2 (Hands on)
TYBSc	46 (Four Papers)	68+23 (Hands on)

Composite Department

Practicals	Under star scheme	Post Star College Scheme
FYBSc	40 (Three Papers) - Zoology and Physics	40 (Hands on) + 16 (Proposed)
SYBSc	24 (Three Papers)	24 (Hands on) + 9 (Proposed)



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Annexure 2

Publications

1. *Exploring the usage of phyto-extracts in the fabrication of Dye-Sensitized Solar Cell.* Arabia Syed, Nidhi Shirali, Shriya Chaubal, Dr Geetanjali Ganguli and Dr Sree Nair.2024. Electronic International Interdisciplinary Research Journal. Volume 13. Issue III. Pages 1-10. Publisher EIIRJ. ISSN–2277- 8721.
2. *Exploring the Bouba Kiki paradigm among the population of a metropolitan city.* Sarah Issa Sayed, Shriya Amit Chaubal, Sharath Kumar and Sree R Nair. 2024 Frontiers in Animal Science: Research and Development. Volume 2. Pages 99-120.Publisher - Bhumi Publishing. ISBN 978-93-95847-13-.
3. *Chemically Synthesized Silver Nanoparticles on Dental Biofilm-forming Microorganisms.* Joshi, P., Dabir, A., Parkar, A., Shaikh, Z., D'mello. A., et al. (2023). Evaluation of Antimicrobial Effect of Biologically & Science Chronicles in Research and Investigation Based Education, 4(1), 12-18.

Presentation at Conferences:

1. "Investigating the toxicity of several facial cleansers using *Moina* sp." Sanika More, Meghna P R, Sarah Sayed, Dr. Sree Nair. Annual Conference on Toxicology Research & Development. RUSA Funded 2nd Online International Annual Conference Organised by Department of Zoology, Sophia College.on 07th -08th December, 2023
2. Evaluation of curcumin as a protective agent for *Caenorhabditis elegans* exposed to high glucose diet. 19th National Research Scholars Meet, 7th-8th December 2023. ACTREC,Kharghar.
3. Phytoremediation of Organic Dyes Using Aquatic Plants.Nidhi Shirali, Arabia Syed, Shriya Chaubal, Dr. Geetanjali Ganguli, Sree R Nair. National Conference on Environment Sustainability – Scientific, Economic and Social Implications organized by Internal Quality Assurance Cell, Royal College of Arts ,Science & Commerce,Mumbai,On 10th Feb 2024
4. To Investigate The Use of Aquatic Plants for Phytoremediation Of Synthetic Textile Dyes. Umaima Ansari, Firdos Khan, Sree R Nair.National Conference on Environment Sustainability – Scientific, Economic and Social Implications organized by Internal Quality Assurance Cell, Royal College of Arts ,Science & Commerce,Mumbai,On 10th Feb 2024
5. Impact of Vermicompost vs Synthetic Fertilizer on growth of Microgreen. Ayesha Moosa, Rohini Nair, Zeel Lopes and Sree Nair.National Conference on Environment Sustainability – Scientific, Economic and Social Implications



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organized by Internal Quality Assurance Cell, Royal College of Arts ,Science & Commerce,Mumbai,On 10th Feb 2024

6. Two TYBSc students Ms.Vaishnavi Subramaniam and Ms. Padmakeerti Yeleswarapu of batch 2022-23 presented their work at 18th Aavishkar: Inter-collegiate zonal round on 9th December 2023.Guide Dr Prabha Shetty

Training Received by Faculty:

Annexure 3

2023-24		
No.	Name of Faculty	Conference / Workshop / Course Attended
1.	Ms. Shraddha Prabhu	<ol style="list-style-type: none"> 1. Attended a Workshop on Rules and regulations for Aavishkar Research Convention on 18th July 2023 at D.G. Ruparel College, Mumbai <u>aavishkar workshop certificate ruparel.jpg</u> 2. Attended one day faculty development workshop on - "Empowering educators: AI workshop for academics", organized by IQAC, Sophia College (Autonomous) on 30th November, 2023. <u>Ms Shraddha Prabhu IQAC Certificates AI workshop.pdf</u> 3. RUSA IQAC workshop on E-content development on 25th January 2024 (9:30 am to 12:30 pm) organized by Sophia College (Autonomous). <u>Ms Shraddha Prabhu IQAC Certificate E-Content Workshop.pdf</u> 4. Attended a SRB sponsored workshop on 'Omics in Biomedical research' at ICMR-NIRRH, Mumbai on 17th February 2024. <u>OBR workshop certificate sp.pdf</u>
2.	Dr. A Surti	<ol style="list-style-type: none"> 1. Attended a talk organized by the department of Life Science on the occasion of National Scientific Temperament Day by Dr Aniket Sule Associate Professor HBCSE, Mumbai on 25.8.23, 11am to 12pm. 2. Attended a RUSA Sponsored 5 day online workshop on 'Emerging trends in Research Methodology' from 3rd to 5th October 2023 organized by the department of Microbiology in collaboration with RSRI.



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		<p>https://drive.google.com/file/d/1HAqDV-iiEtbmgFWWcX3URQIMbslqaqCd/view?usp=drive_link</p> <p>3. Attended an Online training program on Book Writing organized by International Journal of Microbial Science from 20th February to 5th March 2024 and qualified screening test for a book writing eligibility with a score as 8/10</p> <p>https://acrobat.adobe.com/id/urn:aaid:sc:AP:beb40455-62c6-4fe3-90cb-335631a4b008</p>
3.	Mr. Vijay Vig	<p>1. Attended a workshop on 'Basic Proteomics' on 17th and 18th February 2024 at Indian Institute of Technology (IIT), Bombay</p> <p>Vijay Vig workshop IIT Proteomics Feb 2024.jpg</p> <p>2. Attended a five day course on Evolutionary Dynamics: Principles of pathogen evolution (theory and practical) from 3rd July to 7th July 2023 at Indian Institute of Technology (IIT), Bombay.</p> <p>https://drive.google.com/file/d/1s4SyJo2roztlK7brSWUb0dl3KZurbFgl/view?usp=sharing</p>
4.	Dr. Swamini Patade	<p>1. Advanced online workshop on "AI tools" organized by IGNITE Life Skill Academy on 3rd December, 2023.</p> <p>2. Attended webinar on Biostatistics & Graphpad Prism organized by GraphStats Academy held on 20-11-2023.</p> <p>graph pad Swamini Patade-Graphpad Prism Webinar Participation Certificate.pdf</p> <p>3. Attended a two day International conference on Toxicology Research and Development organized by the Department of Zoology, on 7th and 8th December, 2023.</p> <p>Swamini Patade Oral presentation - Annual International Conference on Toxicology Research and Development, 2023.pdf Certificate of Participation - Annual International Conference on Toxicology Research and Development 2023.pdf</p>
5.	Dr. Rajbinder Dehiya	<p>1. Online 'One week FDP on Research Methodology organized by REST Society for Research International (RSRI) Krishnagiri, Tamil Nadu, from 06th - 10 November 2023.</p>



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		<p>2. Advanced online workshop on "AI tools" organized by IGNITE Life Skill Academy on 3rd December, 2023.</p> <p>3. Participated in the training program of "Youth Engagement and Water Stewardship (YEWS)" at B. K. Birla College of Arts, Science & Commerce (Autonomous), an initiative of UNICEF and the Directorate of Higher Education (Maharashtra), on 16th September 2023</p>
6.	All staff members	Harnessing the best practice for gamification for student centered learning of stem subjects. September 15 2023
		"Empowering Educators: AI for Academics" 30th November 2023
		"Change of Curricula in Light of National Education Policy." December 9, 2023

Annexure – 4

Exhibitions/seminars/training courses conducted

Type of event	Name of event	Name of the Department conducting event	Participating department/s	No. of beneficiaries
2023-24				
Workshop	"Internet of Chemistry Things: IoT enabled AI applications in Chemistry by Dr M. Karthikeyan on 27th February 2024.	Chemistry	UG students	45
Annual Khandal Retreat	Mr. Sachin Rane 5th August 2023	Life Science	UG students	https://docs.google.com/presentation/d/19JeFCAWw69JWUPUspt-Ef665Xc0c5ypd/edit?usp=drive_link&ouid=108902076338675460732&rtpof=true&sd=true



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Research Meet	Quest-wider than the sky— Thirteenth, UG, students & Faculty Research Meet 28 th February 2024	Life Science	UG and PG students	https://drive.google.com/file/d/1kA8taOQS_UxabnSuTfGIGBPFww1SH2bs/view?usp=drive_link https://drive.google.com/file/d/1K_2pY-xJe_wlk7vX-ubUnacUxcXhLWso/view?usp=drive_link
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Outreach Activities

Annexure 6

GRACIOUS GIVING - CANCER AID DRIVE. on 1st March 2024. Cancer Aid drive Report 23-2024

E-Content Creation:

1. E-content for 9th and SSC students, 2 jan 2024, 13 TYBSc students taught students of St Stephens school from classes 1st to 4th for the whole academic year using this content
<https://drive.google.com/drive/folders/1PrEDsGjOr0ullo9mPecub-WuoyVY3ai8BxYJLVGqgLBMfFkwxMVU4YEiRBFTPndoGOV2SNi?usp=sharing>

2. Padlet Creation of Infographics - Animal Husbandry in India

<https://padlet.com/roshandsouza/animal-husbandry-in-india-cri1yfhddixhxs6y>

Science ADDA of 2023-24







1. 7th, 9th and 10th Standard students of St. Stephen schools were invited.
2. The day filled with learning and fun was organized by all the departments.
3. Learning science through performing experiments
4. Chem-Housie and Science Quiz fun activities were also organized
5. About 60 students participated.

Sharing Resources with other colleges:

S.No	Purpose activity conducted	Title of the talk/Activity	Date and time / Venue	Evidence/ Photos	
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1	Supply of Hydra model system	KISHORE BHARATI, CUBE Project	9th August 2024		
		Department of Biotechnology, Elphinstone College, Mumbai.	9th February 2024		
		Jai Hind College, Mumbai.	20th January 2024		
		Department of Botany, Ratnam College, Mumbai	9th October 2023		
2	Supply of <i>C.elegans</i> and <i>E.coli</i> OP50	Department of Life Sciences and Biochemistry, St. Xavier's College Mumbai	24th June 2023		
3	Supply of <i>Drosophila melanogaster</i>	Dept of Zoology, Wilson College, Mumbai	4th march 2024		
		Department of Bioanalytical			



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		Sciences, Rayat Shikshan Santha's.	8th September 2023		
4	Supply of Zebrafish	Bombay College of Pharmacy	18th October 2023		
5	Supply of Moina Culture	Department of Biotechnology, Elphinstone College Mumbai.	12th August 2024		

SEED: Science Education through Experiments and Demonstration:

The Department of Life Sciences invites school students and they perform advanced science experiments like DNA extraction, staging of chick embryos, mitosis in onion tips etc. This is to inculcate interest in STEM subjects.

Nobel Oration lecture Series:

Dr. Arindam Chowdhury, Professor, Department Of Chemistry, IIT Bombay

<https://docs.google.com/document/d/1GsdhjqjIDWph3EzTmT0xrCgrYpVpZHZJ1eEjE3DVHN3>

[A/edit?usp=drive link](#)

**List of Popular and Invited lectures conducted
Annexure 7**

S.No.	Name of the resource person	Title of the talk	Date	No. of Beneficiaries
Academic Year 2023-24				
1.	Dr Subhojit Sen, CEBS Kalina Campus Mumbai University	Talk on National Science Day	28 th February 2023	44



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2.	Dr Amrita Hazra, IISER Pune	The Ananya event (MILL- SCI- FEST 23')	23rd & 24 th January 2023	62
3.	Dr Mukesh Gupta	'Holistic health: A Strategic Planning'	1 st September 2023	55
4.	Ms. Rochelle Ferns Certified career counsellor, Life Sciences Lead, International College Dundee, University of Dundee, Scotland	Exploring Opportunities in Higher Education: scholarship and Funding	22 nd December 2023	35
5.	Dr. Dimple Dutta Professor (Chemical Sciences) Homi Bhabha National Institute Bhabha Atomic Research Centre Mumbai	Chemical Sciences and Career Opportunities	12 th January 2024	36
6.	Dr. Chandramouli Subramaniam Professor, Department Of Chemistry, IIT Bombay In association with IWSA	Towards sustainable green heat generation with nanostructured porous carbon	12 th February 2024	38

Student activities

Competitions

'CHEMQUEEN'	14 th July 2023.	40	Intra collegiate Chemistry Quiz for the UnderGraduate College students organised by the MSc Part II students on general chemistry: https://docs.google.com/document/d/1ujBecBohQN-Wwa7Y6Hb7C2-T-qp7oTdc3ShxjlvSHwY/edit?usp=drive_link
'Flavours of India'	25 th August 2023	42	Flavours of India - a food fest was organized to



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			commemorate the independence of India by showcasing diversity of the various cultures through their food. Proceeds were donated to charity https://docs.google.com/document/d/1M7mVQaZSu9rmaLGQEVZW0g-F2BWIenDXHe9SzMQxABc/edit?usp=drive_link
Microkahaniya : short story writing competition	January 2024	38	Microkahaniyan report.pdf MICROKAHANIYA SCORE SHEET
MicroGlam: creative event that included making Microdoodle, Micromeme, MicroKala(Face painting) based on the theme of microbiology	12th Jan 2024	36	MICROGLAM .pdf MICROGLAM AD.mp4 VID-20240112-WA0018.mp4

Projects undertaken by Students

Sr no	Name of the guide	Students involved	Name of the project	Conclusion/Achievement
1	Dr. Sree Nair	S21094 Ayesha Moosa, S21099 Rohini Nair, S21062 Zeel Lopes	Impact of Vermicompost vs Synthetic Fertilizer on growth of Microgreen	Presented in National Conference
2		S21093 Sarah Gonsalvez, S21081 Tania Shroff	Mushroom Cultivation using Coffee Grounds as a substrate for the Bioremediation of Phenols and Caffeine	
3		S21061 Umaima Ansari S21078 Firdos Khan	To investigate the use of aquatic plants for phytoremediation of synthetic textile dyes.	



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4		S21067 Sneha Narayanan, S21502 Deeann Cerejo, S21065 - Yeshashvi Marolikar.	Harnessing Light: Fabrication Of Dye-Sensitized Solar Cells	
5		S21082 Shraddha Yadav, S21115 Shriya Sharma	Carbon Sequestration of Different Areas in Mumbai and Thane.	
6		S21105 Bhoomi Khatri, S21108 Ritu Rajpurohit, S21110 Gulnaz Ansari	Vegan Meat Analogue.	
7		Afida Idrisi (S22134), Asmi Chishty (S22132) Farheena Shaikh	Exploring Consumer Awareness and Adoption of Biodegradable Sanitary Products	
8		Neha Shaikh (S22140), Madiha Mulla (S22137), Shaima Qureshi (S22138)	Your App Usage Journey: Surveying The Digital Landscape	
9		Iffat Kazi S22098, Sania Mallick S21063, Fatima Khan S22115, Arshi Chittiwala S22094	Survey On Nutritive Diet Of Athletes & Fitness Enthusiasts	
10		Prachiti Dalvi (S22133), Zeba Shaikh, S22141	Report of Survey on Unaware Superstitious Act.	
11		Safia Batatawala (S22111) Saniya Shaikh (S22123), Cianna Lopes (S22116)	Cosmetic elixirs: Unveiling the alchemy of skincare & its impact epidermal harmony.	
12		Bhavisha Patnaik (s22119), Krishika Narang (s22118), Aishi Singh (s22502)	Memory Retention.	
13		Rebecca Mathias (S22117), Suzanne D'Souza (S22504)	Sexual health & Awareness	
14		Sanika More, Meghna P R, Sarah Sayed,	Investigating the toxicity of several facial cleansers using Moina sp."	



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15	Dr. Sree Nair and Dr. Geetanjali Ganguli	Nidhi Shirali, Arabia Syed, Shriya Chaubal	Phytoremediation of Organic Dyes Using Aquatic Plants.	
16	Dr. Sree Nair	Umaima Ansari, Firdos Khan,	To Investigate The Use of Aquatic Plants for Phytoremediation Of Synthetic Textile Dyes.	
17	Dr. Sree Nair	Ayesha Moosa, Rohini Nair, Zeel Lopes	Impact of Vermicompost vs Synthetic Fertilizer on growth of Microgreen	
18	Mr. Mayur Gaikwad	S21081 Tania Shroff, S21115 Shriya Sharma.	Isolation and identification on Soil Nematodes from Native soil.	
19		S21065 Yeshashvi Marolikar, S21502 Deeann Cerejo, S21067 Sneha Narayanan	Identification of Native fruit fly.	
20		S21093 Sarah Gonsalvez , S21082 Shradha Yadav	Characterizing behavior in Giant African land Snail <i>Achatina fulica</i>	
21		S21062 Zeel Lopes S21099 Rohini Nair S21094 Ayesha Moosa	Effect of grey water on chemical properties of soil and growth development of <i>Cynodon dactylon</i>	
22		S21061 Umaima Ansari S21078 Firdos Khan	Assessing the Toxicity of Synthetic Textile Dye Effluent on <i>Moina</i>	
23	Dr. Sree Nair	S21105 Bhoomi Khatri, S21108 Ritu Rajpurohit S21110 Gulnaz Ansari	Role of seed coat in seed germination	
24	Dr Arjumanara Surti	Dhuha Shah and Saba Bajewala.	Preparation of turmeric extract and evaluate its antibacterial activity against different bacterial strains.	



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25		Preksha Sharma, Oindrila Chakraborty and Maheen Shaikh.	Screening of lipid granule producers from mangrove soil
26		Khushi Jain and Sakshi Sakunde	Isolation and Identification of Staphylococcus from sweetmeat and studying its virulence factors.
27		Samika Pandey, Cheryl Fernandes, Soha Siddiqui, Astha Singh, Sakshi Gupta and Aтира Noronha	Microbiological analysis of milk samples
28	Dr. Rajbinder Kaur Dehiya	Pranali Joshi, Haadiya, Heena Mehta, Sidra, Sobiya Ansari and Janhavi Raut	From Waste to Growth: Investigating Cellulose Nanoparticles Synthesized from Corn Stover for Agricultural Benefits
29		Class Project – FY B.Sc	Effect of waste water arising from usage of skin care products on the growth of microorganisms
30	Ms. Shraddha Prabhu	Nithya Kodurupaka, Saniya Bano Idrisi, Aiysha Khan	Effect of Different Growth Media On Pigment Production By Fungal spp Isolated From Soil
31		Fatema Tambawala, Shrujal Pothu, Masera Shaikh)	Study of Biofilm Formation By phenol degrader fungal species
32		Padmakirti Yeleswarapu	Biogenic synthesis of Silver nanoparticles using Actinomycetes sp. - Its application against biofilm causing organisms
33		Aneska d'Mello, Zarine Sheikh)	Evaluating the potential of VAM fungi in improving plant growth.
34		Noor Khan, Ruchi Bohidhar)	Extending the shelf life of microgreens by employing edible film incorporated with lactic acid bacteria (LAB). (
35	Mr Vijay Vig	Ms. Alen Shibu, Ms. Kirti Shinde, Ms. Zainab Khatoon, Ms. Yashra Khan	Isolation of genomic DNA from <i>Pseudomonas aeruginosa</i> , <i>Klebsiella pneumoniae</i> , <i>Staphylococcus aureus</i> , <i>Bacillus cereus</i> , and thermophilic bacteria



		Ms. Paridhi Dwivedi, Ms. Anjali Sharma, Ms. Zehra Bhinderwala Ms. Jollin Coelho, Ms. Farhat Memon, Ms. Sahana Kumara	using Perchlorate Method and its confirmation via UV-Visible Spectrophotometer (<i>Pseudomonas aeruginosa</i> and <i>Klebsiella pneumoniae</i>) (<i>S.aureus</i> , <i>Bacillus cereus</i>), (thermophilic bacteria). <i>E.coli</i> was used as a control in every case.	
		Ms. Samruddhi Reddy, Ms. Mehsham Ansari, Ms. Batul Ratlamwala, Ms. Ayesha Ansari, Ms. Fatema Ansari and Ms. Siddhi Nalawade.	To check the enzymatic and antimicrobial activity of bio enzymes made from fruits and vegetables peels and marigold petals. Isolation of plant pathogens from diseased plants Immobilization of lipase and its potential application	
	Ms Swamini Patade	Gulnaz Khan, Asma Surya, Vaishnavi, Zainab, Afnan Somani, Megha Pillai.	Determination of efficiency of phone sterilizing machine using ozone.	
		TYBSc class.	preparation of azo dyes, checking its potential as an indicator for acid base titrations and/or as a dye for fabric.	
		TYBSc students.	Sodium content in different brands of edible salt sample by ion exchange chromatography	
		TYBSc students.	The ash of dried leaves was used to prepare potash. The presence of potassium ion and carbonate ion was confirmed using a qualitative analysis method and the percentage of potash was determined by estimating potassium content using a flame photometer.	



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		SY B.Sc	Survey based on BMI Calculation (Zoology)	
		SY B.Sc	Preparation of milk product and creation of video	
		FY and SY B.Sc	Creation of working models (Physics)	

Educational visits:

1. A visit to Indian Institute of Science Education and Research (IISER), Pune on 6th March 2024 for all classes (53 students and 2 staff members).
 - o Visit Report
2. Visit to Nehru Science center on 11th December with FYBSc class
 - o Nehru Science centre visit 2023.jpg
3. TYBSc and MSc-II students were taken to Advanced Centre for Treatment, Research, and Education in Cancer (ACTREC) on 30th November 2023
Visit report-
<https://drive.google.com/file/d/1jz6EZ5468NsHZstNRVrulsDQ7usxOfgF/view?usp=sharing>
4. A visit to Indian Institute of Science Education and Research (IISER), Pune on 6th March 2024 for all classes (53 students and 2 staff members).



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