

DBT-STAR COLLEGE SCHEME Jaysingpur College Jaysingpur

Annual Progress Report

01.04.2024 to 31.03.2025

Dr. Sandip R. Sabale Co-ordinator DBT-Star College Scheme Dr. Surat A Manjare
Principal
Jaysingpur College Jaysingpur

Department of Biotechnology

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

1. Name of the College : **Jaysingpur College, Jaysingpur.**

2. Name of Coordinator, Designation: Dr. Sandip R. Sabale, Associate Professor,

Address, Phone nos. Department of Chemistry Jaysingpur College, Jaysingpur-

416101, Maharashtra

3. Assessment duration: 0 1 /04/2024 to 31/03/2025 Duration in years: 1 Year

4. Details of Departments Supported

Sl. No	Name of Department	Courses (B.Sc./M.Sc./PG Diploma, certificate etc.) offered	Regular Facul	ty members		
			Total =39			
			With Ph.D.	Without Ph.D.		
1	Chemistry	B.Sc. & M.Sc. (Analytical & Organic)	07	06		
2	Botany	B.Sc., Certificate course in Plant tissue	04	03		
		culture				
3	Zoology	B.Sc., Certificate course in MLT	05	03		
4	Physics	B.Sc.	05	02		
5	Mathematics and Stat	B.Sc.	01	02		

5. Number & Date of Advisory committee meeting: 01 meeting

Sr. No.	Date
01	20 th January, 2025

- 6. Qualitative improvements due to DBT support. Please highlight 5 salient points (within 500 words).
 - 1) Academic (Skill based education through additional experiments, Hands-on trainings): As proposed in the objectives with the help of equipment's and chemicals procured under DBT-Star support, the students are acquainted to use the instruments. As the number of instrument increased, every individual students are getting exposure towards experimental learnings. The 16 computers were newly added to Mathematics department, so that students can perform practicals individually. The interactive boards are adding the audio-visual teaching experience to the students. As our students are from the rural area, they are even a first learner to the computer. DBT Star college scheme has provided a wonderful facility to our students to be a part of this scheme and will be useful to enrich their knowledge their applications in the interdisciplinary research.
 - 2) Research Activities: The students are encouraged to be involved in research and are henceforth allotted them interdisciplinary minor research projects. Students participated and presented work in state/national and international level conferences. About 18 students have presented their work in multidisciplinary conferences. The students have secured 2nd rank in an international conference. The students of Botany and Mathematics have won state level and university-level quiz

competitions. The students have published research articles. Our 6 faculty received minor research

projects grant from Shivaji University Kolhapur. The faculty members published 49 research

papers in Scopus indexed journals.

3) Organization of Workshop, Conference and Lectures: One national conference, 13

workshops/seminars, 15 invited lectures, 5 exhibitions and 6 student's seminars have been

organized. These programs have boosted the scientific approach among the students.

4) Industrial visit and field visits: Departments have organized industrial visits, field visits and

visits to research laboratories to bridge a gap between theoretical knowledge and practical

applications. Students have explored to practical exposure, understanding industry practices, insight

into production methods, interactions with industrial professionals, career opportunities, innovation

and technology, safety and environmental practices.

Apart from above mentioned qualitative improvements, we would like to focus on the outreach

activities in which students were actively involved.

1) Panchganga River Water Quality Monitoring

Objective: To monitor the water quality of the Panchganga River.

Outcome: The students of B.Sc. II have undertaken the Panchganga River water monitoring

mission. Students collected water samples from 5 selected sampling sites for three seasons and

prepared detailed project report and submitted.

2) Shirol Tahsil Soil Health Mission

Objective: To monitor the soil health under soil health mission

Outcome: The students of B.Sc. III have undertaken the soil health mission. Students collected 362

samples from various villages of Shirol Tahsil and analyzed pH, EC, organic carbon, K, P, N, and

micronutrients using various techniques and prepared soil health cards.

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

Unleashing Curiosity: Science Promotion Workshop For Matric Students [II] under the SCHOOL [COLLEGE] CONNECT PROGRAM (NEP-2020)

With support of DBT Star College Scheme, Faculty of Science organized three days' Workshop for metric students from various high schools of Shirol tehsil of Kolhapur District during 05.12.2024 to 07.12.2024. This workshop has been an exhilarating journey, marked by countless moments of wonder, discovery, and shared excitement. Our workshop aimed not just to impart scientific knowledge, but to bring science to life, demystify its complexities, and foster a deep-seated passion for inquiry and discovery within each student. The purpose of this workshop was to promote the science among students from matric level in the rural area.

At the core of our workshop was a spirit of scientific inquiry. Participants engaged in hypothesis generation, experimentation, and passionate discussions fueled by the excitement of exploration. We sought to unravel fundamental questions in physics, biology, and chemistry through practical activities, open debates, and joint problem-solving exercises, deepening our appreciation of the scientific method. This report is a tribute to the boundless enthusiasm and intellectual curiosity of all participants. It embodies the spirit of scientific adventure that characterized our work and the unique joy of unraveling nature's enigmas. We hope that this report not only records our scientific achievements but also sparks the curiosity and passion of future scientists. The college extended an invitation to high school students to participate in a workshop held within its Science departments. The workshop saw participation from 558 students representing 17 high schools, who engaged in practical experiments, expert-led talks, tours of the gardens and biodiversity center, and other diverse activities.

We embarked on a mission to unravel the mysteries of Mathematics, Physics, Biology, and Chemistry, engaging in hands-on activities, lively debates, and collaborative problem-solving to deepen our understanding of the scientific method.

- 8. Lessons learnt / difficulties faced/suggestions if any, in the implementation of the programme and utilization of DBT grant. (Max 3 points within 300 words).
 - The payment transfer mechanism- Hybrid TSA mode, the time of (2 months).
 - ➤ Our academic year is June to May, so we were not aware of the time constraint as well as the organization of lectures/workshops that have been planned. However, the planned programs will be executed before the term end.
 - ➤ The university examinations were scheduled and postponed, which hampered the semester and calendar of activities, but we have learnt to execute the scheduled activities without time deviation.

9. **Key performance indicators**

S. no	Indicator	Pre-support (2022-23)										Du	ring /	After	Supp	port (2024-	25)			Remarks			
1	No. of students					Tot	tal =498					Total =383								College				
	admitted				241					257				[= 181					F = 2				Follows Jain Minority	
		Mino	SC	ST	OBC	G	Mino	SC	ST	OBC	G			G	admission rules									
		38	26	01	69	107	45	43	1	70	98	35	25	00	42	79	31	22	01	59		89	-admission rules	
2	No. of students passing out (%) Students Admitted/passing out (pass %)		73.52 %						94.61 % (2023-24)							Semester end examination ongoing (April- May- 2025)								
3	Drop-out rates					5.6											4.2%							
4	No. of students opting for MSc		Botany: 00 Zoology: 06 Chemistry: 22 Physics: 03 Mathematics & Statistics: 02							Botany: 06 Zoology: 03 Chemistry: 25 Physics: 05 Mathematics & Statistics: 14														
5	Average marks		70 %						Result Awaited								Semester end examination ongoing (April- May- 2025)							
6	No. of hands-on experiments being conducted					Botany: 138 Zoology: 97 Characteristics: 80			Botany: 145 Zoology: 130 Chemistry: 123															
	Conducted				,		hemistry: 89 Physics: 84			Physics: 105														
					Mathem			ics: 93				Mathematics & Statistics: 99												
7	No. of new experiments introduced		Mathematics & Statistics: 93 NA							Botany: 14 Zoology: 13 Chemistry: 08 Physics: 06 Mathematics & Statistics: 09														
8	Publications (Scopus indexed) /patents, if any.		NA						49						Research articles in process (Revision/draft mode)									
9	Training received by faculty					0	8									Zoo Chen	any: (logy: nistry: vsics: (04 : 12					FDP/ Hands- on/ workshop/Revi sed Syllabus	

			Mathematics & Statistics: 06	training
10	Exhibitions/seminars /training courses		National Conferences: 01 (Faculty of Science) Hands-on: Organized: 06	
	conducted	06	Workshops/Seminars: 13 Exhibition: 05	
			Wallpaper: 07	
			Student Seminar: 06	
11	Books/journals			
	subscribed from	00	00	
	grants			
12	Outreach activities		Industrial/Field visits & Study tours: 16	Industrial/field
	(Popular lectures)		Research methodology: 01	visits/Popular
			Avishkar: 01	Lectures
			Environment Awareness Rally: 03	
			National Day Celebrations: 02 (NMD, NSD)	
13	Colleges mentored to		Total: 02	
	apply for DBT Star	NA	Dapoli Urban Bank Senior Science College, Dapoli	
	College grants		2. Dr. P. K. M. College, Sangli	
14	Invited lectures		Botany: 04	Guest/Invited
			Zoology: 03	lectures
			Chemistry: 03	
			Physics: 03	
			Mathematics & Statistics: 02	

LINKS FOR DEPARTMENTAL REPORTS:

- 1) Department of Chemistry- https://btstarcollege.jaysingpurcollege.edu.in/wp-content/uploads/Chemistry-Reports-2024-25.pdf
- 2) Department of Physics- https://btstarcollege.jaysingpurcollege.edu.in/wp-content/uploads/Physics-Reports-2024-25.pdf
- 3) Department of Botany- https://btstarcollege.jaysingpurcollege.edu.in/wp-content/uploads/Botany-Reports-2024-25.pdf
- 4) Department of Zoology- https://btstarcollege.jaysingpurcollege.edu.in/wp-content/uploads/Zoology-Reports-2024-25.pdf
- 5) Department of Mathematics & Statistics- https://btstarcollege.jaysingpurcollege.edu.in/wp-content/uploads/Matmematics-Statistics-Reports-2024-25.pdf

10. **Self-evaluation**

Department	*Objective (as stated in proposal)	% achieved	Reasons for underachievement / If achieved, state in quantitative metrics			
	The list of practical's are included in curriculum which are unable to conduct due to unavailability of instruments	95%	 The academic year of the institute is 01.07.2024 to 30.04.2025. The graduate examinations were 			
	New interdisciplinary practical's are introduced considering the undergraduate students	100%	scheduled and postponed by university which hampered the semester and			
1) Physics-Chemistry	Interdisciplinary projects are proposed to inculcate research culture among the undergraduates	100%	arrangement of programs. 3) Hybrid-TSA migration time lapse			
2) Botany-Zoology	Newly proposed practical's and minor research projects are tuned to involve faculty of all departments to utilize their expertise.	100%				
3) Mathematics-Statistics	 To enhance the holistic approach towards the interdisciplinary scientific thinking among the students, staff and school teachers from the vicinity- Field Visits, Seminars, Workshops, and Training programs are planned for students Faculty Development Programs, Workshops, Hands-on training programs are planned for teachers Various laboratory safety, waste management programs are planned for laboratory staff 	90%				
	The instruments proposed are in sync with the planned experiments and projects	100%	Yes			

11. ZBSA Status: (Mark Check Box):

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

Remarks if, any:

We received remaining 50% Amount in month of February 2024, and is successfully utilized for the said purpose and UC is submitted to DBT.

12. Sanctioned Budget details:

(Rs. in Lakhs)

S.	Budgetary	Unspent	Grant Received/	Total	Actual	Balance	Remarks
No.	Object Heads	Balance	Assigned from	Grant	Expenditure	Grant	
		Carried	DBT during the	Available	incurred during	Available	
		Forward from	Financial Year		the financial		
		Previous			year		
		Financial Year					
A.	Grants for						ZBSA
	Creation of	0.00301	0.0	0.00301	0.0	0.00301	account
	Capital	0.00301	0.0	0.00301	0.0	0.00301	unspent
	Assets						balance is
B.	Grants-in-aid	0.01921	10.98079	11.00	10.99928	0.00072	Rs. 373/-
	General	0.01921	10.76079	11.00	10.33928	0.00072	
	Grand Total	0.02222	10.98079	11.00301	10.99928	0.00373	

PROJECT INVESTIGATOR

Dr. Sandip R. Sabale Coordinator

DBT-STAR College Scheme Jaysingpur College, Jaysingpur HEAD OF THE INSTITUTION

Dr. Surat A. Manjare PRINCIPAL

Jaysingpur College, Jaysingpur

Report: Sr. No. 6 to 14, Workshops, Seminars, Hands-on Trainings, Study/industrial visit organised by the departments under DBT-Star College Scheme



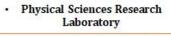
Sanctioned Interdisciplinary Minor Research Project by Shivaji University Kolhapur (2023-24 to 2024-25)

Name of Project	Investigators	Amount
Studies on Consortium Effect of Bimetalic Micronutrient based Chitosan Nanoparticals (ChNPs) on Cultivated <i>Vigna</i> species	PI- Dr. Suraj Umdale (Botany) Co-PI: Dr. Sandip Sabale (Chemistry)	1,70,000
Valorization of Polymer Waste Into Sustainable Activated Carbons For Co2 Capture And Supercapacitor-based Energy Applications	Dr. Sandip Sabale (Chemistry)	60,000
Green Synthsis Of Magnetic Nanoparticles, Their Characterizations & Catalytic Applications	Dr. Gurunath Nikam (Chemistry)	1,30,000
Analysis Of Novel Special Function	Dr. Jayvant Patade (Mathematics)	70,000
Synthesis And Characterization Of Copper Doped Bismuth Vanadate For Photocatalytic Degradation Of Organic Compounds	Dr. Prashant Chikode (Physics)	1,50,000
Insight to the phytochemical composition of host plants with special reference to Plain Tiger Butterfly <i>Danaus chrysippus</i> (Linn.)	PI- Dr. Sachinkumar Patil (Zoology) Co-PI: Dr. Suraj Umdale (Botany)	1,50,000

Establishment of Mathematical Computer Lab



Life-science Research Laboratory

















Academic Books & Book Chapters Published

Publications (Scopus indexed) = 49



energy fuels



Journal of Crop Health























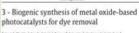




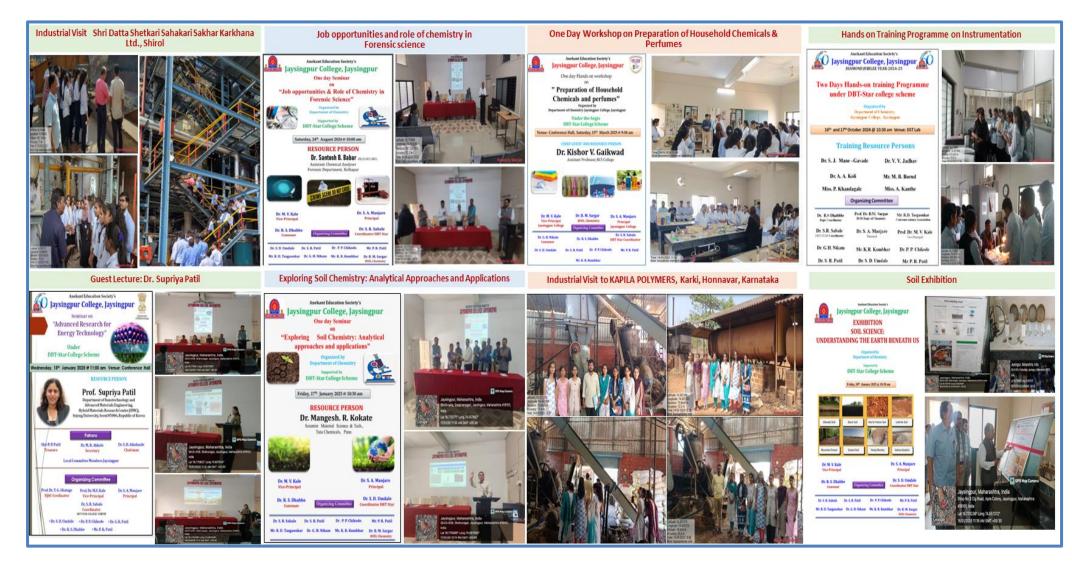








DEPARTMENT OF CHEMISTRY



DEPARTMENT OF PHYSICS



DEPARTMENT OF BOTANY



DEPARTMENT OF ZOOLOGY



DEPARTMENT OF MATHEMATICS & STATISTICS



PROJECT INVESTIGATOR

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Coordinator

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