

DEPARTMENT OF BIOTECHNOLOGY

**MINISTRY OF SCIENCE AND TECHNOLOGY
GOVERNMENT OF INDIA**

STAR COLLEGE SCHEME

PROJECT COMPLETION REPORT

(21.02.2022 o 20.03. 2025)

Submitted by

**R. P. Gogate College of Arts and Science and R. V.
Jogalekar College of Commerce (Autonomous),
Ratnagiri**

**Department of Zoology
Department of Chemistry
Department of Physics
Department of Botany**

Under the

DBT STAR COLLEGE SCHEME

Project Coordinator

Prof. Dr. Madhura Mukadam
Department of Zoology
Gogate–Jogalekar College, Ratnagiri
Maharashtra

Submitted to

**Department of Biotechnology (DBT)
Ministry of Science and Technology
Government of India**

Academic Period Covered:

(2022-2023 to 2024-2025)

COMPLETION REPORT
(21.02.2022 to 20.03.2025)

Department of Biotechnology

Proforma for submission of Completion Report supported under Star College Scheme

1. Name of the College: R. P. Gogate College of Arts and Science and R. V. Jogalekar College of Commerce (Autonomous), Ratnagiri
2. Name of Coordinator, Designation, Address, Phone nos. Dr. Madhura Deepak Mukadam
Coordinator and Professor
Department of Zoology, Gogate Jogalekar College,
Adv. N. V. Joshi Marg, Near District Court,
Ratnagiri- 415612
Mob. 9421552856
3. (A) Assessment duration : **21/02/2022 to 20/03/2025** (B) Duration in years : 03 years
(C) Extension period if any: NIL.
4. Details of Departments Supported

Sr. No.	Name of Department	Courses (B.Sc./M.Sc./PG Diploma, certificate etc.) offered	Regular Faculty members	
			With Ph.D.	Without Ph.D.
			Total = 20	
1.	Zoology	B.Sc. Ph. D.	02	02
2.	Chemistry	B.Sc. M.Sc. Ph. D.	05	02
3.	Physics	B.Sc. M.Sc. Ph. D.	02	02
4.	Botany	B. Sc. Ph. D.	02	03

5. Number & Date of Advisory committee meeting held :-

Sr. No.	Date
01.	21 st April 2023

6. Qualitative improvements due to DBT support. Please highlight 5 salient points (within 1000 words).

Department of Zoology:

1. Introduction of new practical experiments:

Before the STAR College Scheme, practical teaching was largely confined to the prescribed curriculum. With DBT support, additional practical experiments were introduced, including **Thin Layer Chromatography (TLC), enzyme immobilization and sperm count**, along with practical activities in zooplankton identification, Artemia culture, permanent histological slide preparation and artificial fish-feed preparation.

These activities provided students with additional hands-on laboratory skills and exposure to modern biological and analytical techniques.

2. Introduction of undergraduate student research projects:

Structured student research projects were introduced as a regular academic activity. Projects on ichthyofaunal diversity, bird diversity, water quality, fish compatibility, **Body Mass Index (BMI)** and menstrual abnormalities enabled students to undertake field observations, data collection, analysis and scientific report writing. This marked a shift from routine practical work towards research-based learning.

3. Exposure to advanced biological techniques:

Before the Scheme, undergraduate students had limited opportunities to learn specialised techniques beyond routine practicals. DBT support enabled hands-on training in **bioinformatics, electrophoresis, molecular biology, microtomy and histological techniques**. Interaction with experts from research and academic institutions further improved students' exposure to modern biological techniques.

4. Field-based and application-oriented learning strengthened:

Field visits and exposure to biological facilities were incorporated into undergraduate learning. Students visited **histopathology facilities, cage culture units, mangrove ecosystems, goat farming and bird farming units**, enabling them to relate classroom concepts to actual biological systems, biodiversity, aquaculture, conservation and applied zoology.

5. Research-oriented academic environment developed:

The department introduced research-oriented workshops, student conferences, expert lectures and specialised training programmes. The number of hands-on experiments increased from **60 before the Scheme to 64–65 during/after the Scheme**, with additional experiments introduced under the Scheme. These activities helped make research exposure and scientific activities a regular component of undergraduate education.

Department of Chemistry:

1. New analytical practical introduced:

Before the STAR College Scheme, the department did not have a documented TLC-based experiment. DBT support enabled the introduction of monitoring chemical reactions using thin-layer chromatography (TLC), benefiting 48 students. This provided students with practical exposure to an important analytical technique.

2. Microscale and green chemistry practices introduced:

DBT-supported workshops provided students with hands-on exposure to microscale techniques and green chemistry. Students were introduced to methods that emphasise efficient use of chemicals and laboratory resources, thereby extending practical learning beyond conventional laboratory exercises.

3. Training on sophisticated instruments and laboratory maintenance:

Earlier, students had limited direct exposure to sophisticated instrumentation and its maintenance. DBT support enabled training programmes on operation and maintenance of laboratory equipment and hands-on training with sophisticated instruments. This improved familiarity with laboratory instrumentation and its practical applications.

4. Industrial exposure strengthened:

Industrial visits were incorporated into departmental activities, including visits to Midspray Pvt. Ltd. (Cipla), Goa, and Finolex Industries and Ultratech Cement, Ratnagiri. These visits provided students with direct exposure to industrial processes and helped them relate theoretical chemistry concepts to practical industrial applications.

5. Interaction with experts and career awareness increased:

The department organised lectures and programmes on research grants, green jobs, career pathways, chirality and prospects in chemistry. These activities provided students with direct

interaction with experts and increased their awareness of research, higher education and employment opportunities in chemistry.

Department of Physics

1. Hands-on experimental learning expanded:

DBT support enabled the department to provide additional hands-on experimental learning through programmes such as “Exploring the World of Science with Experiments” and demonstration-based activities. Students received opportunities to observe, perform and discuss experiments beyond the routine practical curriculum.

2. Exposure to scientific facilities increased:

Before the STAR College Scheme, students had limited exposure to specialised scientific facilities outside the college. Study visits to the Pilot Balloon Observatory and physics laboratories provided students with direct exposure to scientific instruments, measurement procedures and applications of physics.

3. Technical skills in computer hardware introduced:

A national-level workshop on repair and maintenance of computer hardware was organised with expert participation. This gave students exposure to practical troubleshooting and maintenance skills, extending their learning beyond conventional physics theory and laboratory experiments.

4. Scientific exhibition and project-based learning strengthened:

Project and book exhibitions and National Science Day activities provided students with opportunities to display scientific concepts and projects. This created a platform for students to demonstrate their understanding through models, experiments and scientific presentations.

5. Awareness of higher education and research opportunities improved:

Invited lectures and academic programmes exposed students to learning skills, organisational development and research opportunities for science graduates in India and abroad. These activities provided students with information about higher education and research pathways beyond the routine classroom curriculum.

Department of Botany

1. Skill-oriented certificate courses introduced:

DBT support enabled the department to introduce structured certificate courses in fruit preservation and processing, herbal cosmetics and plant propagation practices. These courses provided students with practical, application-oriented skills beyond the conventional undergraduate Botany curriculum.

2. Medicinal plant identification skills strengthened:

A dedicated workshop on identification of medicinal plants of the Konkan region was organised. Students received practical exposure to local medicinal flora and their identification, strengthening their field-based botanical skills.

3. Field-based biodiversity learning expanded:

Field visits to Amba Ghat and Ranpar, along with activities related to mangroves, medicinal plants and local vegetation, provided students with direct exposure to natural ecosystems. This supplemented textbook-based learning with observation and identification in natural habitats.

4. Science outreach and community-based learning increased:

The department organised exhibitions on mangroves, medicinal plants and wild vegetables and conducted nature-based activities for school students and community members. These activities gave undergraduate students opportunities to communicate botanical knowledge and created a link between college education and the local community.

5. Applied Botany and local-resource-based learning strengthened: Training in herbal cosmetics, fruit preservation, plant propagation and medicinal-plant identification provided students with practical exposure to the utilisation of plant resources. The department also

conducted exhibitions and seminars on medicinal plants and wetlands, linking Botany education with local biodiversity and its practical applications.

7. Any Novel aspect introduced during the Scheme duration.

1. Introduction of Undergraduate Research Projects:

A structured research-project component was introduced for undergraduate students across the participating departments. Students undertook small research projects involving field studies, data collection, analysis, interpretation and scientific report writing. This provided students with research exposure at the undergraduate level and encouraged them to develop research aptitude at an early stage.

2. Introduction of Advanced and Application-based Practical Training:

Practical learning was expanded beyond routine prescribed experiments through exposure to bioinformatics, electrophoresis, molecular biology, microtomy, histological techniques, TLC, microscale and green chemistry, artificial fish-feed preparation and other hands-on activities. This provided students with practical exposure to techniques beyond the regular curriculum.

3. Integration of Field-based, Industrial and Experiential Learning:

Field visits, industrial visits and visits to specialised scientific facilities were incorporated into the learning process. Students received direct exposure to mangrove ecosystems, aquaculture, histopathology facilities, industrial units, observatories and specialised laboratories, enabling them to relate theoretical concepts to real-world applications.

4. Student Participation in Scientific Conferences, Exhibitions and Outreach:

Students were provided structured opportunities to present and communicate scientific knowledge through conferences, exhibitions, seminars and outreach activities. The Student Conference on “Wetlands and Human Wellbeing” and the National Science Day exhibition “Cellular Chronicles” provided platforms for students to present their scientific understanding and interact with other learners and experts.

5. Introduction of Skill-oriented and Career-linked Training:

Certificate courses and specialised training programmes were introduced to provide students with practical skills linked to applications and career opportunities. These included training in herbal cosmetics, fruit preservation and processing, plant propagation, research methodology, sophisticated instrumentation and other skill-based areas.

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

Lessons Learned:

1. Strengthening of laboratory and research facilities:

The DBT support helped in expanding basic equipment and infrastructure facilities in the participating departments. This resulted in better practical exposure and improved the implementation of laboratory-based activities.

2. Development of research aptitude among students:

Introduction of research projects for first- and second-year students across the participating departments provided early exposure to research methodology. Students were also encouraged to participate in and present their work at conferences and seminars. Interaction with eminent subject experts further strengthened the research-oriented learning environment.

Difficulties Faced and Suggestions:

3. Financial planning and scheduling of additional activities:

A major difficulty was the lack of clear-cut demarcation of the amount to be utilised under different expenditure heads such as recurring and contingency. Organising additional sessions, workshops and activities beyond the regular academic schedule was also challenging. Efficient planning and time management helped overcome the scheduling difficulty. Clear guidelines regarding fund allocation under each head at the beginning of the Scheme would facilitate smoother implementation and utilisation of the grant.

9. Key performance indicators

S. no	Indicator	Pre-support							During /After Support								Remarks	
1	No. of students admitted	Total =							2022-23 Total = 527									
		M= 138				F=252			M=134				F=293					
		SC	ST	OBC	G	SC	ST	OBC	G	SC	ST	OBC	G	SC	ST	OBC	G	
		21	00	57	60	11	01	97	143	12	02	75	45	28	01	132	132	
									2023-24 Total = 373									
									M=96				F=277					
									SC	ST	OBC	G	SC	ST	OBC	G		
									11	03	54	28	19	00	123	135		
									2024-25 Total =329									
									M=109				F=220					
									SC	ST	OBC	G	SC	ST	OBC	G		
									13	05	60	31	27	01	101	91		
									2025-26 Total = 404									
									M=149				F=255					
									SC	ST	OBC	G	SC	ST	OBC	G		
									13	05	92	39	31	02	121	101		
									2022-23		2023-24		2024-25		2025-26			
2	Admission cut-off%																	
3	No. of students passing out (%) [Students Admitted /passing out (pass%)]	Zoology	90%						60%		78%		95%		97%			
		Chemistry	85%						52%		70%		76%		80%			
		Physics	90%						62%		75%		87%		90%			
		Botany	100%						100%		80%		100%		100%			
4	Drop-out rates	Zoology	2%						1%		1%		0%		0%			
		Chemistry	3%						2%		2%		1%		1%			
		Physics	4%						2%		2%		0%		0%			
		Botany	2%						1%		1%		0%		0%			
5	No. of students opting for MSc / M. Tech / PG Diploma in Science	Zoology	04						04		07		05		06			
		Chemistry	10						10		15		14		16			
		Physics	03						02		04		03		04			
		Botany	03						04		06		05		07			
6	Average marks	Zoology	63						66%		72%		87%		89%			
		Chemistry	60						63%		66%		80%		68%			
		Physics	58						62%		64%		78%		90%			
		Botany	66						68%		70%		90%		100%			
7	No. of hands-on experiments being conducted	Zoology	60						64		65		65		65		ANNEXURE –I	
		Chemistry	60						64		64		64		64			
		Physics	60						64		64		64		64			
		Botany	60						70		70		70		70			
8	No. of new experiments introduced	Zoology	NIL						05		03		NIL		NIL			
		Chemistry	NIL						01		01		NIL		NIL			
		Physics	NIL						NIL		NIL		NIL		NIL			

[ANNEXURE –I](#)

		Botany NIL	NIL	NIL	NIL	NIL	
9	Publications (Scopus indexed) /patents, if any.	Zoology NIL Chemistry NIL Physics NIL Botany NIL	NIL NIL NIL NIL	NIL NIL NIL NIL	NIL NIL NIL NIL	NIL NIL NIL NIL	
10	Training received by (A) Faculty (B) Students (Summer/ Winter Projects)	Zoology 03 Chemistry 04 Physics 03 Botany 03	03 - - 04	05 02 00 01	07 - 01 -		ANNEXURE -II
11	Exhibitions/seminars/Training courses conducted	Zoology 03 Chemistry 01 Physics 01 Botany 04	07 03 04 08	08 02 02 05	05 02 01 04	07 02 NIL NIL	ANNEXURE -III
12	Books/journals subscribed from grants	Zoology NIL Chemistry NIL Physics NIL Botany NIL	06 NIL NIL NIL	NIL NIL NIL NIL	04 08 26 06	NIL NIL NIL NIL	ANNEXURE -IV
13	Outreach activities (Popular lectures)	Zoology 02 Chemistry 02 Physics 02 Botany 02	NIL NIL 01 01	01 01 01 04	01 01 01 00	NIL NIL NIL NIL	
14	Colleges mentored to apply for DBT Star College grants	NIL	NIL	NIL	01		
15	Invited lectures	Zoology 02 Chemistry 02 Physics 01 Botany 02	03 01 NIL 02	02 NIL 02 01	02 02 NIL 2		ANNEXURE -V

10. Details of colleges/schools mentored during the Star Scheme Tenure (Name of college/school; class/standard; No. of students benefited; whether any mentored college applied under Star College Scheme, if yes what was the outcome.

During the STAR College Scheme tenure, one nearby college, **DBJ College, Chiplun**, was formally mentored by the participating departments of the college. The mentoring focused on sharing experience regarding implementation of student-oriented practical activities, scientific training, research-oriented activities and effective utilization of facilities developed under the STAR College Scheme.

In addition, 27 Faculty members from nearby colleges participated in the training/academic activities organized under the Scheme. Their participation provided exposure to hands-on learning, scientific activities and interaction with faculty and students of the participating departments.

11. Details of increase in the faculty generated resources viz extramural research grants from other funding agencies to strengthen the Star College Scheme efforts.

During the Scheme period, faculty members continued to undertake research and academic activities and participated in research-oriented training programmes, conferences and capacity-building activities. These activities contributed to strengthening the research environment of the participating departments.

However, no significant increase in extramural research grants from external funding agencies specifically attributable to the STAR College Scheme period is reported in the present completion report. Therefore, no additional amount is claimed under this head.

The STAR College support primarily contributed to strengthening laboratory infrastructure, practical facilities, student research activities, workshops, expert interactions and faculty capacity building. These facilities and activities have created a stronger foundation for faculty members to pursue competitive extramural research funding in the future.

12. SOPs developed, lab manuals created and uploaded on website or submitted to DBT.

During the STAR College Scheme period, SOPs and practical laboratory manuals were developed for various practical and skill-based activities introduced under the Scheme. Manuals were prepared for Apiculture, Fish Keeping, Haematology, Bioinformatics, Zooplankton Identification, Artemia Culture, Histological Slide Preparation, Artificial Fish-feed Preparation, TLC-based Analysis and other specialized practical activities. The manuals contained standardised procedures, requirements, precautions and methods of observation/interpretation. These manuals were used for student training and were compiled and published on the institutional website, providing students and faculty with easy access to standardised practical protocols.

13. Self-evaluation

For quantitative self-evaluation, five major objectives of the STAR College Scheme were considered. The percentage achievement has been assessed based on the activities implemented, student participation, infrastructure development and measurable outcomes during the Scheme period.

Department	Objective (as stated in proposal)	% Achieved	Reasons for underachievement / Quantitative metrics
Zoology	Strengthening practical training and introducing additional hands-on experiments for undergraduate students.	90%	The number of hands-on experiments increased from 60 before the Scheme to 64–65 during/after the Scheme. Five new experiments were introduced. Some planned activities could not be conducted to the full extent due to academic scheduling and time constraints.
Chemistry	Strengthening practical and analytical skills through new experiments, workshops and exposure to modern laboratory techniques.	85%	A new TLC-based experiment was introduced, and 48 students benefited. Training in microscale techniques, green chemistry and laboratory equipment was conducted. Further expansion of sophisticated instrumentation and advanced practical training remains an ongoing requirement.

Physics	Providing additional hands-on training, scientific exposure and opportunities to learn through specialised facilities.	85%	Hands-on science programmes, exhibitions, observatory visits, computer hardware training and visits to specialised laboratories were conducted. The objective was substantially achieved, although regular academic schedules limited the frequency of additional activities.
Botany	Developing practical, field-based and application-oriented skills among undergraduate students.	90%	Certificate courses in herbal cosmetics, fruit preservation and processing and plant propagation were introduced. Workshops, field visits and exhibitions were conducted. Further expansion of skill-based courses and field activities can be undertaken in the future.
All Participating Departments	Developing research aptitude and providing undergraduate students with exposure to research, scientific communication and interaction with experts.	85%	Research projects were introduced for undergraduate students, along with conferences, seminars, exhibitions, workshops and expert interactions. However, the research culture and student participation require continued support and regular activities for further strengthening.

14. Point-wise **achievements** against the **objectives** [Eight] given in the **Guidelines**

No.	DBT Objective	Achievement
1	Strengthening academic and physical infrastructure	Laboratory infrastructure, equipment and practical facilities were strengthened in Zoology, Chemistry, Physics and Botany.
2	Improving teaching-learning through hands-on exposure	New practicals, workshops and hands-on activities were introduced, providing students with learning beyond routine curriculum.
3	Networking with neighbouring institutions and laboratories	Expert interactions, institutional visits, industrial visits, mentoring and collaborative activities strengthened institutional networking.
4	Specialised faculty training	Faculty participated in workshops, conferences and specialised training in contemporary scientific and pedagogical areas.
5	Strengthening instrumentation	Equipment and instrumentation facilities were strengthened, and training on operation and maintenance of laboratory equipment was provided.
6	Student exposure to research laboratories and industries	Students visited research laboratories, specialised facilities, industries, observatories, aquaculture units and other field locations.
7	Standard curricula, SOPs and practical manuals	SOPs, practical protocols and laboratory manuals were developed for several practical and specialised activities and made available for student training.
8	Strengthening library facilities	Books and reference resources were added in relevant subject areas to support undergraduate teaching, practical work and research activities.

15. Details of **activities** performed as given in the **Guidelines**.

During the STAR College Scheme period, the participating departments implemented a range of student-centred, practical, research-oriented and outreach activities.

1. Strengthening of Practical Training

Additional hands-on experiments and practical activities were introduced in the participating departments. In Zoology, five new experiments were introduced, including zooplankton identification, Artemia culture, permanent histological slide preparation and artificial fish-feed preparation. Chemistry introduced TLC-based analysis, while other departments strengthened experimental and demonstration-based learning.

2. Student Research Projects

Undergraduate students were involved in small research projects covering biodiversity, environmental studies, health-related topics and applied sciences. Zoology projects included ichthyofaunal diversity, bird diversity, water quality, fish compatibility, BMI and menstrual abnormalities. These projects provided students with experience in field observation, data collection, analysis and scientific report preparation.

3. Workshops and Training Programmes

Several hands-on workshops and training programmes were organised in modern scientific techniques. These included bioinformatics, electrophoresis, molecular biology, microtomy, microscale and green chemistry, laboratory equipment maintenance, computer hardware maintenance, medicinal plant identification and other skill-based programmes.

4. Field Visits and Industrial Exposure

Field and educational visits were organised to provide students with experiential learning. Activities included visits to histopathology facilities, mangrove ecosystems, cage culture units, goat and bird farming units, industrial establishments, observatories and specialised laboratories.

5. Seminars, Conferences and Expert Lectures

Students and faculty were provided opportunities to interact with subject experts through seminars, invited lectures and conferences. Topics included wetlands, microplastics, climate change, freshwater ecosystems, marine mammals, biodiversity conservation, research opportunities and career development.

6. Scientific Exhibitions and Student Participation

Students actively participated in scientific exhibitions and communication activities. A Student Conference on “Wetlands and Human Wellbeing” and a National Science Day exhibition on “Cellular Chronicles” were organised. Such activities provided students with opportunities to present scientific concepts and communicate their learning.

7. Certificate and Skill-oriented Courses

Skill-oriented certificate courses were conducted, particularly in Botany, including herbal cosmetics, fruit preservation and processing, and plant propagation. Similar application-oriented training was provided in other departments through specialised workshops and practical programmes.

8. Outreach and Interdisciplinary Activities

The participating departments conducted outreach activities involving students from schools and other colleges. Activities included workshops, nature camps, exhibitions on medicinal plants and wild vegetables, green chemistry programmes and physics demonstrations. These activities extended the benefits of the STAR College Scheme beyond the participating departments.

9. Faculty Development and Capacity Building

Faculty members participated in workshops, training programmes, conferences and capacity-building activities covering innovative pedagogy, bioinformatics, molecular modelling, animal handling, phytoconstituent extraction, *Drosophila*-based teaching and other contemporary areas. This strengthened the capacity of faculty to introduce updated methods into undergraduate teaching.

10. Development of Learning Resources and Infrastructure

The Scheme supported improvement of laboratory infrastructure and practical facilities and enabled departments to procure books and other learning resources. In Zoology, resources related to mangroves, marine resources, forensic medicine and toxicology, research methodology and publication ethics were added.

16. Details of the procured equipment (as per submitted asset certificate) which would be retained by the college after completion of the project for future research and academics as Annexure-I with request letter for the retention of procured equipment.

Details of Equipment Procured During the Project Period

(Financial figures given in this equipment procurement details are shown in lakhs)

Sr No	Name of Equipment/ Asset	Sanctioned Cost (as per proposal)	Quantity Procured	Actual Cost (Figures, not to round off)	Balance to be reimbursed
	1	2	3	4	5
	Botany				
1	Hand refractometer	39000.00	6	16637.00	Nil
2	Digital scale weighing balance	50000.00	10	38940.00	Nil
3	Water bath	80000.00	4	71744.00	Nil
4	Pocket pH meter	50000.00	10	56050.00	Nil
5	Student's microscope	200000.00	20	178416.00	Nil
6	Binocular microscope	100000.00	4	76464.00	Nil
7	Micropipette and tips	3500.00	20	567.00	Nil
8	Field press	1950.00	1	2714.00	Nil
9	Lab press	1600.00	2	2337.00	Nil

10	Garden implements set	4000.00	10	4000.00	Nil
11	Corking machine	15000.00	1	6490.00	Nil
12	Tabletop induction	15000.00	6	29401.00	Nil
13	Pulper, Juicer	20000.00	4	20000.00	Nil
14	Oven	40000.00	2	15999.00	Nil
15	GPS unit	80000.00	4	106200.00	Nil
16	DSLR camera	50000.00	1	49950.00	Nil
	Chemistry				
17	Photoelectric colourimeter	90000.00	6	72216.00	Nil
18	Digital thermostatic water bath	47560.00	2	35872.00	Nil
19	Vacuum pump	70000.00	2	65962.00	Nil
20	Conductometer	45000.00	3	37170.00	Nil
21	pH meter	40000.00	3	31506.00	Nil
22	Ice flex machine	100000.00	1	110684.00	Nil
23	Magnetic stirrer with hot plate	25000.00	2	23128.00	Nil
24	Polarimeter 220mM with sodium lamp assembly	120000.00	3	143370.00	Nil
25	Single pan digital balance	240000.00	6	211692.00	Nil
26	Magnetic hot plate stirrer	33000.00	2	33040.00	Nil
27	Photocatalytic reaction assembly	43000.00	1	43000.00	Nil
	Physics				
28	Experimentl setup for dielectric constant measurement	17000.00	1	19115.00	Nil
29	Millikan's oil drop experiment complete setup	22000.00	1	25488.00	Nil
30	Spectrometer	60000.00	3	26019.00	Nil
31	Thomson's tube apparatus with HT power supply	28000.00	1	30208.00	Nil

32	Microcontroller	40000.00	3	33160.00	Nil
33	Travelling microscope	48000.00	3	49560.00	Nil
34	Microprocessor	66000.00	6	66319.00	Nil
35	Constant deviation spectrometer and Na source power supply	80000.00	1	80948.00	Nil
36	Cathode ray oscilloscope	150000.00	3	150450.00	Nil
37	Function generator	52500.00	7	56994.00	Nil
38	Spectrometer	80000.00	3	78057.00	Nil
39	Power supply	20000.00	1	20709.00	Nil
40	Oscilloscopes	150000.00	2	137848.00	Nil
41	Travelling microscope	50000.00	5	60268.00	Nil
42	Telescope	40000.00	6	43330.00	Nil
	Zoology				
43	Binocular 10X42	55000.00	2	38900.00	Nil
44	Binocular 8X42	12000.00	2	17100.00	Nil
45	Binocular	6000.00	1	6100.00	Nil
46	Vertical electrophoresis 4 wells	100000.00	2	15461.00	Nil
47	Vertical electrophoresis 9 wells		1	13346.00	Nil
48	Horizontal electrophoresis 4 wells		4	29085.00	Nil
49	Horizontal electrophoresis 13 wells		1	13070.00	Nil
50	Power supply pack		2	10677.00	Nil
51	UV-transilluminator		1	17954.00	Nil
52	Hemocytometer	40000.00	20	47172.00	Nil
53	WBC and RBC pipette	5000.00	40	3824.00	Nil
54	Compound microscope	20000.00	12	3824.00	Nil
55	Turbidity meter	20000.00	2	24780.00	Nil
56	Digital balance	20000.00	2	35071.00	Nil
57	BOD incubator	50000.00	1	67260.00	Nil
58	pH meter	37500.00	3	38350.00	Nil

59	Colorimeter	30000.00	6	33276.00	Nil
60	TLC plates	20000.00	5	55726.00	Nil
61	Digital water bath	35000.00	2	16638.00	Nil
62	Visible spectrophotometer	80000.00	1	24662.00	Nil
63	Hot air oven	15000.00	1	99970.00	Nil
64	Cooling heating incubator	53500.00	1	70564.00	Nil
65	Refractometer	17000.00	6	99710.00	Nil
66	Portable dissolved oxygen meter	25000.00	2	33866.00	Nil
67	Mosquito rearing cages	24000.00	3	23600.00	Nil
68	Microcentrifuge machine	100000.00	5	58675.00	Nil
69	Mini cell homogeniser	46000.00	1	45135.00	Nil
70	Cooling heating incubator	60000.00	1	53159.00	Nil
Total				Rs. 33,58,977/-	


Course Coordinator
(With Seal)

Program Coordinator
DBT Star College Scheme
Gogate College of Arts & Science And
R.V. Jogalekar College of Commerce, Ratnagiri.




Head of the Institution
(With Seal)
Principal
R.P. Gogate College of Arts & Science and
R.V. Jogalekar College of Commerce
(Autonomous), Ratnagiri

ANNEXURE –I

NEW EXPERIMENTS INTRODUCED

DEPARTMENT OF ZOOLOGY

2022-2023

New Experiments Conducted (5)		Class/Semester	No. of students benefited
1	Collection of water samples and identification of zooplankton.	F. Y. B.Sc. /Sem. I	20 https://tinyurl.com/3s2thbhp
2	Culture of Artemia as a live feed.	S. Y. B.Sc. /Sem. III	24 https://tinyurl.com/4unj4zxx
3	Writing of an abstract from the given research paper.	S. Y. B.Sc. /Sem. IV	15 https://tinyurl.com/6w8kxwtx
4	Preparation of permanent histological slides.	T. Y. B.Sc. /Sem. V	30 https://tinyurl.com/3wrharxu
5	Preparation of Artificial fish feed.	T. Y. B.Sc. /Sem. VI	15 https://tinyurl.com/4pnm6hae

ZOOLOGY: PROJECTS (2)			
Sr. No	Project Title	Class/Semester	Name of student /Supervisor
1.	Ichthyofaunal diversity from Ganeshgule, Ratnagiri, west coast of Maharashtra. https://tinyurl.com/4c67enj2	F.Y. B. Sc. /Sem II	Ms. Sharvari Umesh Todankar Ms. Rakhi Sandip Rangankar Ms. Tanvi Subodh Rangankar /Ms. Bhakti Salkar
2.	Species diversity of birds in and around Kasheli, Ratnagiri. https://tinyurl.com/y75nj8bv	F. Y. B. Sc./ Sem II	Mr. Prasad Promod Sutar and Mr. Pranav Bhalchandra Sutar

2023-24

New Experiments Conducted (3)		Class/Semester	No. of students benefited
1	Preparation of ppm and ppb solutions.	F. Y. B. Sc./Sem I	6 https://tinyurl.com/yhbduj9s
2	Assessment of the compatibility of different fish varieties in a community tank	F. Y. B. Sc./ Sem II	10 https://tinyurl.com/59j8pnn9
3	To analyse water samples from the industrial areas for	T. Y. B. Sc./ Sem VI	5 https://tinyurl.com/3yzdpmxu

	the amount of total dissolved solids (TDS) and total suspended solids (TSS)		
ZOOLOGY: PROJECTS (2)			
Sr. No	Project Title	Class/Semester	Name of student /Supervisor
1.	Assessment of Body Mass Index among undergraduate students in Ratnagiri	F.Y. B. Sc./ Sem II	Pallavi Hadimani and Khatija Shaikh/ Supervisor- Ms. Mohini Bamane https://tinyurl.com/5en7n3y7
2.	Study of Menstrual abnormalities and their association with changing lifestyle in adolescent girls in Ratnagiri	S. Y. B. Sc. / Sem IV	Swara Shinde and Rucha Rawool / Supervisor- Dr. Madhura Mukadam https://tinyurl.com/ha8xxk4y

2024-25

New Experiments Conducted (3)		Class/Semester	No. of students benefited
1	TLC- Monitoring and separation of chemical components using Thin Layer Chromatography (TLC), with emphasis on separation, identification and interpretation of chromatographic spots.	F. Y. B. Sc./Sem II	15 https://tinyurl.com/28xr5z7x
2	Enzyme immobilisation - Study of enzyme immobilisation techniques and evaluation of the activity of immobilised enzymes, providing students with practical exposure to an important technique used in biotechnology and industrial applications.	T. Y. B. Sc./Sem V	12 https://tinyurl.com/3aytbv2f
3	Sperm count- Estimation of sperm count using an appropriate counting chamber and microscopic examination, providing students with practical understanding of reproductive biology and quantitative analysis of biological samples.	S. Y. B. Sc./Sem IV	20 https://tinyurl.com/4kc7usmx

DEPARTMENT OF CHEMISTRY

2022-23

New Experiments Conducted (01)		Class/Semester	No. of students benefited
1.	Monitoring of chemical reactions using thin-layer chromatography (TLC)	F. Y. B.Sc. I /S. Y. B. Sc. Sem. IV	48 https://tinyurl.com/y5bbpc4j

DEPARTMENT OF PHYSICS

2023-24

New Experiments Conducted (01)		Class/Semester	No. of students benefited
1.	To study optical rotation of optically active compounds like sucrose and dextrose with a polarimeter, 16 th March 2024	F. Y. B.Sc. Sem. II	35 https://tinyurl.com/a6x5n6fu

ANNEXURE –II

LIST OF TRAINING COURSES/WORKSHOPS/CONFERENCES ATTENDED BY THE FACULTY/STUDENTS

DEPARTMENT: ZOOLOGY

2022-23

Sr. No.	Title	Date	Proofs (Hyperlinked)
Name: Dr. Madhura Mukadam			
1.	One-Day Gender Sensitisation Workshop	21 st Feb. 2023	http://tinyurl.com/3fruzxsp
2.	International Conference on Beyond Access and Parity: Complicating the Narrative of Gender equality in Higher education in India.	23 rd to 25 th Feb. 2023	http://tinyurl.com/2tvnd8da
Name: Ms. Mohini Bamane			
1.	Accidents do not happen accidentally	11 th Oct. 2022	https://tinyurl.com/53fnpvu6
2.	Popularising the science of DNA barcoding	7 th to 9 th Dec. 2022	

3.	Bioinformatics tools & their applications	4 th to 5 th Feb.2023	https://tinyurl.com/yajj6tn6
4.	One-Day Gender Sensitization Workshop	21 st Feb. 2023	
5.	International Conference on Beyond Access and Parity: Complicating the Narrative of Gender equality in Higher education in India.	23 rd to 25 th Feb. 2023	
Name: Mr. Ambadas Rodge			
1.	Bioinformatics tools & their applications	4 th to5 th Feb.2023	https://tinyurl.com/4n89xhjx

2023-24

Sr. No.	Title	Date	Proofs (Hyperlinked)
Name: Dr. Madhura Mukadam			
1.	Online Certificate Course Cum Workshop of 10 Days on “Exploring the Power of CHATGPT: Enhancing Communication and Learning” organised by the Department of Computer Science in Collaboration with E-Resource Development Cell, Sanatan Dharma College, Ambala Cantt, Kurukshetra University, Kurukshetra	1 st Sept. to 10 th Sept. 2023	https://tinyurl.com/589takmd
2.	A 10-day online interactive workshop on “Molecular Modelling, Docking and Simulation Studies ” organised by Codon Biosciences Pvt. Ltd. Goa.	16 th Oct. to 27 th Oct. 2023	https://tinyurl.com/yeyn5x9b
Name: Mr. Ambadas Rodge			
1.	MS-DEED level-1 workshop on Introduction to Innovative Pedagogies and Assessment for UG Teachers at Ratnagiri	3 rd Feb. to 5 th Feb.2024	https://tinyurl.com/muf9rkjp

Name: Mrs. Kanchan Dhakade			
1.	MS-DEED level-1 workshop on Introduction to Innovative Pedagogies and Assessment for UG Teachers at Ratnagiri	3 rd Feb. to 5 th Feb.2024	https://tinyurl.com/5d6t437t

STUDENTS

Sr. No.	Title	Date	Proofs (Hyperlinked)
Ms. Khatija Shaikh, Ms. Pallavi Hadimani, Shreyas Murkute, Vedant Dalvi			
	Green Business Plan competition 2024 organised by Centre for Sustainable Development at Gokhale Institute of Politics and Economics, Pune	Jan 2024	Selected for Final round https://tinyurl.com/y6n8e2cx
Ms. Rakhi Rangankar and Tanvi Rangankar			
	Diversity of Ichthyofauna from Ratnagiri, Ganeshgule, Maharashtra's west coast. (International Journal of Biological & Medical Research)	2024	https://tinyurl.com/2s3sux4f

2024-25

Sr. No.	Title	Date	Proofs (Hyperlinked)
Dr. Madhura Mukadam			
1.	5-day online workshop on 'Mastering Flow cytometry: Principles, Techniques and Applications' organized by Codon Biosciences Pvt. Ltd., Goa	15 th July to 19 th July 2024	https://tinyurl.com/yy8wpjbw
Ms. Mohini Bamane			
1.	One-week capacity-building program for UG science teachers at HBSCE, Mumbai	11 th March to 16 th March 2024	https://tinyurl.com/bdfbc9ph
2.	10-day online hands-on workshop on 'Molecular Modelling, Docking and Simulation studies' organized by Codon Biosciences Pvt. Ltd., Goa	12 th Dec. to 21 st Dec. 2024	https://tinyurl.com/mspe549v

Name: Mr Ambadas Rodge			
1	7-day hands-on Workshop for college Teachers on using Drosophila melanogaster for Biology Laboratory Classes organised by Banaras Hindu University, Varanasi at IISER, Pune	24 th Dec. to 30 th Dec. 2024	https://tinyurl.com/mr34y8t6
Name: Ms Aarti Damle			
1.	Teacher training workshop 2.0 supported by Lady Tata Memorial Trust, 'Cellular and Molecular Biology: From Gene cloning to protein expression and cellular localisation' organised by UM-DAE Centre for Excellence in Basic Sciences (CEBS)	17 th to 20 th Dec. 2024	https://tinyurl.com/y8476fd5
2.	Workshop on Animal Ethics, Hands-on Animal Handling and Practical Techniques organised by School of Biological Sciences and Biotechnology, Goa University	30 th & 31 st Jan. 2025	https://tinyurl.com/3r6a2sxh
3.	2-day Workshop on "Extraction and Isolation of Phytoconstituents" organised by Indira Institute of Pharmacy, Sadavali 22-23 Feb. 2025.	22 nd to 23 rd Feb. 2025	https://tinyurl.com/3pdmczw2

STUDENTS

Sr. No.	Title	Date	Proofs (Hyperlinked)
Ms. Simran Bhatkar Ms. Jhubeda Hodekar and Ms Khatija Shaikh			
1.	International Multidisciplinary Conference at Vaibhavwadi College, Vaibhavwadi	29 th and 30 th Nov. 2024	https://tinyurl.com/nh9up8sx
Ms. Sanika Kotapkar, Ms Diya Lingayat and Ms. Janhavi Lingayat			
1.	Participated and presented as research project at 19 th Aavishkar Intercollegiate	10 th Dec 2024	https://tinyurl.com/4ukvraan

	Research Convention organized by University of Mumbai		
Ms. Swara Shinde and Ruch Rawool			
1.	Workshop on Animal Ethics, Hands-on Animal Handling and Practical Techniques organised by School of Biological Sciences and Biotechnology, Goa University	30 th & 31 st Jan. 2025	https://tinyurl.com/nhawzd7p
Ms Simran Bhatkar, Jhubeda Hodekar			
1.	Characterisation of Some Selected Morphometric and Meristic Features of Commonly Occurring Fish Species from Mirkarwada Landing Centre, Ratnagiri in the journal International Journal of Innovative Scientific Research ,2025, Vol. 3, Issue	Jan 2025	https://tinyurl.com/bdcwv3br

DEPARTMENT: CHEMISTRY

2022-2023

Sr. No.	Title	Date	Proofs (Hyperlinked)
Name: Dr. Aparna M. Kulkarni			
1.	3rd International Conference on “Women in Science & Technology: Creating Sustainable Career” organised at Birla Vishvakarma Mahavidyalaya (Engineering College)	28 th Dec. 2023 to 30 th Dec. 2023	https://tinyurl.com/yfufzn89
2.	MS-DEED Level 1 In-person Workshop on Introduction to Innovative Pedagogies for Undergraduate Teachers at Ratnagiri	3 rd April 2023 to 5 th April 2023	https://tinyurl.com/5n7jpp8z

DEPARTMENT OF PHYSICS

2023-24

Sr. No.	Title	Date	Proofs (Hyperlinked)
Name: Dr. Bhushan Dhale			
1.	MS-DEED level-1 workshop on Introduction to Innovative Pedagogies and Assessment for UG Teachers at Ratnagiri.	3 rd to 4 th Feb. 2024	https://tinyurl.com/4ed7cwua
2.	National Seminar on Applications of Nanoscience and Nanotechnology organised by Post Graduate Department of Physics, Devchand College, Arjun Nagar, Karnataka.	26 th Feb. to 2 nd March 2024	https://tinyurl.com/2k76sun8
3.	IP Awareness/Training program under National Intellectual Property Awareness Mission organised by Intellectual Property Office, India.	28 th Sept. 2023	https://tinyurl.com/mnrfdwz2
4.	Faculty Development Programme on Advanced Physics in Engineering organised by Department of Basic Science and Humanities at Sanjivan Engineering and Technology Institute, Panhala, Kolhapur.	11 th to 15 th March 2024	https://tinyurl.com/m5f4auu2

2024-25

Sr. No.	Title	Date	Proofs (Hyperlinked)
Ms. Nisha Kelkar			
1.	Poster presentation at Frontiers in Geosciences Research Conference conducted by Physical Research Laboratory from	5 th to 7 th Feb 2025	https://tinyurl.com/ex6zb3x6

DEPARTMENT: BOTANY

2022-23

Sr. No.	Title	Date	Proofs (Hyperlinked)
Name: Dr. Sonali S. Kadam			
1	Maharashtra State Development of Educators and Enhancement in Delivery (MS-DEED) Programme	3 rd to 5 th April 2023	https://tinyurl.com/2mp8f7x3
2	Design and Development of Online Courses	6 th June 2022 to 11 th June 2022	https://tinyurl.com/3h4r7xvd
3	FDP on Leveraging Teaching Learning Through Case Study Methodology	22 nd August 2022 to 27 th August 2022	https://tinyurl.com/4dxjbdys
Name: Rujuta Parag Godbole			
1	Accidents do not happen accidentally	11 th October 2022.	https://tinyurl.com/kwhxwxda
2	Maharashtra State Development of Educators and Enhancement in Delivery (MS-DEED) Programme	3 rd to 5 th April 2023	https://tinyurl.com/48wac4v9
3	Bioinformatics tools & their applications	4 th to 5 th Feb. 2023	https://tinyurl.com/4wymabdm
4.	MS-DEED Level 1 In-person Workshop on Introduction to Innovative Pedagogies for Undergraduate Teachers	3 rd to 5 th April 2023	https://tinyurl.com/z2fnz7sk
Name: Priyanka Amol Shinde-Avere			
1	Maharashtra State Development of Educators and Enhancement in Delivery (MS-DEED) Programme	3 rd to 5 th April 2023	https://tinyurl.com/4z7mj84v
2	Bioinformatics tools & their applications	4 th to 5 th Feb. 2023	https://tinyurl.com/7aazcbc7
Name: Mr. Paresh Ganpat Gurav			
1	Maharashtra State Development of Educators and Enhancement in Delivery (MS-DEED) Programme	3 rd to 5 th April 2023	https://tinyurl.com/3p3a2f8x

2023-2024

Sr. No.	Title	Date	Proofs (Hyperlinked)
Name: Mrs. Rujuta Godbole			
1.	MS-DEED level-1 workshop on Introduction to Innovative Pedagogies and Assessment for UG Teachers at Ratnagiri.	3 rd to 4 th Feb. 2024	https://tinyurl.com/2rvjyuud

ANNEXURE –III**EXHIBITIONS /SEMINARS/TRAINING COURSES CONDUCTED/ VISITS****DEPARTMENT OF ZOOLOGY****2022-23**

Sr. No.	Title	Date	Resource Persons	No. of Beneficiaries
Trainings				
1.	Research techniques in biological sciences	9 th May to 13 th May 2022	Dr. Madhura Mukadam Mr. Ambadas Rodge and Ms. Mohini Bamane	10 https://tinyurl.com/3ytd3wb
Workshops				
1.	Bioinformatics Tools and Applications	4 th and 5 th Feb. 2023	Experts from Codon Biosciences, Goa	28 https://tinyurl.com/5n777a7j
2.	Preparation of Permanent Histological Slides	13 th Feb. 2023 to 14 th Feb. 2023	Dr. Madhura Mukadam Mr. Ambadas Rodge and Ms. Mohini Bamane	30 https://tinyurl.com/3wrharxu
3.	Electrophoresis and Molecular Biology techniques	23 rd Feb. 2023 to 25 th Feb. 2023	Dr. Amruta Bhavne and Ms. Bhakti Salkar	30 https://tinyurl.com/jx56a6zc
Seminar				
1.	Coastal Wetlands of India: Threats and Solutions	2 nd Feb. 2023	Dr. Mahua Saha, Scientist, NIO Dr. Deepak Apte, EX-Director, BNHS, Mumbai	97 http://tinyurl.com/2w54j2nf
Field Visits				
1	Visit to Histopathology	20 th Aug. 2022	Mr. Ambadas	31

	Museum of B.K. Walawalkar Hospital, Dervan		Rodge and Ms. Mohini Bamane	https://tinyurl.com/2u2z3h4a
2	Field visit at cage culture, Gurav-wadi, Gaonkhadi and Mangrove safari at Pavas.	16 th Jan. 2023	Mr. Ambadas Rodge and Ms. Mohini Bamane	20 https://tinyurl.com/mv6pwmaw

DEPARTMENT OF CHEMISTRY

Sr. No.	Title	Date	Resource Persons	No. of Beneficiaries
Workshops				
1.	Research grants from RGSTC	21 st Sept. 2022	Dr. V.V. Mahajani	20 https://tinyurl.com/wxn8fec4
2.	Microscale Techniques in Chemistry	11 th Dec.2022	Dr. A. M. Kulkarni	24 https://tinyurl.com/5evwfj2p
Field Visits				
1.	Midspray Pvt. Ltd. (Cipla) Goa	21 st Jan. 2023	-	28 https://tinyurl.com/4th54zbe

DEPARTMENT OF PHYSICS

Sr. No.	Title	Date	Resource Persons	No. of Beneficiaries
Training				
1	Exploring the world of science with experiments	6 th Jan.2023 to 8 th Jan. 2023	Dr Shirish Pathare and Mr. Chetan Mandloi, HBCSE TIFR	34 http://tinyurl.com/yn4dutpd
Exhibitions				
1	Project and Book Exhibition	2 nd Feb. 2023	-	51 http://tinyurl.com/yc2nvttn
Field Visits				
1	Study visits to Railway Station -Ratnagiri	2 nd March 23	Mr. Kove -Station Superintendent	15 http://tinyurl.com/yjsuvcs7
2	Study visits to Pilot Balloon Observatory, Nachane, Ratnagiri	17 th Feb. 2023	Mr R. B. Sonar – Meteorologist-A, Pilot Balloon Observatory	16 http://tinyurl.com/44wn8ttf

DEPARTMENT OF BOTANY

Sr. No.	Title	Date	Resource Persons	No. of Beneficiaries
Training courses				
1.	Fruit preservation and processing certificate course	23 rd to 30 th June 2022	Shri. Sharad Apate and Priyanka Shinde-Avere	23 http://tinyurl.com/46n6rvfc
2.	Herbal cosmetics certificate course	10 th to 17 th Sept & 19 th to 22 nd Oct. 2022	Dr. Sonali Kadam and Smt. Rujuta Godbole	24 http://tinyurl.com/3fbkt26e
3.	Plant propagation practices certificate course	9 th to 17 th Jan. 2023	Shri. Sharad Apate and Dr. Sonali Kadam	39 http://tinyurl.com/4d3rmfte
Workshops				
1.	Plant Identification	6 th to 7 th Feb. 2023	Prof. Milind Sardesai	22 http://tinyurl.com/mv2p98nt
Exhibitions				
1.	Mangroves and Mangrove-Associated Plants	26 th July 2022	-	125
2.	Medicinal plants	24 th and 25 th August 2022.	-	255
Field Visits:				
1.	Field visit to Amba Ghat	16 th Dec.2022	Mr. Apate Sharad and Mrs. Godbole Rujuta	35 http://tinyurl.com/yck8t7a8
2.	Field visit to Ranpar	23 rd July 2022	Mr. Apate Sharad and Mrs. Shinde-Avere Priyanka	29 http://tinyurl.com/3sbvrbj4

2023-24

DEPARTMENT OF ZOOLOGY

Sr. No.	Title	Date	Resource Persons	No. of Beneficiaries
Workshops				
1.	A comprehensive workshop on 'Research Roadmap'.	7 th to 8 th Dec. 2023	Dr. Madhura Mukadam and Dr. Sonali Kadam, Gogate Jogalekar College, Ratnagiri	80 https://11nk.dev/uj eu9oh

2.	A specialized workshop, Aquatic Mastery: Aquarium Setup, Maintenance, and Fish Breeding.	11 th Jan. 2024	Mr. Suyog Bhagwat, Proprietor, Suyash Aquarium, Ratnagiri	60 https://11nk.dev/v52c1sk
3.	A hands-on workshop on 'Artificial Fish Feed Preparation using the Square Method'.	20 th Jan. 2024	Dr Madhura Mukadam, Head, Dept. of Zoology, Gogate Jogalekar College, Ratnagiri	25 https://acesse.one/pbb6asf
4.	A hands-on workshop on 'Preparation of value-added fish products'	24 th Jan 2024	Dr. Asif Pagarkar and Shrikant Sharangdhar	28 https://acesse.one/2a9mzbc
Conferences				
1.	Student Conference on 'Wetlands and Human Wellbeing' on the occasion of World Wetlands Day, 2nd Feb. 2024	13 th Feb. 2024	UG students	60 https://acesse.one/1qgwa9m
Exhibitions				
1.	On the Occasion of National Science Day. Theme- 'Cellular Chronicles'	28 th Feb. 2024	UG students	200 https://acesse.one/mw8p4xi
Field Visits				
1	An industrial visit to Goat Farming, Vermicompost, and Exotic Bird Farming Unit at Devrukh, Dist. Ratnagiri	10 th Dec. 2023	Mr. Pranav Panwalkar	35 https://acesse.one/lpm436p
2	Field visit to the mangrove ecosystem at Narayanmali, Ratnagiri.	14 th Dec. 2023	Mr. Swastik Gawade, Project Associate, Mangrove Cell, Ratnagiri	40 https://11nk.dev/j8r85ys

DEPARTMENT OF CHEMISTRY

Sr. No.	Title	Date	Resource Persons	No. of Beneficiaries
Workshops				
1.	Microscale Experiments in Chemistry	21 st Jan 2024	Dr. Aparna Kulkarni, Associate Professor, Dept. of Chemistry, Gogate Jogalekar College, Ratnagiri	20 https://acesse.one/db3n9zy
2.	National Level Workshop On 'Operation and maintenance of laboratory equipments'	5 th to 9 th March 2024	N. N. Rao, Minal Tamhankar, Sudhir Kumar and Sarita Thopte, from Western Regional Instrumentation Centre (WRIC), University of Mumbai	25 https://acesse.one/0oqtsdo

DEPARTMENT OF PHYSICS

Sr. No.	Title	Date	Resource Persons	No. of Beneficiaries
Workshops				
1.	A National Level Workshop on 'Repair and Maintenance of Computer Hardware'	5 th to 9 th March 2024	Moosa Thakur, Faculty from Western Regional Instrumentation Centre (WRIC), University of Mumbai	25 https://tinyurl.com/exx5hsz7

DEPARTMENT OF BOTANY

Sr. No.	Title	Date	Resource Persons	No. of Beneficiaries
Training courses				
1.	A certificate course in 'Herbal cosmetics'	3 rd to 8 th Nov. 2023	Dr. Sonali Kadam, Mrs. Rujuta Godbole and Mrs. Priyanka Avere	27 https://tinyurl.com/4zibj92v

2.	A certificate course on 'Fruit preservation and processing techniques'	11 th to 15 th Dec. 2023	Dr. Sonali Kadam, Mrs. Rujuta Godbole, Mrs. Priyanka Shinde	18 https://tinyurl.com/2fbyws44
Workshops				
1.	Identification of Medicinal plants of the Konkan region.	4 th Sept.2023	Sharad Apate and Dr. Sonali Kadam	30 https://tinyurl.com/tew5pbsb
Exhibitions				
1.	Medicinal plants (Dry and fresh plant specimens)	4 th Sept. 2023	Sharad Apate and Dr. Sonali Kadam	42 https://tinyurl.com/3pza68et
Seminar				
1.	One-day seminar on Wetlands of South Konkan	7 th Feb. 2024	Dr Pramod Hanamgond, Chairman, Geological Society of India, Regional Centre, Belgaum	35 https://tinyurl.com/2tysxpkj

2024-2025

DEPARTMENT OF ZOOLOGY

Sr. No.	Title	Date	Resource Persons	No. of Beneficiaries
Training courses				
1.	Sustainable Farming	8 th Dec. 2024	Pranav Panwalkar	20 https://tinyurl.com/3wesvtz3
2.	Breeding and Rearing of Ornamental Fishes	27 th and 28 th Nov. 2024	Suyog Bhagwat	22 https://tinyurl.com/wnd7atnz
3.	First Aid Training Programme	1 st March 2025	Mr. Gaurav Sarpotdar	25 https://tinyurl.com/45cwm8x6
Workshop				
1.	Molecular Insights Workshop	5 th - 7 th Dec. 2024	Yogita Narvekar, Director, TechnoCraft, Mumbai	30 https://tinyurl.com/vejckdt
2.	One-day workshop on 'From Specimen to Slide: The Art of Microtomy'	14 th Oct. 2024	Dr. Mayuresh Dev	22 https://tinyurl.com/2kudjnuv

3.	Ideas to Impact	14 th to 15 th Dec. 2024	Prof. Dr. Milind Watave, Retired Professor in Biology from IISER, Pune	35 https://tinyurl.com/3hcnj4se
4.	Value-added fish products	24 th Jan 2025	Dr. Shrikant Sharangdhar, Associate professor, College of Fisheries, Shirgaon, Ratnagiri	30 https://tinyurl.com/2wb622w9
Seminar				
1.	Marine Biodiversity and its mapping Techniques and new advancement in the field.	28 th Oct 2024	Dr. Amruta Bhawe, Dr. Vishal Bhawe, Srushti Foundation, Pune	30 https://tinyurl.com/3e857ahj
2.	Use of AI Tools for Teaching in Higher Education	3 rd Dec. 2024	Dr. Bhooshan Kelkar	108 https://tinyurl.com/mm4rdnz3
Conference				
1	Student Research conference on the topic 'Science without boundaries'	23 rd Nov. 2024	--	45 https://tinyurl.com/33vp7y77
Field Visits				
1.	Histopathology Museum at B. K. Walawalkar Hospital and Medical college, Dervan.	19 th Aug. 2024	Dr. Arvind Yadav, Head of Biochemistry, BKW Hospital and College, Dervan	28 https://tinyurl.com/4xsun9pe
2.	Human Genetics Lab at Parvatibai Chowgule College, Goa	24 th Aug. 2024	Dr. Nandini Fernandes, Head, Department of Human Genetics	https://tinyurl.com/3b6y7h23
3.	Amba Reserve Forest Visit	24 th Oct. 2024	Dr. Digvijay Lawate, Associate Professor and Wildlife Researcher, Lanja	15 https://tinyurl.com/4acpx86x

4.	Visit to apiculture Unit at Naral Sanshodahn Kendra, Bhatye, Ratnagiri	13 th Jan 2025	-	11 https://tinyurl.com/2vts5vuh
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DEPARTMENT OF CHEMISTRY

Sr. No.	Title	Date	Resource Persons	No. of Beneficiaries
Training courses				
1.	Hands-on Training on Sophisticated Instruments	13 th Dec. 2024	Dr. Makarand Kulkarni, Scientific Instrument Expert, Instrumentation Centre, Solapur University, Solapur	33 https://tinyurl.com/2wdxkhve
Workshops				
1.	One-day workshop Microscale techniques in Chemistry (A green Chemistry Approach)	14 th Dec. 2024	Dr P. P. Kulkarni	40 https://tinyurl.com/mu2r25yk
Industrial Visits				
1.	Finolex Industries and Ultratech Cement, MIDC, Ratnagiri	3 rd Sept 2024		28 https://tinyurl.com/48czcnxb

DEPARTMENT OF PHYSICS

Sr. No.	Title	Date	Resource Persons	No. of Beneficiaries
Field visits				
1.	Pilot Balloon Observatory, Ratnagiri	16 th Aug 2024	-	29 https://tinyurl.com/583xr4h4
2.	Physics lab of Parvatibai Chowgule College (Autonomous), Goa	24 th Aug 2024	-	12 https://tinyurl.com/5x5kk4ks

ANNEXURE – IV

2022-23

DEPARTMENT: ZOOLOGY

<https://tinyurl.com/3d4b7v9p>

S. No.	Title	Qty	Author	Publisher
1.	Maharashtrachi Kandalvan Sampada	1	Swapna Prabhu, Deepak Apte and Nishigandha Pednekar	Srushti Conservation Foundation
2.	Maharashtrachi Sagar Sampada	1	Vishal Bhawe, Atul Sathe and Deepak Apte	Srushti Conservation Foundation
3.	The Essentials of Forensic Medicine & Toxicology	1	K. S. Narayan Reddy and O.P. Murty	Jaypee Brothers Medical Publ. Ltd.
4.	Curious Researcher: A Guide to Writing Research Papers	1	Bruce Ballenger	Pearson Education Ltd.
5.	Research and Publication Ethics: A textbook	1	Debabrata Basu, Samarpan Chakraborty and Aditya Sinha	Concept Publishing Company
6.	Writing Quality Research Papers	1	Pawan Singh and Baseem Khan	Bpb publications

2024-25

DEPARTMENT: ZOOLOGY

<https://tinyurl.com/3m2y8f93>

S. No.	Title	Qty	Author	Publisher
1.	Concept of Genetics	1	William S. Klug, Michael R. Cummings, Charlotte A. Spencer, Michael A. Palladino & Darrell J. Killian	Pearson Education Ltd.
1.	Developmental Biology 12th Ed.	1	Michael J. F. Barresi & Scott F. Gilbert	Oxford University Press
2.	Guyton and Hall Textbook of Medical Physiology	1	John E. Hall & Michael E. Hall	Elsevier
3.	Modern Medical Laboratory Technology: Methods and Interpretation	1	Ramnik Sood	Jaypee Brothers Medical Publishers
4.	The Practical Book of Beekeeping	1	David Cramp	Lorenz Books

DEPARTMENT: CHEMISTRY<https://tinyurl.com/muuzvv3x>

S. No.	Title	Qty	Author	Publisher
1.	Concise Inorganic Chemistry 5 th Ed.	1	J. D. Lee (John D. Lee)	Wiley / Wiley-Blackwel
2.	Textbook of Physical Chemistry Vol 1	1	K. L. Kapoor (K. L. Kapoor)	McGraw Hill
3.	Text Book of Physical Chemistry Vol 2	1	K. L. Kapoor (K. L. Kapoor)	McGraw Hill
4.	Text Book of Physical Chemistry Vol 3	1	K. L. Kapoor (K. L. Kapoor)	McGraw Hill
5.	Text Book of Physical Chemistry Vol 4	1	K. L. Kapoor (K. L. Kapoor)	McGraw Hill
6.	Text Book of Physical Chemistry Vol 5	1	K. L. Kapoor (K. L. Kapoor)	McGraw Hill
7.	Text Book of Physical Chemistry Vol 6	1	K. L. Kapoor (K. L. Kapoor)	McGraw Hill
8.	Text Book of Physical Chemistry Vol 7	1	K. L. Kapoor (K. L. Kapoor)	McGraw Hill

DEPARTMENT: PHYSICS<https://tinyurl.com/h2t34w6z>

S. No.	Title	Qty	Author	Publisher
1.	Principles of Electronics	2	V. K. Mehta & Rohit Mehta	S. Chand
2.	A textbook of Electrical Technology	1	B. L. Theraja & A. K. Theraja	S. Chand
3.	Electronics principles	3	Albert Paul Malvino	McGraw Hill
4.	A Text Book of Optics	2	Brij Lal, M. N. Avadhanulu & N. Subrahmanyam	S. Chand
5.	B. Sc. Practical Physics	1	Harnam Singh	S. Chand
6.	B. Sc. Practical Physics	2	Harnam Singh	S. Chand
7.	Mathematical Methods for Physics and Engineering	1	K. F. Riley, M. P. Hobson & S. J. Bence	Cambridge University Press
8.	Mathematical Physics	1	H. K. Dass & Rama Verma	S. Chand
9.	Principles of Physics	2	Halliday	Wiley
10.	Concepts of Physics -I	5	H. C. Verma	Bharati Bhawan
11.	Concepts of Physics -II	5	H. C. Verma	Bharati Bhawan
12.	Practical Physics	1		S. Chand

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<https://tinyurl.com/2arm7s8v>

S. No.	Title	Qty	Author	Publisher
1.	Taxonomy of Angiosperms	2	B P Pandey	S Chand
2.	Plant Anatomy	2	B P Pandey	S Chand
3.	Plant Pathology: Pathogen and plant disease	2		S Chand

OUTREACH INTERDISCIPLINARY ACTIVITIES**DEPARTMENT: PHYSICS****2022-23**

Sr. No.	Name of Activity	Date/s	Beneficiaries
1	Come and Learn Physics	25 th Feb, 2023	85 http://tinyurl.com/5nfc5ya3

2023-24**DEPARTMENT: ZOOLOGY**

Sr. No.	Name of Activity	Date/s	Beneficiaries
1	A workshop on 'Microtomy and Preparation of Histological Slides'	15 th Sept. 2023	20 https://tinyurl.com/448stam5

DEPARTMENT: CHEMISTRY

Sr. No.	Name of Activity	Date/s	Beneficiaries
1	A workshop on 'Green Chemistry and Microscale Technique' at New Arts, Commerce and Science College, Lanja	15 th March 2024	45 https://tinyurl.com/5x6vvnc7

DEPARTMENT: BOTANY

Sr. No.	Name of Activity	Date	Beneficiaries
1.	Nisarg Parichay Shibir for 5 th to 8 th standard students.	18 th to 19 th April 2023	22 https://tinyurl.com/4eve6wmb

2.	Nature walk at Kurdhe Fata for students and members of Paryawaran Mandal, Sky and Earth.	04 th Sept. 2024	80 https://tinyurl.com/yj37n2hz
3.	Exhibition of Wild vegetables in Shivaji High School, Ratnagiri	26 th Aug. 2023	60 https://tinyurl.com/4eve6wmb
4.	Exhibition of Wild vegetables in Godutai Jambhekar High School, Ratnagiri	29 th Aug. 2023	100 https://tinyurl.com/mrmyn2e

2024-2025

DEPARTMENT: ZOOLOGY

Sr. No.	Name of Activity	Date/s	Beneficiaries
1	Snake Day: A lecture on 'Awareness about Poisonous and Non-poisonous snakes'	10 th July 2024	25 https://tinyurl.com/ybrbet6n

DEPARTMENT: CHEMISTRY

Sr. No.	Name of Activity	Date/s	Beneficiaries
1.	Workshop on Microscale techniques in Chemistry at DBJ College, Chiplun	20 th July 2024	30 https://tinyurl.com/54e4dtac

ANNEXURE -V

DEPARTMENT: ZOOLOGY

2022-23

INVITED LECTURES

Sr. No.	Topic	Resource Person	Date	Beneficiaries
1	Microplastics in Wetlands: a possible threat to the ecosystem.	Dr. Mahua Saha, Principal Scientist, COD, NIO, Goa.	2 nd Feb. 2023	75 https://tinyurl.com/3pdcfpx4

2	Climate Change and Migratory Birds	Dr Deepak Apte, Director, Shruti Conservation Foundation, Pune	2 nd Feb. 2023	75 https://shorturl.at/agjxB
3	Freshwater Ecosystems of the Western Ghats	Dr Unmesh Katwate, Scientist B, Bombay Natural History Society of India	10 th Jan. 2023	50 https://tinyurl.com/4sjk2vf9

DEPARTMENT: CHEMISTRY

Sr. No.	Topic	Resource Person	Date	Beneficiaries
1	Green Jobs in the Environmental Sector	Dr Saraf	6 th Dec. 2022	150 https://tinyurl.com/5bu77k3y

DEPARTMENT OF BOTANY

Sr. No.	Topic	Resource Person	Date	Beneficiaries
1	Carnivorous Plants	Prof. Milind Sardesai	6 th Feb. 2023	108 https://tinyurl.com/yuykybk4
2	Biodiversity conservation: Importance and opportunities	Dr. Anuradha Upadhye	9 th Jan. 2022	75 https://tinyurl.com/3n4u5xyh

2023-24

DEPARTMENT: ZOOLOGY

Sr. No.	Topic	Resource Person	Date	Beneficiaries
1.	The Role of Marine Mammals in Marine Ecosystems	Dr. Anant Pande, Program Head, Marine Megafauna, WCS, Bengaluru Karnataka, India	13 th Jan. 2024	40 https://tinyurl.com/48hc3dn5

2.	The Benefits of Semi-Intensive Goat Farming Systems	Mr Pranav Panwalkar, Proprietor, of Aaashirwad Goat Farm, Devrukh	10 th Dec. 2023	35 https://tinyurl.com/3yccdmbf
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DEPARTMENT: PHYSICS

Sr. No.	Topic	Resource Person	Date	Beneficiaries
1.	Learning to Learn	Prof. Dr. Shyam Joshi, former Head and Principal of DBJ College, Chiplun	14 th Sept. 2023	84 https://tinyurl.com/46utt3yz
2.	Conquering Organisational Barriers	Mr. Mangesh Gadre	24 th Aug. 2023	35 https://tinyurl.com/yfbxep3a

DEPARTMENT: BOTANY

Sr. No.	Topic	Resource Person	Date	Beneficiaries
1.	Plants on the platter	Mandar Datar, Director of Agharkar Research Institute, Pune	6 th Feb. 2024	84 https://tinyurl.com/5xcet32r

2024-25

DEPARTMENT: ZOOLOGY

Sr. No.	Topic	Resource Person	Date	Beneficiaries
1.	Special lecture on International Mangrove Day on the topic 'Importance of Mangroves'	Mr. Swastik Gawade, Project Officer, Mangrove Cell, Ratnagiri	31 st July 2024	23 https://tinyurl.com/yvjbu7h6

2.	Marine Mammal Conservation-‘Role of Dugongs as Flagship Species.’	Ms. Prachi Hatkar, Researcher	10 th Jan 2025	20 https://tinyurl.com/56s3v93h
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DEPARTMENT: CHEMISTRY

Sr. No.	Topic	Resource Person	Date	Beneficiaries
1.	A special lecture on Chirality lesson	Prof. Anil Karnik, Former Head, Dept of Chemistry, University of Mumbai	24 th Sept. 2024	55 https://tinyurl.com/5awp9y4n
2.	A special lecture on ‘Prospects in Chemistry’	Prof Viswanath Patil I/C Director, Nano Science Centre, Mumbai	12 th Dec 2024	65 https://tinyurl.com/5ebdk5rb

DEPARTMENT: PHYSICS

Sr. No.	Topic	Resource Person	Date	Beneficiaries
1.	Research opportunities for science graduates in India and abroad: UG/PG research scholars	Dr. Sarfraz H. Mujawar, Associate Professor, Yashwantrao Chavan Institute of Science, satara	18 th Nov 2024	101 https://tinyurl.com/4dzv3xju
2.	Wonders of Physics: Hands-on demonstration of Physics Experiment for UG students	Prof. B. D. Chakrdev	26 th Nov. 2024	50 https://tinyurl.com/2zvnjfyfz